



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



## Map of the Project Area



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

**IFAD** Map compiled by IFAD | 27-03-2019

## Abbreviations and Acronyms

<b>ADB</b>	Asian Development Bank
<b>AFN</b>	Agriculture for Nutrition Project
<b>AIF</b>	Agri-business Investment Facility
<b>AWPB</b>	Annual Work Plan and Budget
<b>BMZ</b>	German Ministry for Economic Cooperation and Development
<b>CCA</b>	Climate Change Adaptation
<b>COSOP</b>	Country Strategic Opportunities Programme
<b>Costab</b>	Budgeting software
<b>DA</b>	Designated Account
<b>DAFO</b>	District Agriculture and Forestry Office
<b>Dol</b>	Department of Irrigation
<b>DONRE</b>	District Office of Natural Resources and Environment
<b>DPI</b>	Department of Planning and Investment (MAF)
<b>DSA</b>	Daily Subsistence Allowance
<b>DSEDC</b>	District Socio-Economic Development Committee
<b>EU</b>	European Union
<b>ERP</b>	Lao PDR Emission Reductions Program through Improved Governance and Sustainable Forest Landscape Management (ERP, BMZ/GCF-funded, to be implemented by GIZ).
<b>Farmod</b>	Farm modelling economic and financial software
<b>FGIF</b>	Farmer Group Investment Facility
<b>FNML</b>	Southern Laos Food and Nutrition Security and Market Linkages Programme
<b>FPIC</b>	Free, prior and informed consent
<b>GAP</b>	Good Agricultural Practice
<b>GCF</b>	Green Climate Fund
<b>GoL</b>	Government of Lao Peoples Democratic Republic
<b>HH</b>	households
<b>IFAD</b>	International Fund for Agricultural Development
<b>KM</b>	Knowledge Management
<b>Kumban</b>	Cluster of villages / administrative unit
<b>LAK</b>	Lao Kip (national currency)
<b>LWU</b>	Lao Women Union
<b>LtB</b>	Letter to the Borrower
<b>MAF</b>	Ministry of Agriculture and Forestry
<b>MoES</b>	Ministry of Education and Sports
<b>MoH</b>	Ministry of Health
<b>MoF</b>	Ministry of Finance
<b>MONRE</b>	Ministry of Natural Resources and Environment
<b>M&amp;E</b>	Monitoring and Evaluation
<b>PAFO</b>	Province Agriculture and Forestry Office
<b>PDR</b>	People's Democratic Republic
<b>PIM</b>	Programme Implementation Manual

<b>PLUP</b>	Participatory Land Use Plan
<b>ppp</b>	Purchasing power parity
<b>SACCC</b>	Smallholder Adaptation to Climate Change Component - FNML
<b>SLM</b>	Sustainable Land Management
<b>SNRMPEP</b>	Sustainable Natural Resource Management & Productivity Enhancement Project
<b>SRIWMSP</b>	Sustainable Rural Infrastructure and Watershed Management Sector Project
<b>SSSJ</b>	Community-based Food Security and Economic Opportunities Programme 'Soum Son Seun Jai'
<b>ToR</b>	Terms of Reference
<b>USD</b>	United States Dollar
<b>UXO</b>	Unexploded Ordnance
<b>VAT</b>	Value Added Tax
<b>VC</b>	Value Chain
<b>WA</b>	Withdrawal Application
<b>WOCAT</b>	World Overview of Conservation Approaches and Technologies
<b>WoP</b>	Without-project
<b>WP</b>	With-project

#### **Currency Equivalents**

<b>Currency Unit</b>	=	Lao LAK (LAK)
<b>US\$1.0</b>	=	LAK 8,564

#### **Weights and Measures**

<b>1 kilogram</b>	=	1000 g
<b>1 000 kg</b>	=	2.204 lb.
<b>1 kilometre (km)</b>	=	0.62 mile
<b>1 metre</b>	=	1.09 yards
<b>1 square metre</b>	=	10.76 square feet
<b>1 acre</b>	=	0.405 hectare
<b>1 hectare</b>	=	2.47 acres

## Executive Summary

The Government of Lao People's Democratic Republic (GoL) and IFAD agree to allocate IFAD's 1<sup>th</sup> country allocation to the funding of the '*Partnerships for Irrigation and Commercialisation of Smallholders Agriculture*(PICSA)' Project. This Project is designed as part of a regional programme, supported by Asian Development Bank (ADB), European Union (EU), the German Ministry for Economic Cooperation and Development (BMZ) and the Green Climate Fund (GCF). PICSA provides irrigation management and market linkage support to irrigation systems rehabilitated under the *Sustainable Rural Infrastructure and Watershed Management Sector Project* (SRIWMS, ADB/EU-funded); as well as to other irrigated areas and their environs. Both SRIWMS and PICSA benefit from conservation measures in the upper catchments supported through the *Lao PDR Emission Reductions Program through Improved Governance and Sustainable Forest Landscape Management* (ERP, BMZ/GCF-funded, to be implemented by GIZ). SRIWMS and PICSA converge on the development of irrigated high value crops, especially in the dry season; and complement each other's coverage in supporting improved nutritional practices.

Changing low-productive paddy-based farming systems to farming systems that support inclusive and sustained local socio-economic development requires a diverse approach, which simultaneously addresses issues of market access; system- and on-farm water management; production and post-harvest practices; and local governance of benefit flows and natural resource sustainability. This diverse approach involves areas adjacent to the irrigated lands in a process of agricultural intensification; while intensified production in and around the irrigated lands provides an alternative to unsustainable land use in higher, more remote and often forested areas. Making locally-specific tailor-made combinations of the diverse interventions is well-aligned to GoL's decentralisation policy (*Sam Sang*), which defines Provinces as strategic units; Districts as implementation units; and Villages as development units.

PICSA's immediate rationale is that higher profits from irrigation systems enable water user groups to finance operation, maintenance and minor system modifications – and thereby to sustain their system. The broader rationale is that intensified commercial smallholder agriculture in the farming system around irrigated wetlands constitutes a strong driver for local socio-economic development, improved nutritional intake and sustainable use of natural resources.

**Geographic targeting.** PICSA shares with SRIWMS a focus on fifteen irrigation schemes in 12 Districts in four Provinces to be rehabilitated by SRIWMS. PICSA supports the 84 - 96 villages associated with those fifteen schemes as well as other villages in the Districts with a potential for irrigation of commercial crops and intensification of agriculture. PICSA will also extend to similar villages in other districts; bringing the total number of Districts and Villages to be supported by PICSA to 19 and 353, respectively<sup>[1]</sup>. The broadening of the benefitted area supports effective use of the Project resources and is justified by (i) the attractiveness of larger production areas for market actors; and (ii) the enhanced reach-out to more and more diverse communities, including those with higher proportions of ethnic groups; and of extreme poor, poor or near poor households.

**Target group.** The estimated population of the 'PICSA villages' is approximately 215,000 (41,000 households at an approximate household size of 5.2). Country statistics suggest that approximately 15% are female-headed households. Only 25% of the population is young (age bracket 15 – 35 years), showing the effects of out-migration, whereas 40% belongs to ethnic groups. Pending more definite data from Project baseline studies, the socio-economic stratification in the Districts where the Project intervenes is estimated – using various sources – as follows:

- **5% extreme poor** – having limited resources in terms of land and labour and a high incidence of malnutrition. This group would benefit from the nutrition intervention and from employment opportunities created by intensified agricultural production and Agro-enterprise development;
- **30% poor** – this group has access to land, but remains below the international poverty line. They benefit directly and indirectly from agricultural intensification and agro-enterprise development, as well as from better nutrition awareness;
- **45% near poor** – this group remains below the lower middle income line. They have access to land but the households are highly vulnerable to shocks that can push them below the poverty line. The project intervention will help enhance the resilience of their livelihoods;
- **10% landed better-off** – this group is able to absorb shocks and continues to derive a part of their income from agriculture and they therefore stand to benefit from the Project, though not considered part of the intended target group;
- **10% landless better-off** - Having other sources of income and not benefiting directly from the PICSA intervention.

The target group of PICSA's efforts for intensified agricultural production and improved value chains (extreme poor, poor and near poor) comprises approximately 32,800 households (170,000 persons). Within this, emphasis will be given to youth and women. Activities in the field of nutrition focus on the nutrition at-risk category of ethnic groups, adolescent girls, young mothers and children. Targeting is guided by a targeting strategy, which builds on an active involvement of the village authorities. In order to ensure a balanced development between Villages and even Districts, PICSA resources will be earmarked; with adjustments made on an annual basis.

**Objectives.** The Goal to which PICSA aims to contribute is *enhanced livelihood and climate resiliencies and sustainability*<sup>[2]</sup> within the Project intervention area. The Project Implementation Manual includes a resilience index to gauge the project contribution to this goal. The Development Objective – to be attained by the beneficiary households using the outputs provided by the Project – is sustainable and inclusive local socio-economic development. The Development Objective is supported by tangible Project outcomes in the areas of intensified commercial smallholder agriculture, market linkages, and nutrition; and is underpinned by a strong drive for inclusiveness.

**Component 1 – Intensified agricultural development.** This component prepares and assists local authorities and farmer groups to optimise and sustain productive use of natural resources, by enabling, promoting and starting-up agricultural intensification in areas where conditions allow (esp. in and around irrigated and irrigable lands). This comprises the following outputs:

- Output 1.1 – Decentral implementation strengthened;
- Output 1.2 – Water User Groups (WUG) trained;
- Output 1.3 – Extension Services provided;
- Output 1.4 – Farmer Group Investment Facility established.

**Component 2 – Value chains developed.** This component promotes further commercialisation of smallholder agriculture by enabling, promoting and starting-up market linkages that benefit smallholder farmers. Outputs are:

- Output 2.1 – Multi-Stakeholder Platforms (MSPs) established;
- Output 2.2 – Agro-enterprise Investment Facility established;
- Output 2.3 – Access improved.

**Component 3. Improved nutritional practices.** This component promotes improved dietary intake among nutritionally vulnerable groups. Efforts to increase availability and accessibility of food with high nutrient value are accompanied by nutrition education. Nutrition interventions are carried out in Xayaboury and Luang Prabang Provinces, similar to EU-funded SRIWMSP activities in Xieng Khouang and Houaphan. Nutrition interventions are complementing nutrition activities of partners and are in support of the National Nutrition Strategy and Action Plan and produce the following outputs:

- Output 3.1 – School-based nutrition interventions established;
- Output 3.2 – Increased dietary intake and improved dietary quality for nutritionally vulnerable groups.

**Implementation Arrangements.** PICSA is planned to be implemented over a period of 6 years from the financial year of 2020 onwards. The Project will be closely aligned to the programme, management systems and structures established for SRIWMSP (ADB/EU-funded).

**Partner agencies.** PICSA's components and the outputs thereunder are delivered through decentral departments of the following organisations:

- **Intensified agricultural development:** Ministry of Agriculture and Forestry and especially its Departments of Irrigation, Planning and Finance and Agricultural Extension and Agro-Processing; as well as the Ministry of Natural Resources and Environment;
- **Value Chains developed:** Ministry of Industry and Commerce, Chamber of Industry and Commerce, especially its SME Support Centre;
- **Improved nutritional practices:** The Convergence agencies - Ministry of Agriculture and Forestry; Ministry of Health (MoH) and Ministry of Education and Sports (MoES), Lao Women Union (LWU) and Youth Union.

**Coordination.** The Financing Agreement will be signed between the Ministry of Finance (MoF) and IFAD. MAF will be the lead implementing agency. A National Steering Committee (NPSC) will provide strategic guidance to SRIWMSP and PICSA and reviews and approves Annual Work Plans and Budgets. Changes to PICSA's specific project areas will be reviewed by the NPSC prior to requesting IFAD no-objection. The Programme Governance Team (PGT) at the Department of Irrigation in MAF will provide oversight to SRIWMSP and PICSA, coordinate planning and investment across provinces; translate experiences from PICSA and SRIWMSP into lessons for national programmes and policies; and ensure adequate Financial Management. Similarly, at Provincial level, PICSA and SRIWMSP activities will be steered and managed by a Provincial Steering Committee (PSC) and a Provincial Project Implementation Team (PPIT). The steering and management structure is replicated at District level; with due involvement of village authorities.

The membership of steering committees and implementation teams at all three levels will be amplified to include representatives of the partner agencies described above. The District Steering Committee will meet quarterly, and the District Project Implementation Team shall meet monthly.

**Financial management.** The Ministry of Finance (MoF) shall maintain a Designated Account (DA) denominated in US dollars in the Bank of Lao PDR to receive the loan proceeds. The DA will be operated by MoF. The PGT shall maintain a Project Account (PA) in Lao Kip (LAK) in a commercial bank for the day-to-day project management operations. This account shall be funded and replenished as necessary from the resources held in the Designated Account. Requests for such transfers, including supporting documents, shall be forwarded from the PGT to MoF via the MAF Department of

Planning and Finance (DOPF), as per the established practice in GoL.

The Provincial Agriculture and Forestry Offices (PAFOs) and the District Agriculture and Forestry Offices (DAFOs) shall maintain institutional bank accounts in commercial banks for the day-to-day project management operations and specific investment activities of the PPIT and DPIT. The project accounts shall be funded and replenished on a monthly basis from resources held in the Designated Account, upon approval and request from the PGT, via DOPF.

Financial support for investments in agricultural intensification and agro-enterprise development shall be transferred directly into the accounts of the concerned groups and/or enterprises. To this end PGT shall, upon receiving full and correct documentation, request arrange for a direct transfer of the funds. This modality is practised already in parts of the Project area.

PICSA accounts will be entered into accounting software established for SRIWMSP at central level. This includes the entry of information on the transactions effectuated in the Districts, whereas transactions at Provincial level can be directly entered there. Support for sound financial management shall be rendered through IFAD supervision and support missions.

**Project Costs and (co-)financing.** PICSA requires an IFAD loan of USD 21.0 million equivalent in addition to a Government contribution of USD 2.1 million to cover salaries of Government staff as well as local taxes and duties. The beneficiary contribution – largely comprising their share in kind and cash in the matching grants – amounts to approximately USD 5.5 million; and the private sector contributes approximately USD 1.6 million. As PICSA delivers its outputs through the decentralised structure of GoL, project management costs could be kept within 12% of the overall budget.

The IFAD11 loan allocation of approximately USD 13.0 million is available in its entirety for PICSA. The required IFAD loan of USD 21.00 million assumes that discussions with GoL can conclude the closure of NSLCP-RFSP and the transfer unspent funds to PICSA. In the event this does not happen, the funding gap will be around USD 8 million.

Close to half of IFAD's financing is recognised as Climate Finance, largely allocated to methods and measures that support adaptation. This reflects the growing commitment in Laos and in the IFAD country programme to address the climate vulnerability of Laos.

GoL considers availing of start-up finance, which would cover start-up costs, such as baseline studies, PMU staff recruitment, revision of the Project Implementation Manual, establishment of monitoring and evaluation and fiduciary systems, as well as procurement of goods and services required for project start-up. This start-up cost is likely to be USD 500,000.

The co-funding of PICSA by the ADB/EU-financed Sustainable Rural Infrastructure Watershed Management Sector Project; and, GCF/BMZ-financed Emissions Reduction Programme is estimated at USD 30.2 million and USD 24.7 million, respectively, based on the proportion of their respective budgets allocated to PICSA identified Districts.

**Partnerships.** PICSA provides investment into a wider sector programme which is co-funded by ADB/EU (SRIWMSP) and BMZ/GCF (ERP). To ensure coherence and synergy, the three concerned partners commit (i) to fielding joint supervision / review missions; (ii) to engaging with other development partners investing in the target Provinces; and (iii) to regular coordination meetings. SRIWMSP and PICSA share one structure for steering and management.

During implementation partnership arrangements will be set-up with (i) the business development services under the Chambers of Commerce for link their capacity building programme to the small and medium enterprises benefiting from PICSA; and (ii) Save the Children for coordinating their activities with PICSA nutrition activities in Luang Prabang.

**Social Environment and Climate Assessment (SECAP)** The potential social and environmental impacts of PICSA are low to moderate (Category B). PICSA will not invest in infrastructure that requires acquisition of private lands and / or resettlement of project affected people. The climate risk category is moderate, as the Project includes a menu of adaptation and mitigation measures to face anticipated climate risks. Agricultural intensification investments with negative social and environmental impacts and without adequate mitigation are ineligible; while procedures to ensure and document free, prior and informed consent (FPIC) are integrated in the planning process.

**Policy development.** SRIWMSP and PICSA will generate substantial experience in development and management of irrigation systems. Through knowledge management, this experience offers GoL an opportunity to review its present enabling environment for participatory management of irrigation systems; including the related policy, legal and regulatory framework. The Project design allocates resources to national dialogue on irrigation policy.

## EFA Summary

**Table A – Household Incremental Income for Indicative Farm Models**

	<b>Household Incremental Income (LAK '000)</b>			
<b>Project Year</b>	<b>Rainfed Paddy</b>	<b>Rainfed Paddy and Upland</b>	<b>Irrigated Paddy</b>	<b>Irrigated Paddy and Upland</b>
PY1	-1,331	-5,132	-3,562	-9,539
PY2	458	1,762	-1,500	-1,037
PY3	1,274	5,496	2,612	5,956
PY4	1,798	2,424	6,233	6,072
PY5	2,492	13,041	7,746	18,102
PY6	2,372	15,789	8,072	20,977
PY7	2,372	14,659	8,072	19,847
PY8	2,072	20,289	8,072	25,477
PY9	2,492	23,991	7,301	29,052
PY10 +	2,372	21,459	8,072	26,647
<b>NPV @ 12% <sup>1</sup></b>	<b>12,590</b>	<b>99,930</b>	<b>39,580</b>	<b>121,860</b>

<sup>1</sup> 12% discount rate equivalent to weighted average interest rate of term deposits

**Table B - Project Cost and LogFrame Indicators**

<b>Total Project Costs (USD m): 30.07</b>	<b>IFAD loan: (USD m): 21.00</b>		
<b>Target population <sup>1</sup></b>	People: <b>213,200</b>	Households: <b>41,000</b>	
<b>Cost per targeted population</b>	<b>98 USD / person</b>	<b>512 USD / HH</b>	

<b>Primary beneficiaries</b> <sup>12</sup>	People: <b>170,560</b>	Households: <b>32,800</b>	Farmers Groups: <b>700</b> @ 20 HH per group
<b>Cost per primary beneficiary</b> <sup>13</sup>	<b>123 USD / person</b>	<b>640 USD / HH</b>	<b>Participation rate: 80%</b>
<b>Components / Outputs and Cost (USD M)</b>		<b>Selected Outputs and Indicators</b>	
<b>A. Intensified Agricultural Development</b>			
1.1 - Decentral implementation strengthened	2.03	19	# Districts trained
1.2 - Water User Groups trained	1.20	438	# Groups supported
1.3 - Extension services provided	0.97	28,000	# Persons trained
1.4 - Farmer Group Investment Facility established	12.36	2,450	# Rural producers' organisations supported
<b>B. Value Chain Developed</b>			
2.1 - Multi-Stakeholder Platforms established	1.42	314	# MSP meetings held
2.2 – Agro-Enterprise Invest. Facility established	2.80	255	# Ent. Accessing services
2.3 - Access improved	2.66	504	# km of new / rehabilitated roads managed and maintained by communities
<b>C. Improved Nutritional Practices</b>			
3.1 - School-based nutrition interventions established	0.45	160	# Schools preparing meals based on adequate nutritional value
3.2 - Increased dietary intake and improved dietary quality	0.73	1,700	# HH provided with targeted support to improve diets

<sup>11</sup> Total targeted population assumes population in 19 Districts impacted from better market linkages, better connectivity and enhanced water management. Primary beneficiaries are those accessing the Farmer Group Investment Facility. The Economic and Financial Analysis assesses the effectiveness and efficiency of these grants.

<sup>12</sup> Direct beneficiaries - assumes 5.2 persons per household.

<sup>13</sup> IFAD loan (USD 21 million) / Project target HHs (i.e. reached by project interventions)

**Table C – Financial Analysis Assumptions**

Parameters				
Selected Outputs	Av. Yield <sup>11</sup>	Price (LAK)	Selected Inputs	Price (LAK)
Irrigated Paddy	3.5 t/ha	2,000 / kg	Improved paddy seed	7,000 / kg
Ground nuts	1.2 t/ha	4,000 / kg	Manure	200 / kg
Garlic	2.0 t/ha	6,500 / kg	Urea	5,200 / kg
Maize	4.5 t/ha	1,500 / kg	Lime	2,000 / kg
Oranges	8 t/ ha	5,000 / kg	Hired Labour	45,000 / per-day

<sup>11</sup> Full development

**Table D – Household, Beneficiaries and Phasing**

	PY 1	PY 2	PY 3	PY 4	PY 5	PY 6
<b>Total Households</b>						
Incremental	1,643	2,824	3,594	4,056	3,029	2,054
Cumulative	1,643	4,467	8,061	12,117	15,146	<b>17,200</b>
<b>Households participating<sup>11</sup></b>						
Incremental	1,310	2,260	2,870	3,240	2,420	1,640
Cumulative	1,310	3,570	6,440	9,680	12,100	<b>13,740</b>
<b>Beneficiaries participating<sup>12</sup></b>						
Incremental	6,812	11,752	14,924	16,848	12,584	8,528
Cumulative	6,812	18,564	33,488	50,336	62,920	<b>71,448</b>

<sup>11</sup> 80% participation rate.

<sup>12</sup> Assuming 5.2 persons per household.

**Table E – Key Economic Analysis Assumptions**

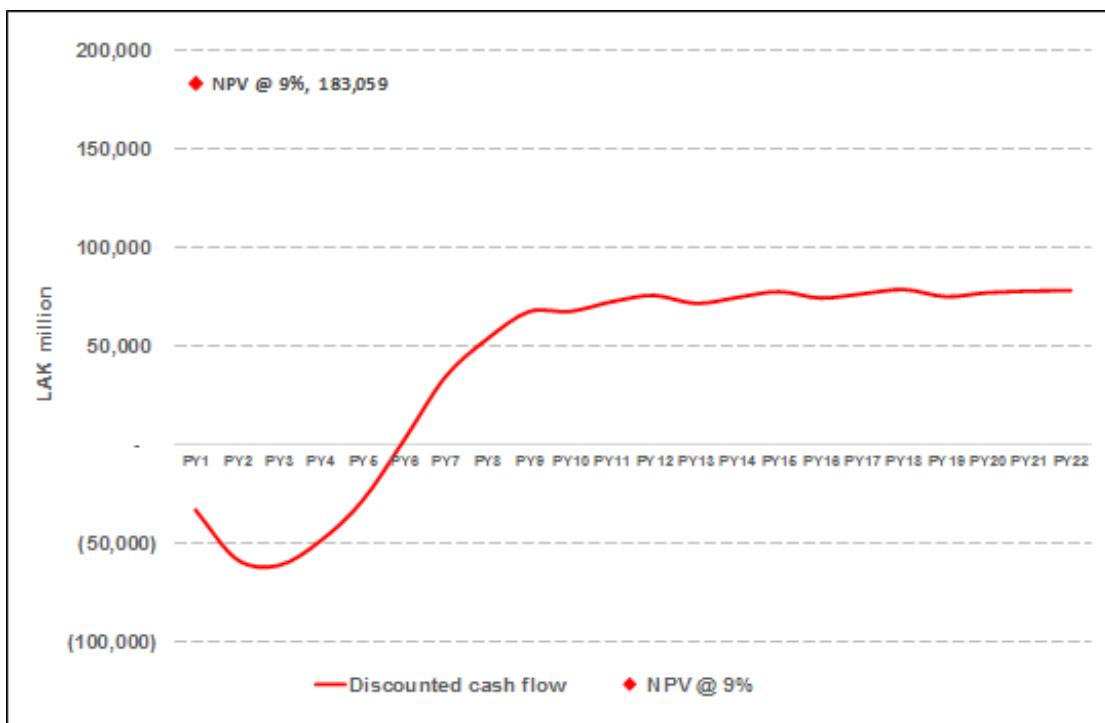
Parameter	Value	Remarks
Official exchange rate	8,564	USD 1 = LAK (March 2019) computed as an average of the exchange rate prevailing during design mission.
Shadow exchange rate factor	1.02	Project cost are estimated in USD and converted using the Costab software to economic terms using the SERF all financial costs are converted into economic costs through the elimination of subsidies, duties and taxes
Shadow wage rate factor (SWRF)	85%	Applied to unskilled wage rates to reflect the relative abundance of unskilled labour, though in some locations at sometimes of year this may undervalue unskilled labour due to the temporary migration of labour to other parts of Lao PDR or abroad.
Economic opportunity cost of capital	9%	Hurdle rate for the economic internal rate of return
Project life	25	Twenty 25 years has been assumed for the project life in line with the investment lifecycle.

**Table F - Project Economic Cash Flow (LAK million)**

Selected years	Incremental benefits	Invest	Recurrent	Farm investment <sup>11</sup>	Post AE Recurrent <sup>12</sup>	Post Rural Access <sup>13</sup>	Total incremental costs	Net incremental benefits
1	(10,385)	22,887	(33,272)	(10,385)	22,887	(33,272)	(10,385)	22,887
2	(19,622)	38,875	(58,497)	(19,622)	38,875	(58,497)	(19,622)	38,875
3	(22,999)	38,482	(61,481)	(22,999)	38,482	(61,481)	(22,999)	38,482
4	(23,196)	25,800	(48,996)	(23,196)	25,800	(48,996)	(23,196)	25,800
5	(5,032)	23,777	(28,809)	(5,032)	23,777	(28,809)	(5,032)	23,777
6	17,753	15,755	1,998	17,753	15,755	1,998	17,753	15,755
7	41,187	6,830	34,357	41,187	6,830	34,357	41,187	6,830
8	60,241	6,830	53,411	60,241	6,830	53,411	60,241	6,830

9	74,122	6,830	67,292	74,122	6,830	67,292	74,122	6,830
10...	74,268	6,830	67,438	74,268	6,830	67,438	74,268	6,830
15...	84,277	6,830	77,447	84,277	6,830	77,447	84,277	6,830
20...	83,797	6,830	76,967	83,797	6,830	76,967	83,797	6,830
25	85,506	6,830	78,676	85,506	6,830	78,676	85,506	6,830
						<b>ENPV @ 9% LAK million</b>	<b>183,059</b>	
						<b>ENPV @ 9% USD million</b>	<b>21.00</b>	
						<b>EIRR</b>	<b>16.4%</b>	
						<b>BCR</b>	<b>2.12</b>	
						<b>Switching value benefits</b>	<b>(53%)</b>	
						<b>Switching value costs</b>	<b>112%</b>	

Graph G – PICSA Incremental Net Cash Flow



Graph I –Switching Value Frontier<sup>[3]</sup>

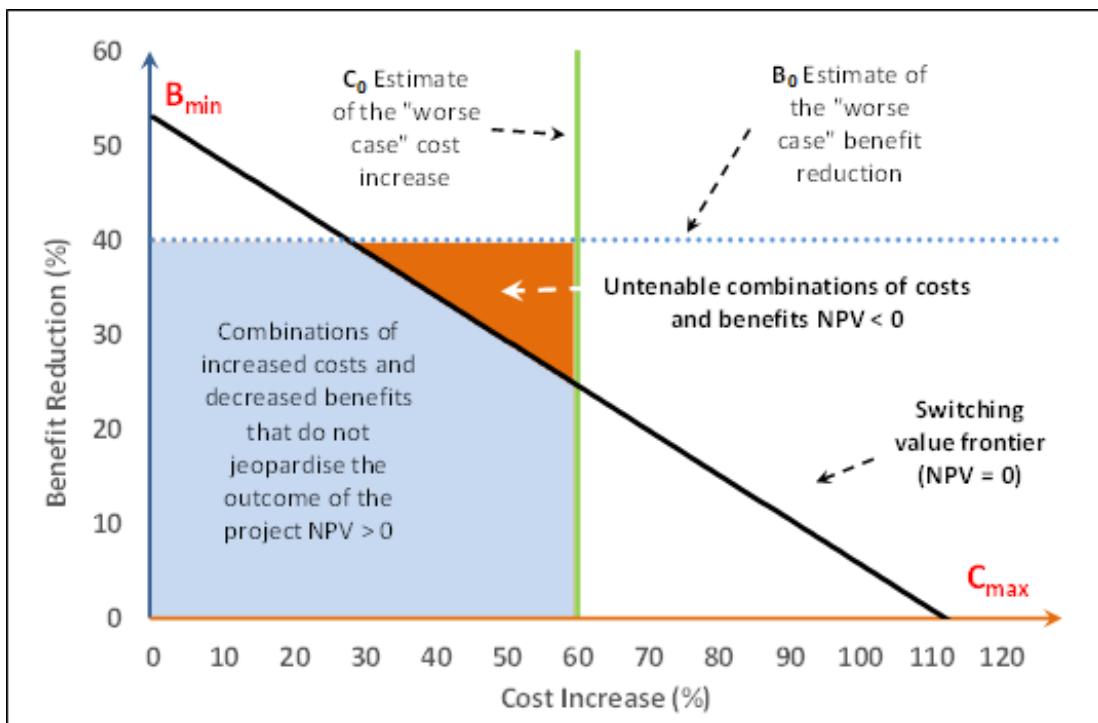


Table H – PICSA Sensitivity Analysis

Scenario			Link to Risk Matrix Issues	EIRR <sup>\text{1}</sup>	NPV (LAK m) <sup>\text{2}</sup>
Base Case				16.4%	183,060
$\Delta\%$ to Base Case					
Project Costs	Incr'l Benefits	Benefits delayed			
+ 10%			Increase in the cost of inputs.	15.5%	166,760
+ 20%				14.7%	150,460
	- 20%		Reduced producer prices / demand. Infrastructure investments are not directed to areas of highest production potential.	14.3%	113,840
	- 40%			11.4%	44,630

Scenario		Technical coordination by the implementing agencies and service providers is not responsive to the group level needs. <b>Link to Risk Matrix Issues</b>		EIRR <sup>11</sup>	NPV (LAK m) <sup>12</sup>
Base Case				16.4%	183,060
$\Delta\% \text{ to Base Case}$					
+ 10%	- 10%		Combinations of the above	14.5%	132,150
+ 20%	- 20%			12.5%	81,240
Base Case	Base Case	1 year	Ineffective inter-institutional cooperation & dialogue on development issues means financing is not disbursed in a timely manner to support field implementation.	15.1%	154,480
		2 years		13.9%	128,270
		3 years		12.9%	104,220
Base case	- 20%	1 year	Insufficient cohesion within farmer groups affect their success potential  Ineffective coordination between provinces, districts, villages and agro-enterprises undermining implementation progress  Financial service providers not interested to invest in Programme-targeted value chains  Borrowers divert loans for other purpose	12.2%	74,680
		2 years		11.2%	53,710
		3 years		10.4%	34,470
+ 20%	- 20%	2 years	Climate-change and disaster impacts. External shocks to macro economy.	10.5%	37,410
<b>Switching Values <sup>13</sup></b>					
<b>Benefits</b>		(53%)			
<b>Costs</b>		112%			

## 1. Context

### A. National context and rationale for IFAD involvement

#### a. National Context

1. Lao Peoples Democratic Republic (PDR) experienced sustained growth, reaching lower middle income country status in 2017. Agriculture, forestry and fisheries employ 72% of the labour force<sup>[4]</sup>, yet agriculture contributes only 19% to the GDP (2015) and its share is decreasing. An estimated 23% of the population lives in poverty<sup>[5]</sup>. Poverty and malnutrition are higher in rural areas and among ethnic groups.
2. Subsistence farming is only gradually replaced by market-oriented agricultural production. This includes emergence of medium- to large scale enterprises producing single commodities for markets in neighbouring countries. This is done on land concessions (a practice that is being phased-out) and on smallholder land through (seasonal) land lease for coordinated production, in which farmers are hired as agricultural hands. Laos' smallholder farmers face constraints in engaging in market-oriented production by *inter alia* poor infrastructure, imperfect markets, and limited access to technical support and financing.
3. Around 80 percent of the rural population is subsistence farmer, depending on rice-based agriculture, livestock, rainfed crops on hill sides and collection from the wild. While the forest ecosystem faces degradation due to multiple pressures (including smallholder agriculture); permanent agriculture (including paddy wetlands in lowlands and valley bottoms) continues at a low productivity<sup>[6]</sup>. Irrigation systems are basic, geared towards paddy production and are run with little effort towards their upkeep. Smallholder agriculture is constrained by unsustainable use of resources (degradation of forest cover, erosion of rainfed plots, vulnerable irrigation systems).
4. The 8th Five-Year National Socio-Economic Development Plan 2016–2020 (reflecting SDGs) aims to reduce poverty to 10% through continuous, inclusive and sustainable growth; supported by effective management and efficient utilisation of natural resources. The Agriculture Development Strategy 2016-2025 aims to: (i) promote clean and organic agriculture to meet domestic demands and export opportunities; (ii) promote production along with marketing and processing; (iii) improve and upgrade irrigation to robust systems with effective management; and (iv) upgrade existing agriculture extension and development centres.
5. The National Convergence Approach for Nutrition involves three Ministries (Agriculture and Forestry – MAF; Education and Sports – MoES; and Health – MoH) as well as the Lao Women Union (LWU) to undertake coordinated interventions at village level aimed at improved diets for infants and pregnant women in particular.
6. Laos' approach to decentralisation (Sam Sang) limits the role of central Ministry units to macro-level administration; and defines three pillars for regional and local governance: Provinces are strategic units; Districts are implementation units; and Villages are development units.
7. The Government of Lao PDR (GoL) pursues a climate smart development programme in its northern provinces. Within this programme, the ADB-funded Sustainable Rural Infrastructure and Watershed Management Sector Project (SRIWMSP) invests in rehabilitation of 15 irrigation schemes in Northern Laos<sup>[7]</sup>; with limited resources for irrigation management, development of market linkages, improved nutritional practices (partially EU co-funded) and catchment management. The German Ministry for Economic Cooperation and Development (BMZ) and the Green Climate Fund (GCF) intend to complement this investment by improving forest landscape management and governance, including better catchment management. GoL and IFAD have agreed to use IFAD's country allocation for a Project that adds value to SRIWMSP by building synergies between modernisation of irrigation systems and commercialisation and intensification of smallholder agriculture.

#### b. Special aspects relating to IFAD's corporate mainstreaming priorities

8. **Poverty.** Despite overall economic growth, poverty was estimated in 2012 at 23%<sup>[8]</sup>. Combining the 2012 expenditure and consumption survey with 2015 census data, the predicted poverty rate for 2015 is 25%<sup>[9]</sup>. Laos faces a widening poverty gap between urban and rural areas<sup>[10]</sup>. The predicted 2015 poverty rate for rural areas in the north is 30%, against 11% for urban centres<sup>[11]</sup>. Poverty correlates to ethnicity; whereas accessibility helps reduce poverty in areas of permanent agriculture<sup>[12]</sup>. Many households are clustered just above the poverty line: In 2012, 59% of the population was found below the lower middle income poverty line<sup>[13]</sup>, and this figure is higher for rural areas<sup>[14]</sup>. This large group just-out-of-poverty is vulnerable to shocks that can push them back into poverty. PICSA can support increased farm profits and increased employment opportunities for poor and near poor through agricultural intensification.
9. **Gender.** The Gender Development and Gender Inequality Indices positions Lao PDR at medium-low. Modest improvements have taken place, e.g. in education enrolment although completion of secondary education by girls and

by children from rural areas and ethnic groups lags. Within smallholder agriculture, women have less control over inputs and rural credit and are more excluded from formal sectors and social protection. PICSA can contribute to gender equality in agriculture, by supporting women's decision making role in producer groups and market interactions.

10. **Youth.** Over 70% of the population is below 35 years, while economically active youth (age bracket 15 – 34 years) comprises 38% of the population. Below-35 unemployment figures are well above the national average. Rural youth generally occupy low-skilled and poorly paid jobs. Migration from rural areas is frequent. Whereas the youth population (15–35 years) in the target provinces is 38%, it is only 27% for 'rural with road' areas<sup>[15]</sup>, indicating outmigration. PICSA intends to support on-farm and off-farm employment for and entrepreneurship among rural youth.
11. **Nutrition.** Chronic undernutrition rates are high, with under-five stunting at 33% and under-five underweight-rate at 9%, with higher incidence in the target provinces. Prevalence of malnutrition differs and correlates with the income status of a household, its ethnicity and its rural or urban location. Traditional beliefs, food taboos, and early marriages and subsequently early pregnancies are important determinants of malnutrition. Adolescent marriage and pregnancies impact adversely on education, livelihood opportunities and nutritional status of women and children.
12. **Climate and environment** Laos is susceptible to natural disasters such as flooding, landslides, upland erosion and drought. Human interventions (conversion of forests and wetlands, over-exploitation of forests and shifting cultivation) contribute to this. The effects are aggravated by climate change. The regional climate increasingly includes extremes, including heavy rainfall, dry spells and periods of extreme heat and cold (see section J: Climate Risk Classification). PICSA's climate risk vulnerability is moderate owing to its approach of intensifying agriculture in areas where land and water resources allow (thereby reducing pressures on vulnerable areas), while incorporating a menu of adaptation measures in its investments.
13. **IFAD overall and country-specific results framework.** PICSA contributes to IFAD's strategic objectives of increased production; increased market participation; greater resilience; and mainstreaming of priorities (gender & social inclusion, youth, nutrition, environment & climate). It contributes to the 2018-2024 COSOP: adoption of climate smart technology for production diversity (1.2); increased productivity (1.3); diverse, nutritious and safe diets (1.4); increased cash value of agricultural and livestock products from smallholders (2.2) and rural youth employment (2.3).

#### c. Rationale for IFAD involvement

14. Water resources are almost exclusively used for irrigation of lowland paddy. Improving and upgrading irrigation schemes to robust and effectively managed systems is an objective of the agricultural strategy, but system modernisation alone does not set smallholder farmers on a road to commercial agriculture. Changing low-productive paddy-based farming systems to farming systems that support inclusive and sustained local economic development requires a diverse approach, which addresses market access; irrigation system- and on-farm water management; intensification across all components of the farming system (rainfed crops, livestock); post-harvest practices; and governance of benefit flows and natural resources. Tailor-made combinations of diverse interventions requires decentralised implementation.
15. The Government of Lao PDR (GoL) and IFAD agree to allocate IFAD's 11<sup>th</sup> country allocation to a Project that pursues intensified agricultural production and commercialisation of smallholder agriculture. This Project is named *Partnerships for Irrigation and Commercialisation of Smallholder Agriculture*(PICSA). PICSA is part of a regional programme, co-funded by ADB/EU and BMZ/GCF. PICSA provides added value to investments in irrigation infrastructure and catchment management by building market linkages, enhancing commercialisation and intensification of (irrigated) agriculture and supporting improved nutritional practices.
16. **Rationale.** PICSA's narrow rationale is that higher profits from irrigation systems enable water user groups to finance operation, maintenance and minor system modifications – and thereby to sustain their system. The broader rationale is that intensified commercial smallholder agriculture in the farming systems centred on irrigated wetlands constitutes a strong driver for local socio-economic development, improved nutritional intake and sustainable use of natural resources.

#### B. Lessons learned

17. **Value chain finance.** Experience in Vietnam and replication in the Southern Laos Food and Nutrition Security and Market Linkages Programme (FNML) provide good experience in financing value chain development. Targeted use of start-up finance by farmer groups and enterprises helps enhance their capacity to access other sources of finance, including own contributions, micro-finance and banks.
18. **Market linkages.** IFAD projects in Laos (FNML, Community-based Food Security and Economic Opportunities Programme 'Soum Son Seun Jai' – SSSJ) demonstrate that poor rural households can successfully link to markets through pro-poor approaches (post-harvest practices, small-scale processing, road-side booths, and community

markets); private sector involvement; and contract arrangements.

19. **Mainstreaming nutrition.** PICSA will use experiences of the Agriculture for Nutrition Project (AFN, Global Agriculture and Food Security Programme (GAFSP)-funded and IFAD-supervised) to support the GoL convergence approach (health, food, education) by combining nutrition-sensitive agriculture and value chains with reach-out to nutrition-vulnerable locations and categories.
20. **Community-led development.** The direct financing of Village Development Funds (FNML, SSSJ and AFN) confirms that villages can lead planning and implementation of development initiatives. Empowerment and inclusive development reaches households that otherwise would not participate in and benefit from projects.
21. **Irrigation focus.** Irrigation infrastructure rehabilitation results in short-term effects on paddy production, which disappear as irrigation systems deteriorate due to lack of finance for maintenance and repair. Production of high value crops on irrigated croplands and along market demand offers higher returns than paddy. This requires reliable performance of infrastructure and sound management to organise irrigation, especially in the dry season.
22. **Financial management.** IFAD projects in Laos require considerable time to set-up financial management systems. This causes poor financial reporting and limits the performance of projects. Manual reporting impacts on accuracy, timeliness and efficiency of financial information. Off-the-shelf software has to be introduced from the start of a project, along with training to improve accounting and financial reporting.

## 2. Project Description

### C. Project objectives, geographic area of intervention and target groups

23. **Project objectives.** The Goal to which PICSA will contribute is *enhanced livelihood and climate resiliencies and sustainability*[\[16\]](#). A household resilience index will gauge the degree to which this is achieved. The Development Objective – to be attained by beneficiary households using Project outputs – is *sustainable and inclusive local economic development*. This is assessed by the status of households in terms of wealth and health. The Development Objective is supported by tangible Project outcomes in the areas of intensified smallholder agriculture, market linkages, and nutrition; and is underpinned by a strong drive for inclusiveness.
24. **Geographic area.** PICSA shares with SRISWMSP an initial focus on high value crops to be supported by 15 targeted irrigation schemes in 12 districts in 4 provinces. High value cropping provides a precondition for sustainable system maintenance. While malnutrition and poverty are less rampant in these 15 schemes than in remoter areas, the schemes serve as a springboard for linking services and markets to adjacent areas. PICSA addresses clusters of lowland paddy areas around and including these 15 schemes; and adjacent hill slopes with a potential for intensified rainfed crop and livestock production, which are farmed by the same households cultivating lowland paddy, and by other, often poorer households in the same communities. PICSA coordinates with communities through existing Village structures.
25. PICSA supports the 84 - 96 villages associated with the 15 SRIWMS schemes and other villages with a potential for irrigation of commercial crops and intensification of agriculture. PICSA will extend to similar villages in other districts; bringing the total number of Districts and Villages to be supported to 19 and 353, respectively[\[17\]](#). This includes remoter villages, where the population is largely composed of ethnic groups.
26. PICSA's specific geographical focus is on areas with the potential to support sustainable agricultural practices in term of climate resilience, market demand and nutrition[\[18\]](#). To realise this potential, PICSA banks on the greater mass of high value crop production in irrigated wetlands to attract market partners; and on the wider and more diverse production potential of the entire farming system of the communities accessing irrigated wetlands.
27. Interventions related to market linkages will bring opportunities beyond irrigated lowlands, and it follows that areas around and in proximity to the irrigated area, including adjacent slopes, stand to benefit from better market opportunities. The village perspective allows PICSA to support households that have less or no access to irrigated paddy lands and which are in many cases poorer. Active involvement of Village Authorities strengthens the transparency of market relations and contributes to inclusive targeting of services provided by the project. The project intervention is therefore focussed on villages with their diverse farming practices, including crop production in the lowland paddy fields as well as agricultural use of adjacent slopes.
28. **Beneficiaries and target group.** The population of the 'PICSA villages' stands at approximately 215,000 (41,000 households of an approximate size of 5.2). Country statistics suggest that approximately 15% are female-headed households. Only around 25% of the population is young (age bracket 15 – 35 years), showing effects of out-migration, whereas 40% belongs to ethnic groups. Pending more definite data from Project baseline studies, the socio-economic stratification in the Districts where the Project intervenes is estimated as follows. The actual

percentages per village will show a wide variability reflecting factors such as the ethnicity, the establishment date of the village; and its relative remoteness:

- **5% extreme poor** – having limited resources in terms of land and labour and a high incidence of malnutrition. This group would benefit from the nutrition intervention and from employment opportunities created by intensified agricultural production and agro-enterprise development;
  - **30% poor** – this group has access to land, but remains below the international poverty line. They benefit from agricultural intensification and agro-enterprise development, as well as from better nutrition awareness;
  - **45% near poor** – this group remains below the lower middle income line. They have access to land but the households are highly vulnerable to shocks that can push them below the poverty line. The project intervention will help enhance the resilience of their livelihoods;
  - **10% landed better-off** – this group is able to absorb shocks and continues to derive a part of its income from agriculture. They stand to benefit from the Project, though not considered part of the intended target group;
  - **10% landless better-off** - Having other sources of income and not benefiting directly from the PICSA intervention.
29. The target group for PICSA's efforts towards intensified agricultural production and improved value chains (extreme poor, poor and near poor) comprises around 32,800 households (170,000 persons). Activities in the field of nutrition would focus on the nutrition at-risk category of ethnic groups, adolescent girls, young mothers and children and on those villages within the 19 Districts with poor nutrition records.
30. **Inclusive development.** In addition to the above target group definition (extreme poor, poor and near poor), the Project defines women, youth, ethnic groups and undernourished people as special target categories. While agriculture and markets can spur economic growth; PICSA will support good governance to ensure that local economic development is inclusive and sustainable through implementation of the decentralization policy. Village Authorities and Districts help direct benefits to these categories and are main players in the implementation of the targeting strategy.
31. **Targeting strategy.** Each of the (often overlapping) target categories is targeted in a specific way:
- **Extreme poor** – Given the prevalence of malnutrition, this group is targeted especially by component 3 activities (integrated homestead food production, nutrition education), and by employment creation through intensified agricultural production and value chain activities. Village authorities will be tasked to stimulate the extreme poor's participation in such opportunities; with the Project monitoring the effectiveness thereof;
  - **Poor and near poor** – The main investment modality for developing profitable smallholder agriculture is formed by a financing facility for agricultural intensification. This facility is aimed at groups. Local authorities (Village and District) are asked to help identify and / or form groups of an inclusive nature. The beneficiary share of an investment will favour of participation of poorer households. An active role of local authorities in the development of market linkages increases the transparency of agreements and thereby reduces the risk for poor and near poor households;
  - **Women** – While women and men have a seemingly equal workload in agriculture, women have additional household chores to manage. Women's role in agriculture is significant, but often undervalued. The shift from subsistence to market-oriented agriculture can be particularly difficult for women in ethnic groups whose cultural roles, limited Lao language and technical skills, often leave them unprepared to engage with the market. The inclusion of women, including those from ethnic groups, in a proportional way in the farmer groups is an important criterion by which PICSA assesses whether local authorities are effective in ensuring inclusive development. Early use will be made of monitoring data to prevent a targeting bias. Successful targeting practices will be recognised and shared; and will be supported further by subsequent AWPB allocations;
  - **Youth** – A sizeable portion of youth in the age bracket 15 – 35 migrate out of the project area. Creation of competitive employment opportunities in the project area would reduce migration. The Project is designed to provide a return from labour above the prevailing market rate. The Agro-Enterprise Financing Facility provides the opportunity to target female and male youth with business start-up assistance in niche production (e.g. organic farming), trade and post-harvest processing;
  - **Ethnic groups** – Often whole villages are predominantly inhabitant by a specific ethnic group. PICSA will ensure through the AWPB exercise that resources are spread in a balanced way over the project villages. Monitoring will ensure that none of the selected villages are neglected. Access to irrigated lowland may for some 'ethnic' village be limited, which means that in these villages more emphasis be given to other forms of agricultural intensification. This could include small livestock, rainfed crops and investment in irrigation on sloping land;
  - **Under-nourished** – PICSA targets nutritional vulnerable people with a focus on women, children and adolescent girls by supporting nutrition teams at District and village-level. They will be involved in school-based interventions that focus on (irrigated) school gardens and ponds for cultivating nutrient-rich food for school meals; and that provide nutrition education to pupils, parents and teachers. PICSA will also invest in Integrated Homestead Food Production – especially targeted at extreme poor households – to help produce a balanced diet, with surplus sold locally. In promoting high value crops, PICSA will give preference to products that have a nutritional and a market value.
32. The above strategy forms the basis for the Project's targeting strategy and Gender Action Plan, which will be periodically updated based on the experience gained. The stand -alone manuals for the financing facilities include

provision that promote the participation of poor and near-poor – and the special target categories – in the activities supported by these facilities.

#### D. Components/outcomes and activities

33. **Component 1 – Intensified agricultural development.** This component prepares and assists local authorities and farmer groups to optimise and sustain productive use of natural resources, by enabling, promoting and initiating agricultural intensification in areas where conditions allow (esp. irrigated and irrigable lands). This helps reduce human stressors on lands vulnerable to the effects of climate change.
34. **Output 1.1 – Decentral implementation strengthened.** The Project builds capacity of district technical staff and village authorities to implement the decentralisation policy (Sam Sang). PICSA supported activities will be aligned to provincial and district development plans. Village Heads and Committee members and District staff will be trained on PICSA objectives and procedures. They are partners in project planning, implementation and monitoring. Training strengthens this partnership and their leadership in promoting agricultural intensification.
35. Training culminates in village assemblies on PICSA, conducted by the village authorities and a representative of the District. These assemblies will include: (i) explanation of PICSA support to the village in terms of WUG training, agricultural extension and farmer group investment; (ii) a wealth ranking exercise to identify the target group category by household and to confirm household capacity to contribute to farmer group investments (see output 1.4, this includes an analysis of labour availability for agricultural intensification); and sessions to identify opportunities and commodities for intensification.
36. The District and village authority training sessions will include compilation of basic village profiles, reflecting information on opportunities for high value crops, road connectivity, water management and existing agricultural producer group initiatives. The village assemblies will coincide with data collection for a baseline survey. Village information can therefore be checked for consistency across sources.
37. To support reach-out by the Districts and the performance of village authorities, PICSA will mobilise one local development expert per Province and one cluster facilitators per 7 villages as front-line staff to facilitate implementation of all project activities. They play a key role in mobilising the community and in assisting village authorities in planning, implementation and monitoring of PICSA activities.
38. **Output 1.2 – Water User Groups (WUG) trained.** This output enhances productivity and profitability of irrigated farming and the sustainability of irrigation operation and maintenance. WUG executive committees will be trained on operation, maintenance and system adaptation; on rules and on administration. Experts on O&M and irrigation agronomy help improve performance of irrigation systems and prepare WUGs for submitting proposals to the farmer group investment facility (output 1.4).
39. Formally, management of irrigation systems is vested in water user groups or associations[19]. PICSA will strengthen the capacity of such groups in order to ensure that they fulfil their mandate and intensify the use of their irrigation systems. Doing so includes: (i) establishing an elected WUG committee; (ii) preparation of internal rules and regulations; (iii) planning for production of high value crops; (iv) setting-up a basic accounting system to ensure recovery of O&M costs; and (v) agreeing on routines and responsibilities for operating and maintaining irrigation infrastructure.
40. The project will target 15 to 20 Water User Groups in each district. The training programme spans the full project period, starting with formal training in the first and second years and on-the-job coaching in subsequent years. Exchange visit between WUGs will provide the opportunity to learn from WUGs with advanced management capacity. Training will be provided by DAFO staff with assistance of project staff.
41. Irrigation agronomy is a key topic, to enhance irrigation of high value crops. The WUGs, or sub-sections thereof, will be stimulated to apply to the Farmer Group Investment Facility (output 1.4) for improvements to the distribution canal network and to on-farm water management. This includes minor irrigation infrastructure and equipment, such as secondary canal lining, storage reservoirs, Multi-Use water Systems, pressurised irrigation systems and (solar-powered) pumps. The project will not fund improvement or repairs of head works.
42. **Output 1.3 – Extension Service provided.** This output enhances productivity and profitability of agriculture, including irrigated farming. PICSA will support the Farmer Group and the WUGs to implement best agricultural practices in term of climate resilience, nutrition relevance and responsiveness to market demands. Knowledge on good agricultural practices and technology is needed to make farmers' investments successful. Support will be provided to producer groups in irrigated lowlands and on adjacent hill slopes with a potential for intensified rainfed / irrigated crop and livestock production. Existing technical support by Districts will be supplemented by (i) project-hired technicians and extension agents; (ii) private extension agents and service providers; (iii) partnership between farmer groups and private sector; and (iv) farmer-to-farmer exchanges. Extension aims to stimulate farmer groups to invest in agricultural intensification along market demand.

43. The village profiles (see output 1.1) provide a first set of ideas for agricultural innovation. The interaction with the private sector inter alia through Multi-Stakeholder Platforms under component 2 provides further guidance on potential innovation and extension priorities. A third source of inspiration emanates from structural exchange with national and international agricultural research organisations.
44. DAFO provides agricultural extension services and will be helped by PICSA to (i) increase coverage by providing resources and project staff; (ii) to stimulate extension efforts by third parties[20] and (iii) to make use of farmer-to-farmer extension methods. Part of the Farmer Group Financing Facility will be used to establish model farmers who will serve as hubs for local introduction of Sustainable Land Management / Climate Change Adaption (SLM/CCA) intensive production systems.
45. **Output 1.4 – Farmer Group Investment Facility** The Farmer Group Investment Facility (FGIF) enables groups of farmers to develop minor infrastructure for agricultural production and market access; and to invest in agricultural production. The facility bundles technical support for production techniques and basic economic investment management with financial support in keeping with recipients' financial capacity to start up. The facility supports poor and near poor household, women, young and model farmers to invest in profitable, productive farming systems based on Good Agricultural Practices (GAP) in order to introduce innovations and improved farming technology to farming communities.
46. In each district, a small Farmer Group Investment (FGI) team supports farmer groups in preparation, application, implementation and evaluation of investments and links them to relevant services, markets and sources of knowledge. The District FGI team consists of one staff member of DAFO assisted by an FGI Advisor hired by PICSA. Cluster Facilitators provide intensive coaching during the investment process.
47. During village assembly meetings, villagers are informed and asked to discuss existing and potential investment ideas and to nominate potential model farmers. The FGI team, the village authorities and interested farmers identify promising agricultural commodities for intensification and upscaling, leading to the establishment of Farmer Groups, with inclusive (heterogeneous) membership, an elected group leader and, where available, connected model farmer(s)[21]. There is no upper limit for number of participating households for infrastructure projects; for agricultural input packages, groups shall not have more than 20 members. The groups remain informal without expectation of sustained operations after completion of the investment. With the support from the FGI team, the Farmer Groups will meet with private business partners (see Output 2.1) to discuss business opportunities and potential constraints. This allows the Farmer Group to respond to opportunities and constraints in the proposal that they will submit to the Farmer Group Investment Facility. Women will be encouraged to participate and access the Facility and take a leading role in the Farmer Group.
48. The Farmer Group Investment Facility is open for applications from farmer groups and associated model farmers, consisting of resident households. Couples are represented jointly and equally by husband and wife. The facility supports:
  - **Construction and rehabilitation of small-scale productive and market rural infrastructure**(i.e small-scale irrigation infrastructure and equipment, collection points and farm access tracks) are supported up to a total investment of USD 500 per participating household. The proportion of the grant reflects the financial capacity of the group members. Poor households receive approximately 75% of the household's share of the total investment as grant; near poor households receive 50% grant. For better-off households the grant amounts to 25% of their share. Own labour, local material and the remaining share of the financial costs are provided by the group. This results in a set-up in which poor households contribute no cash, with cash contributions from near poor and better-off households capped at 25% and 50% respectively;
  - **Input packages for agricultural intensification:** Investment is supported up to a total financial investment amount of USD 500 per applicant household to promote best agricultural practices in term of climate resilience, market demand and nutrition. Beneficiary contribution follows the same principle as for infrastructure. Input packages could include small-scale mechanisation, tools, material for on-farm irrigation and greenhouses, seedlings, small livestock, seeds and start-up fertilisers. Excluded are large livestock, pesticides and larger machinery requiring special skills and maintenance.
  - **Agricultural Extension,** an amount up to USD 100 per applicant household is granted for capacity building of groups. Capacity building includes formal and informal training, hire of private sector technical expertise, study tours and travel for exchange of experiences.
  - **Grants to young and model farmers**for the establishment or improvement of productive farm enterprises; the maximal grant amount is USD 2,000 per applicant; to cover around 80% of the total investment.
49. The draft Project Implementation Manual – including a guideline for FGIF – charts the investment planning process; describes the review of applications (including the role of District Socio-Economic Development Committee – DSEDC); formulates standard grant agreements and defines post-investment evaluations. The effectiveness of these arrangements will be assessed during project implementation; and the arrangements may be revisited.
50. A total of 2,450 groups are projected to be supported. Depending on the actual demand, this could comprise of 350 groups benefiting from infrastructure; 700 from input packages; 700 from capacity building and another 700 model

farmers (who will present their model to a group formed around them). Group membership between input packages and capacity building is expected to largely overlap. A total of 17,200 separate households will be reached through the infrastructure and input groups.

51. **Component 2 – Value Chains developed.** The outcome of this component is improved sales by smallholder farmers. A representative of the Provincial Office for Industry and Commerce (POIC) assisted by an Agro-Enterprise Investment Advisor in each province is responsible for output 2.1 and 2.2. Market-led agriculture provides households a living from valley floors and lower slopes and reduces their dependency on unsustainable practices on steeper slopes and forested areas in the upper catchments.
52. **Output 2.1: Multi-Stakeholder Platforms** aim to improve value chain governance by enhancing coordination and strengthening relationships between actors in selected value chains. Stakeholder engagement and coordination includes identification of opportunities and challenges, development of mutual understanding, definition of roles and joint actions.
53. Market assessments for the 15 SRIWMSP schemes, consultations with local government (province and district) and results from village consultations inform an initial selection of two commodities (or commodity groups with similar biophysical features; e.g. vegetables, or dry season grain crops) in each district. This aims for the selection of value chains with a positive impact on the target group. Relevant commodities are ranked, based on (i) potential for competitiveness; (ii) potential for expansion (price or produced quantity); (iii) added value for the target group; (iv) potential for scaling; and (v) cross-cutting issues (nutrition, gender, vulnerable groups, environment, climate impact).
54. Once selection of commodities is done, PICSA will support the POIC to identify potential Business Partners (input supplier, buyer and financial institution) and to assess the potential volume of business transactions for each commodity. Then, Multi-Stakeholder Platforms (MSP) are convened at district level. An MSP consist of relevant stakeholders within a value chain, including farmer representatives, farmers' and private sector organisations (including identified business partners), government representatives, traders, processing enterprises, input suppliers, consumer representatives and financial institutions. Expected results of the platforms include improved networking and coordination for tangible results like higher producer prices, improved market transparency, trade contracts or product branding.
55. The Agro-Enterprise Investment team will, based on existing information and in-depth interviews with stakeholders, prepare a concise Value Chain Analysis (VCA) including mapping of value chain– actors, processes, the added value at each link, and an initial identification of challenges and opportunities. During the first plenary meeting of the MSP, focus is on presenting, verifying and discussing the VCA to develop and rank potential interventions and to identify applicants for the Agro-Enterprise Investment Facility.
56. **Output 2.2 Agro-Enterprise Investment Facility.** Expansion of the micro-, small- and medium-sized enterprise (MSMEs) sector is crucial for broad and sustainable sector growth[22]. Larger businesses are targeted by other interventions (including SRIWMSP), allowing PICSA to focus on MSMEs. MSMEs are typically focussed on input supply and sale of produce, with little added value. Due to their informal nature and limited business planning, they are presently ineligible for credit from banks. Building of their business capacity along with financial support would help them graduate to a higher level of performance.
57. The Agro-Enterprise Investment Facility (AIF) aims to strengthen commercial actors in relevant value chains, so they can enhance their own benefit and the benefits for related smallholder households. Investment subsidies are used to reduce business risk and to promote fair business practices. Small enterprises with small investment requirements can apply for full grant finance, while for larger investments, enterprises are required to contribute a progressive share either from own capital or from (formal) credit.
58. Information about the facility is disseminated widely, with focus on young (male and female) rural entrepreneurs (e.g. village assemblies, agricultural colleges, Chambers of Commerce, Women's Union's and Lao Youth's members). Potential applicant for AIF are identified or confirmed during MSP events. A specific target group are farmers producing inputs (e.g. seed multiplication, seedlings, farm animal offspring). Female and young applicants have a preferential status.
59. A separate draft guideline for the Agro-Enterprise Investment Facility is available, describing procedures for screening, capacity building, procurement and PICSA subsidies, applicant selection and management of funds.
60. PICSA project will work closely with SME Support Centres (SSC) established by the Lao National Chamber of Commerce and Industry (LNCCI)[23]. These centres offer Business Development Support services, and training and coaching for business planning and financial management. Trainings are tailored to the AIF applicants, and focus particularly on the AIF application and its auxiliary documents. Participation is obligatory for businesses above a certain size and is fully financed by PICSA.
61. **Output 2.3 – Improved access.** This output aims to provide last mile connectivity beyond the road investments provided by SRIWMSP. PICSA contributes to improved access conditions for smallholder farmers by investing in village-to-village access tracks. Construction of village-to-farm access (less than 4m wide) tracks is facilitated by the

Farmer Group Investment Facility (output 1.4), while this output aims to ensure or restore connectivity between the existing roads network and remote villages (and thus enhance connectivity to markets). PICSA will not allocate funds to roads requiring involuntary resettlement.

62. Development of commercial agriculture is constrained by access conditions between villages. PICSA will improve access conditions by upgrading existing alignments between villages. These village-to-village access tracks fall in the category of specific roads in the national road classification[24]. PICSA supports earthen roads of 4-5 meters wide to allow passage of light trucks and cars. Procurement will be through a local bidding process at district level. The average unit cost is estimated at USD 5,000 per km including structures and drainage. A total of around 500km of village to village tracks will be rehabilitated.
63. Village authorities will be helped to regulate use of the road (type of vehicles allowed, access restrictions under wet conditions, prevention of encroachment on road shoulder, maintenance). Village road maintenance committees under supervision by village authorities will be established and trained to ensure maintenance. A maintenance plan will be prepared with assistance from a district technician.
64. **Component 3. Improved nutritional practices.** Interventions under component 3 address quantity and quality of diets along the lifecycle and through a gender lens. Interventions to increase availability and accessibility of food with a high nutrient value are accompanied by nutrition education. The outcome is improved dietary intake among nutritionally vulnerable groups. Nutrition interventions are carried out in schools and villages selected from the Project Districts in Xayaboury and Luang Prabang Province. Nutrition activities in the other two Provinces are supported by SRIWMSP.
65. **Output 3.1:School-based nutrition interventions established.** Schools are the centre for nutrition promotion activities, which will extend to associated villages and households. In lower secondary and primary schools, gardens, chicken and if feasible ponds for fish and frogs will be established or supported, with involvement of village authorities and the Parent-Teacher-Association (or similar committee). School gardens produce ingredients for school meals, which will be prepared by members of the Lao Women Union. Food production in the school garden provides a learning opportunity parents, pupils and teachers, reflecting the 'from food to fork'-philosophy. Education for pupils will be age-specified. Nutrition education will include water, sanitation and hygiene. Save the Children, which runs a nutrition programme in Luang Prabang, will be a partner in the school-based nutrition intervention. Funds are available for establishment of garden, cooking utensils, agricultural inputs and for water supply to the gardens (with the potential benefit of providing drinking water to schools). Existing teaching aids will be adapted – if necessary – and made available. Other partnerships with organisations active in the Project area can be established to support PICSA interventions by the District convergence agencies.
66. The school-based nutrition intervention reflects the essence of the convergence approach: A combined intervention comprising elements of education (tailored and practical courses), agriculture (high nutrient-value crops) and health (e.g. balanced meals and safe drinking water). School-based nutrition interventions include nutrition education which looks beyond food at socio-cultural issues, incl. early pregnancies.
67. **Output 3.2: Increased dietary intake and improved dietary quality for nutritionally vulnerable groups.** Women, adolescent girls and children are nutritionally vulnerable and need special attention to enhance their dietary intake and quality. Vulnerable households will be assisted to produce food with high nutrient value for home consumption and as income generation activity. Nutrition education sessions are addressed to the entire household and cover nutrient requirement, healthy diets, household economy, food taboos, intra-family food distribution, women's workload, forced marriages, early pregnancies, and water, sanitation & hygiene.
68. In order to understand constraints for healthy diets better, a Knowledge, Attitude, Practice (KAP) assessment will be conducted with special emphasis on food beliefs and taboos.
69. Healthy diets are not only determined by nutrition knowledge but also by food availability and accessibility and therefore, this output helps poorer households to produce more nutritious food for own consumption. Integrated Homestead Food Production (IHFP) combines plant-based food production with production of small livestock, fish and frogs on homesteads and adjacent land, aiming to produce high nutrient value food. This provides ingredients for healthy diets at household level as well as an occasional surplus to be sold-off locally.
70. A majority of schools receives financial support for school meals. This provides parents who are practicing agriculture the opportunity to sell their products to the schools. PICSA supports this linkage between smallholder farmers and schools.

## E. Theory of Change

71. The almost exclusive use of the project area's irrigation potential for production of paddy does not provide enough returns to motivate smallholders to improve irrigation management. It neither drives local economic development nor helps improve nutritional intake. PICSA aims to ameliorate this situation.
72. Annex 2 visualises the intervention logic of PICSA. Against a scenario of stagnation in rural areas – caused by poor market integration, unsustainable resource usage and adverse nutritional practices – the Project supports better governance to boost market linkages, enhance irrigated production, pursue sustainable natural resources management and improve nutrition practices. Investments in intensified agricultural production, improved value chains and better nutritional practices supported by continued governance supports market-led smallholder production of (irrigated) high value crops in a manner that is both inclusive and nutrition-sensitive. Results from these investments lead to better incomes and a better health status, which form cornerstones for resilient and sustainable livelihoods in the Project area.
73. Better governance is key to this approach. Agricultural is the main driver of development; while social inclusion of poor, women, youth and ethnic groups together with improved nutritional practices are key to the quality of development. Governance at local level, provided by concerted efforts of the District administration, Village Authorities, farmer groups (including WUGs) and value chain partners, ensures the quality of development. PICSA support to better governance of resources, market conditions and targeting helps build an enabling environment for intensifying production, improving value chains and better nutrition practices.
74. The visualised Theory of Change (annex 2) must be read in conjunction with the Logical Framework (Annex 1). The assumptions underpinning the development pathways in the Theory of Change are reflected in the assumptions in the LogFrame.

## F. Alignment, ownership and partnerships

75. **Alignment.** The PICSA design is aligned to relevant national policies:
  - **Gender.** GoL has made promotion of gender equality a national priority. PICSA will promote gender equality through all its interventions but especially in component 3 considering women and adolescent girls particular vulnerability with respect to nutrition;
  - **Youth.** GoL formulated a National Adolescent and Youth Policy 2019-2030 (NAYP). Key areas are health (incl. sexual and reproductive health), education (incl. technical and vocational training), employment, entrepreneurship, livelihood and participation. PICSA's Financing Facilities support employment and help provide an alternative to migration.
  - **Climate.** Lao PDR was the first ASEAN country to ratify the Paris Agreement by agreeing on an Intended Nationally Determined Contribution. GoL has identified a number of actions which it intends to undertake, subject to the provision of international support. PICSA's support to agriculture helps pursue climate resilience in farming systems and agricultural infrastructure and introduces appropriate farm technologies;
  - **Nutrition.** GoL pursues concerted efforts across the key sectors of health, agriculture and education. PICSA supports implementation of this convergence approach by addressing production of crops with high nutrient value, production of animal protein, income generating activities, nutrition education, and school gardens.
  - **Irrigation.** The Law on Irrigation pursues Irrigation Management Transfer (IMT). PICSA supports performance of water users' groups by building capacity to operate, maintain and improve their irrigation systems.
76. **SDG and IFAD.** PICSA contributes to the Sustainable Development Goals (SDG), especially SDG 1 (*end poverty*), SDG 2 (*zero hunger*), SDG 5 (*gender equality*), and SDG 8 (*good jobs and economic growth*). The PICSA design reflects IFAD's three strategic objectives: (i) increase poor rural people's productive capacities (ii) increase poor rural people's benefits from market participation; and (iii) strengthen environmental sustainability and climate resilience of poor rural people's economic activities. PICSA reflects IFAD's mainstreaming agenda covering gender, nutrition, youth, indigenous people and climate change resilience.
77. **Ownership.** PICSA is implemented through GoL's decentral structure and puts the decentralisation policy (Sam Sang) into action. Measures have been included in the design to prevent overburdening the Districts with administrative procedure. All applications to the Farmer Group Investment Facility and the Agro-Enterprise Investment Facility are demand-driven; so that ownership and responsibility for the investment is vested from the start in its beneficiaries.
78. **Partnerships.** PICSA provides irrigation management and market linkage support to irrigation systems rehabilitated under the *Sustainable Rural Infrastructure and Watershed Management Sector Project* (SRIWMS, ADB/EU-funded); as well as to other irrigated areas and their environs. Both SRIWMS and PICSA benefit from conservation measures in the upper catchments supported through the *Lao PDR Emission Reductions Program through Improved Governance and Sustainable Forest Landscape Management Project* (ERP; BMZ/GCF-funded, implemented by GIZ). SRIWMS and PICSA converge on the development of irrigated high value crops, especially in the dry season. The

combined programme aims to increase farm incomes, market produce supply and variety, watershed conservation and nutrition in the northern provinces of Houaphan, Xieng Khouang, Luang Prabang and Xayaboury.

79. The three project designs are complementary (ERP: watershed conservation – SRIWMSP: irrigation infrastructure – PICSA: irrigation management) and include synergistic approaches to market linkages (ERP: rainfed + non timber forest products – SRIWMSP: international value chains – PICSA: local value chains). SRIWMSP and PICSA share the same project organisational structure, whereas ERP and PICSA engage in agricultural development in complementing Districts. Donor agencies have regular coordination meetings and have committed to combined supervision missions.
80. **Other activities.** Alignment with other organisations and interventions operating in the project areas is necessary. The Agricultural Competitiveness Project (ACP) financed by World Bank has value chain activities (financing facility for large agro-enterprises) in three PICSA target districts of Xayaboury (Xayaboury, Paklai and Phiang) and forms a point in case. In other districts and target villages coordination needs to take place with other initiatives and projects as well, esp. smaller NGO operations with similar objectives. This is an opportunity for enhancing coverage and synergy and requires that the planning and coordination of PICSA is closely associated with the general Socio-Economic Development Planning in the Districts.

## G. Costs, benefits and financing

### a. Project costs

81. The main assumptions underpinning the project costs and its financing plan are presented in Annex 3. The total cost for the Project is estimated at USD 30.13 million (LAK 269.24 million) including contingencies. The total base costs are USD 27.86 million (LAK 238.59 million). Physical and price contingencies account for USD 0.72 million and USD 1.55 million respectively (3 per cent and 6 per cent of the total base costs). Baseline investment costs are estimated at USD 22.00 million representing 79 per cent of baseline cost.
82. The breakdown of the costs by component/outputs and financiers is shown in Table 1. The financing plan is presented in the context of the partner projects SRIWMSP (ADB/EU) and ERP (BMZ/GCF). The amounts for these two projects are based on the proportion of their respective budgets allocated to PICSA identified Districts. The breakdown of the costs by expenditure category and financiers is shown in Table 2. Total project costs by component and by year are shown in Table 3.
83. Close to half of IFAD's contribution to the Project is recognised as Climate-Change Finance, largely for being allocated to measures and methods that pursue adaptation. This reflects the growing commitment in Laos and in the IFAD country programme to address Laos' climate vulnerability.

**Table 1: Project costs by component, output and financier (USD'000)**

	IFAD Loan Amount	IFAD %	TDF Amount	TDF %	Government Amount	Government %	Beneficiaries Amount	Beneficiaries %	Private Sector Amount	Private Sector %	Total Amount	Total %	For. Exch. (Ord.)	Outlay & Taxes	ADB / EU	GCF - GIZ
<b>IFAD Partnership for Irrigation and Commercial Smallholder Agriculture</b>																
A. Irrigated Agricultural Development																
Output 1-1: Irrigated agriculture authorities established	1,102	22.6	948	20.8	420	14.6	-	-	-	-	2,220	7.6	60	1,763	4.22	-
Output 1-2: Irrigated land developed	788	16.6	621	14.6	152	-	-	-	-	-	1,361	4.8	44	1,141	2.82	-
Output 1-3: Irrigation system established	266	5.6	240	5.4	120	4.4	-	-	-	-	526	1.9	161	378	1.02	-
Output 1-4: Farmer Group Investment Facility established	576	12.1	517	11.8	26	0.9	2,210	41.7	-	-	2,993	43.7	66	12,103	3.6	-
Subtotal Irrigated Agriculture Development	3,736	74.1	3,266	70.2	712	25.2	2,210	25.8	-	-	7,209	29.2	222	14,270	3.74	-
B. Value Chain Development																
Output 2-1: Irrigated Land Platform established	1,000	22.0	156	3.9	88	2.2	-	-	-	-	1,206	5.0	347	1,079	2.6	-
Output 2-2: Agro-Chains Management Facility established	337	7.8	261	27.0	26	1.9	-	-	-	-	3,024	32.4	2,966	-	2,966	-
Output 2-3: Local Agri-Value Chains Improved	1,111	26.2	1,071	22.8	212	10.0	-	-	-	-	3,161	10.2	202	2,924	2.16	-
Subtotal Value Chain Developed	3,248	67.2	1,488	39.1	455	9.2	-	-	-	-	7,209	25.2	621	2,924	2.16	-
C. Improved Nutrition Practices																
Output 3-1: School-based nutrition intervention established	266	24.0	154	22.2	26	11.7	-	-	-	-	478	1.9	66	224	2.2	-
Output 3-2: Increased clean, safe and improved dietary quality	350	37.0	158	20.7	88	10.1	-	-	-	-	478	2.7	266	201	2.2	-
Subtotal Improved Nutrition Practices	616	61.0	312	22.9	114	11.8	-	-	-	-	956	4.6	92	425	2.2	-
D. Project Management																
Total PICSA Costs	12,982	42.0	8,025	29.8	2,742	11.7	2,210	16.2	1,361	3.1	32,325	10.0	2,211	12,920	3.74	-
<b>ADB Sustainable Rural Infrastructure Watershed Management Sector Project</b>																
Output 1: Watershed high-value agroforestry production increased	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,428	-
Output 2: Watershed soil health improved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,428	-
Output 3: Conservation agriculture improved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,71	-
Output 4: Carbon sequestration and soil health improved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,050	-
Project management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,200	-
Total ADB SRIWMSP Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,400	-
<b>GCF Lao PDR Climate Change Reduction Programme RECD+</b>																
Output 1: Creating an enabling environment for RECD+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,900	-
Output 2: Implementation of RECD+ on rice agroforestry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,475	-
Output 3: Forest landscape management and forest and landscape restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,225	-
Output 4: Project management, coordination, monitoring and reporting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	-
Total GCF RECD+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,625	-

**Table 2: Project costs by expenditure category and financier (USD'000)**

	IFAD Loan		TDR		Government		Beneficiaries		Private sector		Total		Fair Value	(Excl. Taxes)	Duties & Taxes	ADD / CU	GCF - GRP
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Excl. Taxes				
<b>IFAD: Partnership for Irrigation and Commercial Smallholder Agriculture</b>																	
I. Investment Costs																	
A. Works	1,493	22.8	1,031	34.2	802	100	-	-	-	-	2,015	100	802	2,412	802	-	-
B. Goods, Services & Inputs	98	2.3	174	37.7	30	100	-	-	-	-	302	10	60	211	30	-	-
C. Equipment and Materials	1,030	21.7	639	26.1	624	32.8	-	-	-	-	2,212	8.3	1,239	239	624	-	-
D. Consultancies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. Technical Assistance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
International Technical Assistance	130	62.0	60	26.0	0	-	-	-	-	-	208	0.7	208	-	-	-	-
National Technical Assistance	639	22.8	211	37.7	169	100	-	-	-	-	1,059	4.8	-	1,246	169	-	-
Subs of Technical Assistance	293	26.8	280	34.7	169	68	-	-	-	-	1,702	2.6	208	1,246	169	-	-
F. Training and Workshops	1,406	22.8	692	34.2	222	100	-	-	-	-	2,221	8.3	-	2,299	222	-	-
G. Grants and Subsidies	4,011	22.8	6,712	34.2	29	0.6	2,210	34.8	1,239	8.3	12,635	22.6	-	12,635	-	-	-
Total Investment Costs	9,195	22.8	8,032	34.2	1,713	42	2,210	34.8	1,239	8.3	25,900	22.6	1,239	25,418	1,239	-	-
II. Recurrent Costs																	
A. Salaries and Allowances	2,422	66.0	-	-	108	4.0	-	-	-	-	2,740	9.0	-	2,740	-	-	-
B. Operating costs	1,140	7.1	-	-	426	26.9	-	-	-	-	1,615	2.2	87	1,571	161	-	-
Total Recurrent Costs	3,562	67.1	-	-	534	27.8	-	-	-	-	4,355	11.2	87	4,152	161	-	-
Total PROJECT COSTS	12,757	45.0	8,032	34.9	2,122	7.1	2,210	34.8	1,239	8.3	30,250	100.0	2,011	26,220	1,719	-	-
ADD: Sustainable Rural Infrastructure Watershed Management Sector Project Total ADD GRM&P Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,000	-
GCF Lao PDR Emission x Reduction Programme RDCD+ Total GCF ERP RDCD+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,047

**Table 3: Project costs by component and year (USD'000)**

(USD'000)	Total Including Contingency												Total		
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031			
	USD'000	%	USD'000	%	USD'000	%	USD'000	%	USD'000	%	USD'000	%	USD'000	%	USD'000
A. Intensified Agricultural Development															
Output 1.1 - Climate Smart and village authorities trained	916	4.1%	487	20%	412	15%	420	19%	24	1%	28	1%	2,253		
Output 1.2 - Water User Groups trained	377	2.1%	275	21%	195	15%	181	17%	195	15%	216	16%	1,245		
Output 1.3 - Extension services provided to	320	3.0%	217	20%	207	20%	115	11%	55	5%	35	3%	1,050		
Output 1.4 - Farmer Group Investment Facility established /b	650	5%	2,231	17%	2,657	20%	2,710	21%	2,765	21%	2,719	16%	13,213		
Subtotal I Intensified Agricultural Development	2,192	12%	2,234	12%	2,472	12%	2,425	12%	2,029	11%	2,294	12%	17,889		
B. Value Chains Developed															
Output 2.1 - Multi-Sectoral Platform established	427	2.6%	224	15%	225	15%	211	14%	216	14%	220	14%	1,526		
Output 2.2 - Agro-Geariance Investment Facility established	53	2%	513	17%	572	20%	559	20%	611	21%	-	0%	2,985		
Output 2.3 - Access Improved	75	2%	1,560	49%	1,522	45%	-	0%	-	0%	-	0%	2,154		
Subtotal II Value Chains Developed	555	6%	2,296	20%	2,625	24%	1,101	14%	627	11%	220	3%	7,655		
C. Improved Nutritional Intake															
Output 3.1 - School-based nutrition interventions established	136	26%	193	40%	79	17%	65	14%	3	1%	3	1%	475		
Output 3.2 - Increased dietary intake and improved dietary quality/c	121	16%	143	15%	135	15%	143	17%	122	15%	124	15%	512		
Subtotal III Improved Nutritional Intake	257	21%	336	26%	234	15%	205	16%	125	10%	127	10%	1,027		
D. Project Management															
Total IFAD/CUSIS	4,270	14%	6,076	21%	6,759	22%	5,203	17%	4,419	15%	3,121	10%	30,250		

## b. Project financing/co-financing strategy and plan

- The IFAD loan will finance USD 21.03 million or 70% of total project costs [25]. This includes: USD 11.64 million or 65% of Component 1 for which the total cost is USD 17.86 million; USD 5.63 million or 74% of Component 2 for which the total cost is USD 7.65 million; and, USD 1.14 million or 88% of Component 3 for which the total cost is USD 1.30 million. IFAD contributes USD 2.62 million (76%) to the Project Management of USD 3.44 million.
- The loan will be provided under blend terms that for SDR set the interest on the amount outstanding at 1.25% per annum, with an additional service charge of 0.75%. The maturity period is maximum twenty-five years, including a grace period of five years; starting from the date of approval by the IFAD Executive Board. These conditions will be updated prior to the loan negotiations. Service charge and interest rates will be adjusted should GoL borrow in another currency than SDR.
- GoL considers availing of start-up finance through a specific request describing the intended use of funds, such as baseline studies, PMU staff recruitment, revision of the Project Implementation Manual, establishment of monitoring and evaluation and fiduciary systems, as well as procurement of goods and services required for project start-up.
- The beneficiaries will finance USD 5.51 million or 18.2 per cent of the total project costs in the form of co-financing of the Farmer Group Investment Facility under Output 1.4. The private sector will finance USD 1.56 million or 5.1 per cent of the total project costs in the form of co-financing of the Agro-Enterprise Investment Facility under Output 2.2.
- The Government will finance USD 2.16 million, of which USD 1.72 million is in the form of taxes and duties. The remainder of the Governments obligation is in the form of the salary of the Vientiane Programme Governance Team's Project Director, as well as the four Provincial Project Directors and office accommodation.

## c. Disbursement

- PICSA's withdrawal of funds and its use of loan proceeds is governed by IFAD's Loan Disbursement Handbook (LDH). Procedures for disbursement, financial reporting and maintenance of appropriate project records will be described a Letter to the Borrower (LtB), once the Financing Agreement between IFAD and the Government of Lao PDR enters into force. Subsequently, GoL will review and submit the Financial Management Manual (drafted April 2019) for IFAD's 'no objection', as part of fulfilling the conditions for the first withdrawal of a loan advance.
- Flow of Funds.** The Ministry of Finance (MoF) maintains and operates a Designated Account (DA) denominated in US dollars in the Bank of Lao PDR to receive the loan proceeds. The DA is administered using imprest account arrangements, in which an initial amount of loan is advanced and replenished periodically based on justified

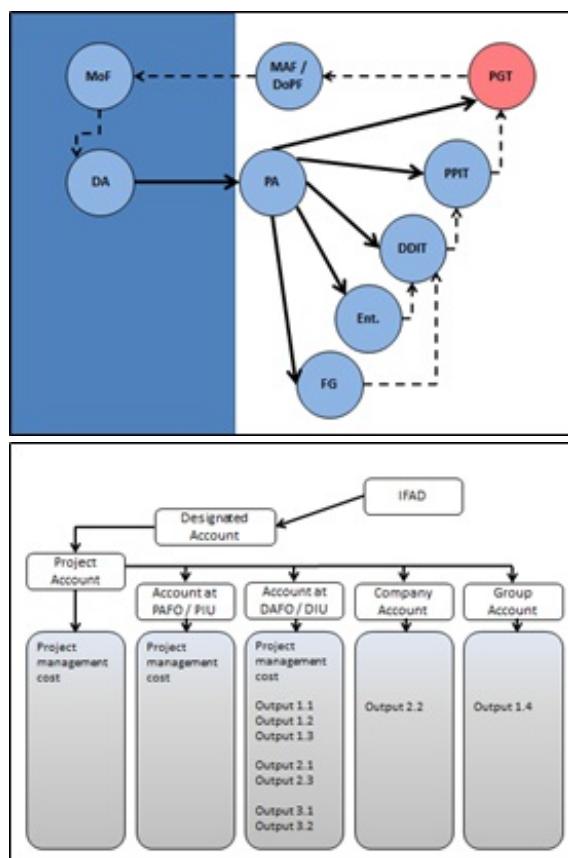
expenditures. The maximum advance provided by IFAD to the DA will be defined as the Authorised Allocation (AA) in the LtB and is foreseen to amount to USD 2 million. This may be amended by IFAD in the course of Project implementation.

91. The PGT maintains a Project Account (PA) in Lao Kip (LAK) in a commercial bank for day-to-day project operations. The PA shall be funded and replenished as necessary from the Designated Account. Requests for transfers, including supporting documents, shall be forwarded from the PGT to MoF via the MAF Department of Planning and Finance (DOPF), as per the standard practice in GoL.
92. The Provincial Agriculture and Forestry Offices (PAFOs) and District Agriculture and Forestry Offices (DAFOs) maintain project sub-accounts in commercial banks for day-to-day project management and specified activities by the PPITs and DPITs. The project sub-accounts are funded and replenished on a monthly basis from resources held in the Project Account, upon approval and a request from PPIT to PGT, via DOPF. Transfers to the Project sub-accounts are treated as Advances (Accounts Receivable) and registered in the accounting software. The advance will remain within predefined thresholds (Table 4), which may be amended during Project implementation.

Table 4: Advance threshold for project accounts (USD)

Project unit	Number of units / project accounts	Advance threshold (USD)
PGT	1	300,000
PPIT	4	3,000
DPIT	19	10,000

93. For the investment facilities, upon receiving complete and sufficient documentation from the DPITs, PGT requests via DOPF the transfer of funds from the PA account to the enterprises or farmer groups concerned. Direct, rather than cascading fund flows help maintain the pace of implementation. The Flow of Funds is visualised in Figure 1.



94. **Disbursement procedures.** Advance withdrawal is the principal method of disbursement of the loan. The first withdrawal (initial advance) from the loan account to the DA is conditional upon: (i) evidence that the DA is opened; (ii) authenticated specimen signatures of each person authorised to operate the DA; and (iii) sufficient evidence of the authority of the persons who will sign Withdrawal Applications (WA) on behalf of the government. Subsequent transfers are based on WAs accompanied by Statements of Expenditure (SOE). The SOE threshold, foreseen as USD 50,000, will be established in the LtB and can be adjusted during Project implementation. Disbursement from the loan account through Direct Payment (i.e. bypassing the DA) is exceptional and must be accompanied by a signed copy of the contract and supporting documents confirming the eligibility of the expenditure.
95. **Government and beneficiary contributions.** The Government, beneficiary and private sector contributions (cash and kind) will be incorporated in the Annual Work Plan and Budget (AWPB) and will be shown in the Project accounts.

#### d. Summary of benefits and economic analysis

96. PICSA provides indirect and direct benefits to an estimated 40,000 households in 19 Districts of four Provinces. PICSA targets a minimum of 17,200 households directly through the Farmer Group Investment Facility. Assuming an 80% adoption rate, the Project contributes to sustainable and inclusive local economic development for around 13,740 households. The financial and economic analysis of the Project is presented in Annex 4 and summarised at the start of this document (page xi).
97. Direct benefits accrue to smallholder investment in agricultural intensification (including supplementary irrigation) thus enabling establishment and diversification of cash crops in the dry season and development of fruit crops. The basis for the benefits in the financial and economic analysis is the incremental production at household level realised across four farm types where existing irrigation can be rehabilitated through minor works or supplementary small-scale irrigation can be established. Illustrative models have been developed to examine the financial viability of the investments in four representative farm models. All farm system types examined were found financially viable. Returns to family-labour for each model were shown to be considerably above the daily wage thus providing a sound incentive for household production as well as an argument against outmigration of labour.
98. **Economic viability.** The economic viability of the project is assessed by comparing aggregated incremental benefits and costs. The benefit stream is based on the value of the incremental production from the 13,740 farm household models phased-in over the implementation period. Other unquantified benefits are expected to be realised for around 40,000 households (including direct beneficiary households) through development of market linkages, establishment and/or improvement of rural access, improved irrigation management, improved public and private agricultural extension services and improved nutritional intake. The cost stream is based on the same households' incremental costs plus PICSA investment and recurrent costs. Cash flow are projected over a 25-year period that includes appropriate recurrent costs beyond PICSA implementation to justify sustained benefits over that period. The incremental net benefit stream so derived, is the basis of the investment appraisal.
99. **Economic indicators.** The overall PICSA project economic net present value (ENPV) is USD 21 million at a 9% discount rate (26) . The economic internal rate of return (EIRR) is 16.4%. The benefit cost ratio (BCR) of 2.12 indicates a return of 2.12 dollars for every dollar invested. All results indicate that the investment is worthwhile (27) .
100. **Sensitivity analysis.** An increase in programme costs by 10% reduces the EIRR to 15.5%, while a decrease in overall programme benefits by 20% results in an EIRR of 14.3%. A one-year delay in benefits reduces the EIRR to 15.1% and a two-year delay to 13.9%. These impacts in combination do not reduce the EIRR to below the threshold rate of 9%, indicating the robust nature of the investment.

#### e. Exit Strategy and Sustainability

101. The Project places a new foundation under the rural economy by linking smallholder agriculture to emerging markets; and by a stronger hand in improving livelihoods of disadvantaged groups. Sustainability depends on continued care for this foundation: The Project is successful if farmers, farmer groups and water user groups use part of their increased earnings to reinvest in order to safeguard or enhance the new level of productivity and market integration. The second test of successful completion is for inclusiveness to become a standard consideration for Villages, Districts and Provinces in decision-making on rural development.
102. The Project's Exit Strategy needs to be refined in the course of the Project, taking benefit of lessons learned on what works and what doesn't; while gradually shifting focus from sustaining Project benefits to scaling-up and scaling-out those benefits. PGT will combine the Exit Strategy and the Strategy for Scaling-up and Scaling-out (section 4.L.I) in a single strategy. A draft is included in Annex 10. The PGT will develop and elaborate this strategy on the basis of its increasing experience.

### **3. Risks**

#### **H. Project risks and mitigation measures**

103. Annex 9 present the Integrated Risk Framework (IRF), with fiduciary risks reviewed in detail. Identified risks are addressed in the project design through a mitigation measure; or externalised as LogFrame indicators (see Annex 1), which (i) are expected to hold, and (ii) which will be monitored during implementation so that additional mitigation measures may be taken if need be.
104. The overall risk profile is medium, but financial and procurement risks are high and could seriously affect the project, bringing reputational damage to GoL and IFAD. To ensure adequate risk mitigation, PICSA will employ financial management staff at all levels; and apply a comprehensive package of financial management measures.
105. Risks associated with the coordination of several donor projects (PICSA, SRIWMSP, ERP) are mitigated by the decentralised implementation structure and by sharing offices, management and facilities (see section on Project Organisation).
106. Annex 9 present the Integrated Risk Framework (IRF), with fiduciary risks reviewed in detail. Identified risks are addressed in the project design through a mitigation measure; or externalised as LogFrame indicators (see Annex 1), which (i) are expected to hold, and (ii) which will be monitored during implementation so that additional mitigation measures may be taken if need be.

#### **I. Environment and Social category**

107. The potential social and environmental impacts of PICSA are low to moderate and PICSA is classified in Category B. Investments in irrigation concern minor works within schemes where land is already allocated. Investment in headworks is excluded. PICSA supports farm tracks by upgrading existing alignments or by developing new ones on village land with explicit consent from village authorities. Enhanced road transport is limited to farm machinery, small vans and motorcycles. Road safety, traffic control and regulation of activities will be made the responsibility of Village Authorities. Agricultural intensification will promote organic production in view of existing market opportunities for organically-produced high value crops.
108. For SRIWMSP investment in irrigation schemes and roads, preliminary Environmental and Social Impact Assessments, Environmental and Social Management Plans and Resettlement Action Plans are prepared in accordance to ADB safeguard procedures. IFAD will review these documents to confirm their alignment to IFAD's Social Environment and Climate Assessment (SECAP) guidelines. If this is not the case, IFAD recommends additional measures; and if these cannot be included, IFAD recommends the implementing agency that the specific scheme cannot be supported.
109. Irrigation schemes, rural access tracks and other investments under the overall programme will only be supported if evidence of due diligence is presented for IFAD's prior review. PICSA will not invest in infrastructure that requires acquisition of private lands and / or resettlement of project affected people.
110. All investments in agricultural intensification, which are realised through the FGIF, will mitigate their negative social and environmental impacts, if any. The planning procedure for FGIF investments ascertains and documents free, prior and informed consent (FPIC) of all communities in all villages that PICSA is working in. This is described in further detail in the Project Implementation Manual.

#### **J. Climate Risk classification**

111. The climate risk category is moderate, as PICSA includes adaptation and mitigation measures to face the anticipated climate risks. A review of various studies[28] confirms that Lao PDR is highly vulnerable to climate change, although there are gaps in information and differences in the analysis of the level of risk and vulnerability. The key climate trends[29] that have the potential to significantly affect livelihoods in Northern Laos are:
- Decreases in rainfall in the North affects the viability of rain-fed agriculture in the absence of irrigation or water harvesting technology;
  - Shorter but more intense rainy seasons will increase flood risk. This generates a dual risk of increased drought and flood risk in the same area;
  - Higher temperatures in the dry season will increase the magnitude of dry spells and droughts. The combination of more rainfall and higher temperatures affects crop suitability of paddy, coffee, cassava, and maize.
112. In view of the increasing severity of climate-related risks PICSA refrains from investment in irrigation headworks (i.e. intake weirs), which are prone to flood damage and which may aggravate flooding of agricultural fields. PICSA on-farm irrigation works and road infrastructure should be climate-proofed. As PICSA supports minor infrastructure, the climate-proofing is largely provided by good management practices in the regulation of use, timely maintenance and

proper operation.

113. The climate risks to PICSA's investments are mostly linked to changing rainfall patterns and rising temperatures, inducing (i) landslides on steep hillsides; (ii) flash floods and water logging in lowlands; and (iii) drought and extreme hot spells. PICSA uses avoidance, adaptation and mitigation measures to reduce the possible negative impacts of climate change related natural events on project outcomes (See Table 5).

**Table 5: PICSA's climate-related risk avoidance, adaptation and mitigation**

Risk	Avoid	Adapt	Mitigate
<b>Flood / inundation</b>			
Roads	No investment in slopes of more than 25%	Erosion protection (bio-engineering) and adequate toe and cross drainage	Road management vested in local authorities; swift repairs to any damage
Irrigation	No investment in intake structures	Support small-scale Multi-Use water Systems on higher lands; support on-farm irrigation works and equipment	Remove on-farm irrigation equipment during high flood risks
Crops	No high value crop production on highly vulnerable areas.	Focus on paddy cultivation in lowlands during the wet season	Vegetable production on well-drained uplands in wet season and in lowland schemes during dry season
<b>Landslides and erosion</b>			
	No investments on slopes of more than 25%	Introduce Good Agricultural Practices (e.g. from WOCAT <sup>a</sup> Laos); invest in permanent cover (fruit trees, grasses)	Intensified production in potential areas to reduce pressure on steeper slopes, upper catchments and forested areas
<b>Drought</b>			
	Do not support schemes with an inadequate water supply	Shift to high value crops (requiring less water than paddy)	Enhance water use efficiency (drip, sprinkler); enhance water harvesting and storage capacity (small ponds and tanks)
<b>Extreme hot spells</b>			
			Introduce Good Agricultural Practices (mulching, minimum tillage, agro-forestry to improve shade cover, shade cloth)

114./a WOCAT is a global network on Sustainable Land Management (SLM) that promotes the documentation, sharing and use of knowledge to support adaptation, innovation and decision-making in SLM

115. The totality of PICSA interventions helps to create a more robust and intensive use of permanent agricultural lands and helps relieve the households' needs to revert to exploitative land use patterns on upper slopes and forested areas in the catchments; and thereby facilitates the effectiveness of the investments under ERP. PICSA contributes towards avoiding further land clearance and detrimental land use changes; thereby enabling mitigation finance to simultaneously be captured.

## 4. Implementation

### K. Organizational Framework

#### a. Project management and coordination

116. **Partner agencies.** PICSA's components and the outputs thereunder are delivered through decentral departments of the following organisations:

- **Intensified agricultural development:** Ministry of Agriculture and Forestry and its Departments of Irrigation, Planning & Finance and Extension; and the Ministry of Natural Resources and Environment;
- **Value Chains developed:** Ministry of Industry and Commerce, Chamber of Industry and Commerce, especially its SME Support Centre;
- **Improved nutritional practices:** The Convergence agencies - Ministry of Agriculture and Forestry; Ministry of Health (MoH) and Ministry of Education and Sports (MoES), Lao Women Union (LWU) and Youth Union.

117. **Coordination structures.** The Financing Agreement will be signed between the Ministry of Finance (MoF) and IFAD. MAF is lead implementing agency. A National Project Steering Committee (NPSC) provides strategic guidance to SRIWMSP and PICSA and reviews and approves Annual Work Plans and Budgets. Changes to PICSA's project areas will be reviewed by the NPSC prior to requesting IFAD no-objection. The Programme Governance Team (PGT) at the Department of Irrigation in MAF will provide oversight to SRIWMSP and PICSA, coordinate planning and investment across provinces; translate experiences from PICSA and SRIWMSP into lessons for national programmes and policies; and ensure adequate Financial Management. At Provincial level, PICSA and SRIWMSP activities will be steered and managed by a Provincial Steering Committee (PSC) and a Provincial Project Implementation Team (PPIT).

118. To enable coordinated implementation of PICSA and SRIWMSP, the March 2019 draft decrees for the formation of the steering committees and the implementation teams for SRIWMSP will be amended:

- The steering and management structure shall be replicated at District level, in view of PICSA outputs that are to be delivered by District agencies, with requisite involvement of village authorities. The structures at district level also supports implementation of SRIWMSP and should ensure coherence with the ERP and other projects and programmes;
- Membership of steering committees and implementation teams at all three levels need to be amplified to allow review by implementation partners of all PICSA components (see paragraph 110);
- Where the National and Provincial Steering Committees meet annually and half-yearly, respectively, the District Steering Committees meet quarterly;
- In addition to the manpower requirements identified for SRIWMSP, the PGT shall include project staff to provide assistance to PICSA's implementation, financial management and procurement; and a Monitoring and Evaluation (M&E) Officer 'shared' with SRIWMSP. This allows knowledge management across the projects, while ensuring reports in line with donor requirements.

119. **Project coordination risk management.** Start-up delays in one project may impact on the other. In the PICSA design, this risk is mitigated by delivering PICSA outputs in and beyond the project area of SRIWMSP. Thereby, delivery can be timed to coincide (when needed), while activities can continue in other parts of the project area. Sharing of managers, office space and facilities enables early identification of delays and dependencies and allows them to be addressed within the project management, rather than by deferring to the donor agencies.

120. **Alignment to planning process.** Implementation planning is closely aligned to the GoL annual Socio-Economic Development Planning. PSCs and DSCs are convened immediately following SEDP meetings, so that resource allocation to project activities reconciles the overall directives of the project with priorities and aspirations at decentral level. It follows logically that other projects serving the agricultural and nutrition sectors, such as the Agricultural Competitiveness Project (ACP, World Bank-funded); are reviewed and coordinated through the same planning procedure.

121. **Convergence approach.** The National Convergence Approach for Nutrition involves three Ministries (Agriculture and Forestry – MAF; Education and Sports – MoES; and Health – MoH) as well as the Lao Women Unions (LWU) to undertake coordinated interventions to promote improved nutrition practices, particularly in adolescent girls, young mothers and children. The present modus of coordination between these agencies at District level largely consist of distributing activities over agencies. PICSA enhance the focus on the joint target of behavioural change. This entails that agencies cooperate around joint activities for integrated food production in school gardens and homesteads. This will be the starting point for diverse activities.

## **b. Financial Management, Procurement and Governance**

122. The inherent risks for PICSA are considered to be high. This assessment takes into account the overall environment surrounding financial management; the Government's agenda for improving financial management practices and progress thereof; and experience gained within IFAD's portfolio.
123. The 2017 Corruption Perception Index for Lao PDR has declined slightly to 29 compared to 2016's 30. Lao PDR ranks 135th out of 180 countries, a deterioration from 2016's 123rd out of 176. Lao PDR is perceived as a high-risk operating environment .
124. The Government of Lao PDR has undertaken a series of structural Public Financial Management (PFM) reforms in recent years. Some initiatives, such as the Governance and Public Administration Reform Programme (GPAR 2007 - 2012), were carried out to address high priority issues identified. GPAR aimed to establish a more credible PFM system to enhance accountability and transparency in expenditure management. The reforms introduced have been supported by development partners, including the WB and the ADB. Progress has been achieved, but the benefits of the reforms have yet to be fully realised .
125. Two Public Expenditure and Financial Accountability (PEFA) assessments were conducted in Lao PDR, in 2006 and 2010. They conclude that the reforms attempted were deemed overly complex, broad and excessively ambitious, and not well adapted to local implementation capabilities. While some outputs related to PFM could have provided the groundwork for future reform efforts, achievements were considered modest .
126. The roll-out of a Government Financial Information System (GFIS), which will potentially provide real-time access to accounting information, has been delayed. This system is currently in place in central Ministries and at the provincial level, but not at the district level. The system involves a mix of electronic and paper-based processes, which lessens efficiency.
127. The use of local accounting standards, which have not been formally published and do not fully comply with international standards, remains a shortcoming. The Accounting Department of the MoF is leading the transition in adopting the International Public Sector Accounting Standards (IPSAS), but changes in legislation are required to achieve this long-term objective.
128. The efficiency of financial management on IFAD's projects in Lao PDR is limited due to local capacity and the absence of integrated reporting systems. Also, manual accounting remains the prevalent practice across donor-funded projects.
129. The mandate of the State Audit Organisation (SAO) in Lao PDR extends to State-Owed Enterprises and projects as well as to ministries and provinces, though the organisation's ability to audit donor-funded projects is limited by capacity constraints. Currently, the SAO is following International Standards for Supreme Audit Institutions (ISSAI), which were modified to suit local practice. The PEFA 2010 noted that the main focus of its audit was more on compliance, although some performance audit work was initiated on procurement.
130. IFAD-funded projects are audited by private auditors. In the case of NSLCP, co-financed with the ADB, ADB accepted a switch from SAO to a private auditor after several shortcomings in the internal control system of the project were found, which were not detected by the SAO.
131. The internal audit function is not well developed within Government agencies. Although some attention is given to this in a very crowded reform agenda it may not be viewed as the highest priority.
132. **Procurement.** Procurement shall be carried out in accordance with Lao PDR's Public Procurement Law (2017), MOF's Public Procurement Instructions of 13 February 2019 and subsequent public procurement regulations as long as they are consistent with IFAD Project Procurement Guidelines (2010 version). In case of contradiction between IFAD Guidelines and national regulations, the former will take precedence.
133. Procurement will be undertaken: (i) for the overall project by PGT; (ii) for decentralised activities (trainings and extension services, nutrition interventions, village to village access road, etc.) by PPITs and/or DPITs; (iii) for the AIF by agro-enterprise applicants; and (iv) for the FGIF by farmer groups.
134. Procurement of goods, works and services under the AIF will be carried out by awarded applicants/enterprises. An AIF Guideline, providing detailed procurement procedures and requirements, is drafted with experience from a/o FNML and AFN.
135. Procurement of infrastructure investments and input packages under Farmer Group Investment Facility (FGIF) will be carried out by farmer groups through force account method and/or simplified local shopping with technical support from district staff. Contributions by farmer group are met in term of labour, locally collected construction materials and cash. Project financing is for purchasing construction materials, equipment, capacity building and production input packages through simplified local shopping method, with at least 3 quotations where possible. A draft FGIF

Guideline, using experience from FNML, AFN and other projects, provides detailed procurement procedures and requirement.

136. Procurement of works under Sub-component 2.3 – Improved Access will be carried out by DPITs following procurement procedures and processes specified in the Project Procurement Guidelines. Local competitive bidding and/or local shopping will be applied for procurement of works for village to village access tracks. Construction of village to field access will be implemented by villagers using FGIF procedures.
137. The project shall recruit a fulltime Procurement Officer at PGT. She/he will be responsible for procurement planning and implementation at PGT; training, supporting PPITs/DPITs staff, ABIF applicants and Farmer Groups undertaking procurement activities at provincial and district levels. A Procurement Committee including at least 3 representatives of PICSA hired or seconded staff will be established for each procurement activity undertaken at national, provincial and district levels.
138. **Procurement Guidelines.** Draft Procurement Guidelines have been produced for review and approval by the GoL. The reviewed guidelines shall together with the Project Implementation Manual and the Financial Management Manual be submitted for IFAD approval. Guidelines describe procurement planning; procurement methods for works, goods and services; documentation and prior review requirements.
139. **Procurement Plan.** IFAD review of and no objection to the Procurement Plan is compulsory, and any changes and amendments to the plan are subject to IFAD's No Objection. A draft of the first 18-month procurement plan is included in Annex 7. Subsequent updates must adhere to the template in the Procurement Guidelines.
140. **IFAD's prior review requirements.** Procurement decisions shall be subject to prior review by IFAD for any contract for goods, works and non-consulting services estimated to cost USD 60,000 and above; as well as for any contract of consulting services estimated to cost USD 30,000 and above. All direct contracts for goods and civil works and single source selection for service providers above the prescribed procurement and selection method thresholds shall be subjected to IFAD prior review. The aforementioned thresholds may be modified by IFAD during implementation.
141. IFAD has introduced an application (web-based software) named No Objection Tracking Utility System (NOTUS) in 2018 for submission and processing all project requests (including AWPB, Procurement Plan, procurement steps subjected to IFAD prior review, project guidelines and manuals etc.) for IFAD's prior review and no objection. In Lao PDR, IFAD organized a NOTUS rolling-out training for IFAD-funded projects in March 2019. NOTUS will be applied for IFAD-funded projects in Laos from April 2019. PICSA is expected to use NOTUS for submission of the AWPB, procurement plan and procurement documents for IFAD's prior review and no objection.
142. **Governance and anti-corruption measures.** IFAD's Policy on Preventing Fraud and Corruption is reflected in IFAD's legal framework (Project Procurement Guidelines<sup>[30]</sup>, General Conditions for Agricultural Development Financing<sup>[31]</sup>, IFAD's Code of Conduct<sup>[32]</sup>), which applies to all recipients of IFAD financing and, thereby, to PICSA.
143. The PGT will ensure that all PICSA's activities are implemented within a framework of transparency. This framework will include measures to ensure that both procurement (either carried out by PPITs, DPITs or directly by the PGT) and the selection of agro-enterprises and farmer groups that will benefit from PICSA's investment facilities, are carried out in accordance with IFAD rules and project's design specifications. Other measures under the framework for transparency include:
  - Publication of sourcing, tendering and contracting processes at central, district and provincial offices;
  - Participation of representatives of end-users in bid assessments;
  - Prompt communication to bidders of bid evaluation outcomes;
  - An internal code of conduct to be signed by all Project staff;
  - A code of business ethics to be included in agreements/contracts signed with partners and beneficiaries. The code of conduct and the code of business ethics will be included in the PIM after review by implementation partners;
  - Annual project audits, that will include a routine assessment to companies and farmer-group grants participating in PICSA;
  - IFAD's direct supervision which inter alia will address fiduciary compliance;
  - Involvement of stakeholders (especially farmers and their organisations) in programming, implementation and M&E of PICSA activities;
  - Evaluation and impact assessment outsourced to independent institutions.
144. **Auditing and Public Disclosure.** Annual accounts will be audited by a private firm in accordance with International Standards on Auditing (ISA, specifically IDA 705) and the IFAD Handbook. The audited project financial statements together with the auditor's opinion will be submitted to IFAD within 6 months from the end of the fiscal year. Compliance with financial reporting, auditing requirements and the performance of the auditor will be monitored regularly and during supervision missions. The annual audit enables the auditor to express an opinion on whether PICSA's financial statements present fairly, in all material respects, its financial position at the end of the fiscal year, and whether the results of its operations and cash flow are in conformity with the accounting standards applied by PICSA.

145. IFAD promotes public disclosure of projects financial information to enhance transparency and accountability. IFAD will disclose PICSA's audit reports, as appropriate, in line with the IFAD's disclosure policy. Management Letters issued by auditors are not subject to public disclosure by IFAD.

## L. Planning, M&E, Learning, KM and Communication

### a. Planning, M&E, Learning, Knowledge Management and Communication

146. The two principal instruments for planning and monitoring are the Logical Framework (Annex 1) and the Annual Work Plan and Budget (AWPB). The LogFrame is used for setting targets and for reporting on these. The Annual Work Plan and Budget annualises planned achievements against targets and links this to the overall budget.

147. **Planning.** The LogFrame and the detailed budget are the point of departure for annual planning. Overall targets and available resources are broken down into yearly achievements. Draft AWPBs are prepared by all concerned Districts and Provinces, and by the PGT and compiled at national level. The proposed AWPB is submitted to IFAD for no-objection and subsequently approved by the NPSC.

148. **Monitoring.** Key indicators are defined in the LogFrame and are reported upon in the semi-annual progress reports. The Project shall develop a monitoring plan, which helps to direct project interventions effectively and efficiently to their target. This monitoring plan will confirm that benefits are targeted to all target groups and categories. The monitoring plan will be included in the PIM and shall detail how information on specific targets and indicators is collected and processed.

149. **Knowledge management.** A key learning area for PICSA – in conjunction with experiences gained in SRIWMSP – is on participatory irrigation management. Lessons on what works and what doesn't will inform a review of irrigation policies, legislation and regulations by the Department of Irrigation and key stakeholders. This constitutes a contribution to policy development, which benefits strongly from the association of PICSA and SRIWMSP. MAF requested for participatory irrigation management to be the focus area for knowledge management.

150. **Strategic communication.** The key message of PICSA is that partnership helps achieve better market linkages, better production results and better nutrition practices, and leads to inclusive and sustainable development. PICSA is not a mere technical intervention, but a project aimed at socio-economic transformation. At national level, strategic communication aims to ensure scaling-up and replication.

### b. Innovation and scaling up

151. PICSA is innovative in a number of respects:

- It places technical interventions, such as irrigation management transfer, agricultural intensification, value chain development and nutrition education in a context of inclusive local economic development;
- It is aligned to GoL's drive for decentralisation of implementation to the Districts and fosters the relation between Districts and village authorities;
- It promotes commercial farming by smallholder farmers, in a break with Laos' tradition of large-scale production lead by enterprises.

152. Supplying smallholder farmers with commercially viable innovations is a key concern. The PGT will maintain and develop contacts with national and international research institutions to continuously feed the promotion of new agricultural practices. Successful approaches will be replicated to enhance the benefit flow of the Project.

153. Project outcomes and successes can – and should be – promoted beyond the project area and implementation period. The Project is designed in a modular fashion, so that the concept can be added-on to infrastructure investment; or can be implemented as a stand-alone intervention. Scaling-out is also pursued through knowledge management focussed on the 2012 Irrigation Law.

154. Scaling-up is integrated in the exit strategy (section 2.G.h). The PGT is responsible to develop the Exit and Scaling Strategy following lessons derived from project implementation. Annex 10 provides a first draft for further elaboration.

## **M. Implementation plans**

### **a. Implementation readiness and start-up plans.**

155. PICSA is expected to start in January 2020 and has a planned duration of six years. To facilitate a swift start, this Project Design Report includes: (i) a specification of activities to be financed prior to project effectiveness through a Project start up finance; (ii) a draft Annual Work Plan and Budget for the 1st year, included in Annex 6; and (iii) a draft 18-month Procurement Plan (Annex 7).

### **b. Supervision, Mid-term Review and Completion plans.**

156. Supervision missions will take place annually and will coincide with supervision missions for SRIWMSP and ERP. Ratings (to ascertain the status of the Project in IFAD) will be made separately, whereas the Aide-Memoire of the Mission will be combined. In preparation to the Mission, the PGT will prepare a position paper, which includes suggestions for actions to be agreed upon between GoL and IFAD.

157. Support missions will be fielded as per the need and the resources available. Likely topics include financial management, procurement, M&E and knowledge management and project management.

158. The Mid-term Review will take place in year three, again in combination with SRIWMSP and ERP. Since the Mission is likely to result in an update of the project design; a separate PICSA report will be prepared. In preparation to the MTR, the Project will conduct the mid-term survey; and will prepare a position paper, which includes suggestions for actions to be agreed upon between GoL and IFAD. Moreover, the PGT will submit a updated and expanded Exit Strategy for review.

159. A Completion Mission is fielded after the completion survey is carried out and reported upon, and takes place in PICSA's final year. In preparation to the Mission, the PGT will prepare a position paper that discusses the hand-over of outcomes.

## **Footnotes**

[1] A list and map of eligible Villages (i.e. with potential to pursue agricultural intensification around irrigated areas) was prepared in January 2019 by the Department of Irrigation.

[2] The term 'resilience' explicitly includes climate resilience, whereas 'sustainability' must be understood in economic, institutional, social and environmental terms (including climate risk resilience). The latter applies to the term 'sustainable' in the Project Development Objective in like manner.

[3] As per IFAD (2015) Economic and Financial Analysis of Rural Investment Projects – Internal Guide

[4] Lao Statistics Bureau, Results of The 4th Population and Housing Census (PHC) 2015, Vientiane, 2015

[5] Using the national poverty line. Source: Lao PDR Expenditure and Consumption Survey 2012; World Bank Poverty and Equity brief, October 2018.

[6] FAO, Laos at a Glance, website, 2019.

[7] **Houaphan:** Xamneua, Viengxay and Sopbao Districts; **Xieng Khouang:** Paek, Khoun and Kham Districts; **Luang Prabang:** Nan, Xieng Nguen and Luang Prabang Districts; **Xayaboury:** Xayaboury, Phiang and Paklai Districts

[8] See footnote 5.

[9] Lao Statistics Bureau / World Bank, Where are The Poor? Lao PDR Census-based Poverty Map: Province and District Level Results, June 2016

[10] Lao Statistics Bureau, Lao Social Indicator Survey II (LCIS II), 2017

[11] See footnote 9.

[12] Messerli, P.L. et al, Towards a Spatial Understanding of Trade-Offs in Sustainable Development: A Meso-Scale Analysis of the Nexus between Land Use, Poverty, and Environment in the Lao PDR, 2015

[13] World Bank Poverty and Equity Brief, October 2018

[14] Lao Statistics Bureau, Lao Social Indicator Survey II (LCIS II), 2017

[15] The Lao Bureau of Statistics classifies the population in urban, rural with road and rural without road. The intervention area of PICSA resembles largely with the rural with road category.

[16] The term 'resilience' explicitly includes climate resilience, whereas 'sustainability' must be understood in economic, institutional, social and environmental terms (including climate risk resilience). The latter applies to the term 'sustainable' in the Project Development Objective in like manner.

[17] A list and map of eligible Villages (i.e. with potential to pursue agricultural intensification around irrigated areas) was prepared in January 2019 by the Department of Irrigation, with support from IFAD.

[18] PICSA will use experiences from IFAD Vietnam portfolio and the Southern Laos Food and Nutrition Security and Market Linkages Programme (FNML)

[19] There are only 66 formally registered Water User Associations nationwide, against a recorded 2,467 informal Water User Groups

[20] E.g. private sector (combined input supply with extension) and knowledge institutions under the national and international agricultural research network

[21] In many cases, the model farmer is expected to be the group leader of the associated Farmer Group.

[22] *Inter alia* UNDP, 2015: UN Country Analysis Report Lao PDR 2015; ADB Second Private Sector and Small and Medium-Sized Enterprises Development Programme (RRP LAO 44057), 2016: Sector Assessment: Trade and Industry (SME) Sector

[23] The Project 'SME Access to Finance' implemented by Ministry of Industry and Commerce (Department of SME Promotion), financed by World Bank with technical assistance from International Labour Organisation (ILO) helps develop these centres at Provincial level

[24] Laos Road Law, 8/11/2016

[25] The IFAD loan of USD 21.00 million assumes that discussions with GoL can conclude the closure of NSLCP-RFSP and the transfer unspent funds to PICSA. In the event this does not happen, the funding gap will be around USD 8 million.

[26] As currently applied in Lao PDR by ADB

[27] Decision criteria: ENPV > USD 0; EIRR > 9% (discount rate) and BCR > 1

[28] Adaptation Fund, Groundwater resources in the Greater Mekong Subregion: Collaborative management to increase resilience UNESCO 2017; ADB, Northern Rural Infrastructure Development Sector Project, Climate Risk and Vulnerability Assessment, 2016; AKP, Scoping Assessment of Climate Change Adaptation Priorities in the Lao PDR 2012; CSIRO, Mekong River Basin Water Resources Assessment: Impacts of Climate Change 2008; Epprecht et al, Framing vulnerability and adaptation in the context of the Lao Upplands CDE/CIRAD; GFDRR, Climate Risk and Adaptation Country Profile: Vulnerability, Risk Reduction, and Adaptation to Climate Change. April 2011; GoL WREA, National Adaptation Programme Of Action to Climate Change, UNDP GEF, 2010; GoL WREA, The Strategy on Climate Change , 2010

[29] Source: MoNRE / WFP, 2016

[30]<https://www.ifad.org/web/guest/document-detail/asset/39438991>

[31]<https://www.ifad.org/web/guest/document-detail/asset/39500875>

[32]<https://www.ifad.org/web/guest/document-detail/asset/40186603>



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 1: Logframe**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



## Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)

### *Logical Framework*

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Outreach	1 Persons receiving services promoted or supported by the project				Project M&E records / Progress Report	semi-annual	PGT, PPIT, DPIT	
	Females		38376	95940				
	Males		38376	95940				
	Young		19188	47970				
	Not Young		57564	143910				
	Indigenous people		30701	76752				
	Non-Indigenous people		46051	115128				
	Total number of persons receiving services		76752	191880				
	1.a Corresponding number of households reached				Project M&E records / progress report	semi-annual	PGT, PPIT, DPIT	
	Non-women-headed households		2214	5535				
	Women-headed households		12546	31365				
	Households		14760	36900				

Results Hierarchy	Indicators				Source	Means of Verification	Assumptions			
	Name	Baseline	Mid-Term	End Target						
	1.b Estimated corresponding total number of households members				Project M&E records / progress report	semi-annual	PGT, PPIT, DPIT			
	Household members		76752	191880						
	Groups receiving project services				Project M&E records / progress report	semi-annual	PGT, PPIT, DPIT			
	Group		980	2450						
<b>Project Goal</b> Enhanced livelihood and climate resiliencies and sustainability within the project intervention area. (NB: The term 'resilience' explicitly includes climate resilience, whereas 'sustainability' must be understood in economic, institutional, social and environmental terms (including climate risk resilience). The latter applies to the term 'sustainable' in the Project Development Objective in like manner.)	# target group households (extreme poor, poor, near poor) reporting enhanced resilience				a household resilience index included in the surveys	Project start, midterm and completion	PGT (outsourced)			
	# target group households		9184	22960						
	% of households below the poverty line				Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)			
	% households	30	20	5						
<b>Development Objective</b> Sustainable and inclusive local economic development	1.2.8 Women reporting improved quality of their diets				Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)			
	Percentage	50	60	80						

Results Hierarchy	Indicators				Source	Means of Verification	Assumptions	
	Name	Baseline	Mid-Term	End Target				
<b>Outcome</b> 1. Intensified agricultural development	Cropping intensity in lowland paddy fields (proxy for farming system intensity)				Project M&E records	Annually	Greater local economic development results in a stabilisation or reduction of out-migration Sound disaster risk management and disaster response	
	Cropping intensity	110	120	140				
	1.2.2 Households reporting adoption of new/improved inputs, technologies or practices				Baseline, midterm and completion surveys	Project start, midterm and completion		
	Households	10	20	50				
	Females							
<b>Output</b> 1.1 Decentralized implementation strengthened	# of Districts with more than 15 staff trained in project implementation and management procedures				Project M&E records	semi-annual	Adequate continuity in the positions and postings of government staff at all levels Government maintains its support for a strong implementation role of the Districts (Sam Sang decree put to practice)	
	Districts		19	19				
	# of village authorities trained in leading Local Economic Development				Project M&E records	semi-annual		
	Village authorities		350	350				
<b>Output</b> 1.2 Water users' groups trained	3.1.1 Groups supported to sustainably manage natural resources and climate-related risks				Project M&E records	semi-annually	Collaboration and commitment among agencies involved in promoting commercialisation of smallholder agriculture	
	Groups supported		175	438				
<b>Output</b> 1.3 Extension Service provided	1.1.4 Persons trained in production practices and/or technologies				Project M&E records	semi-annually	Valid agricultural innovations available from research institutions and private sector	
	Total persons trained in crop		11200	28000				

Results Hierarchy	Indicators				Source	Means of Verification	Assumptions		
	Name	Baseline	Mid-Term	End Target					
<b>Output</b> 1.4 Farmer Group Investment Facility established	2.1.3 Rural producers' organizations supported				Project M&E records	semi-annualy	DPIT	Farm households are able to finance their part of the investment facility	
	Rural POs supported		980	2450					
<b>Outcome</b> 2. Value chain development	% of households reporting an increase in sales of farm products				Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)		
	Households		20	50					
	% of participating enterprises having a positive net return on investment				Thematic survey	Midterm and completion	PGT (outsourced)		
	Enterprises		80	90					
<b>Output</b> 2.1 Multi-stakeholder platforms established	Policy 2 Functioning multi-stakeholder platforms supported				Project M&E records	semi-annual	DPIT	Private investors are interested in investing in business opportunities in smallholders agriculture along conditions promoted by the programme	
	Number		8	19					
<b>Output</b> 2.2 Agro-Enterprise Investment Facility established	2.1.1 Rural enterprises accessing business development services				Project M&E records	semi-annual	PPIT	Local enterprises are able to finance their part of the investment facility	
	Rural enterprises		102	255					
<b>Output</b> 2.3 Improved rural access	2.1.5 Roads constructed, rehabilitated or upgraded				Project M&E records	Annually	DPIT	Communities assume responsibility for use, maintenance and management of facilities invested in by the Project	
	Length of roads		202	504					

Results Hierarchy	Indicators				Source	Means of Verification	Assumptions
	Name	Baseline	Mid-Term	End Target			
<b>Outcome</b> 3. Improved nutritional practices	1.2.8 Women reporting improved quality of their diets				Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)
	Percentage	50	60	80			
<b>Output</b> 3.1 School-based nutrition interventions established	# of schools serving improved meals of adequate nutritional value				Project M&E records	semi-annual	DPIT
	Schools		64	160			
<b>Output</b> 3.2 Increased dietary intake and improved dietary quality	# of new school gardens established				Project M&E records	semi-annual	DPIT
	School gardens		40	100			
	1.1.8 Households provided with targeted support to improve their nutrition				Project M&E records	semi-annual	DPIT
	Households		680	1700			



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 2: Theory of change**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



## Annex 2: Theory of Change

The Theory of Change and the development pathways therein are discussed in Section E. of the main text. Assumptions underpinning the development pathways are incorporated into the Logical Framework (Annex 1). Theory of Change and Logical Framework must be read in conjunction.

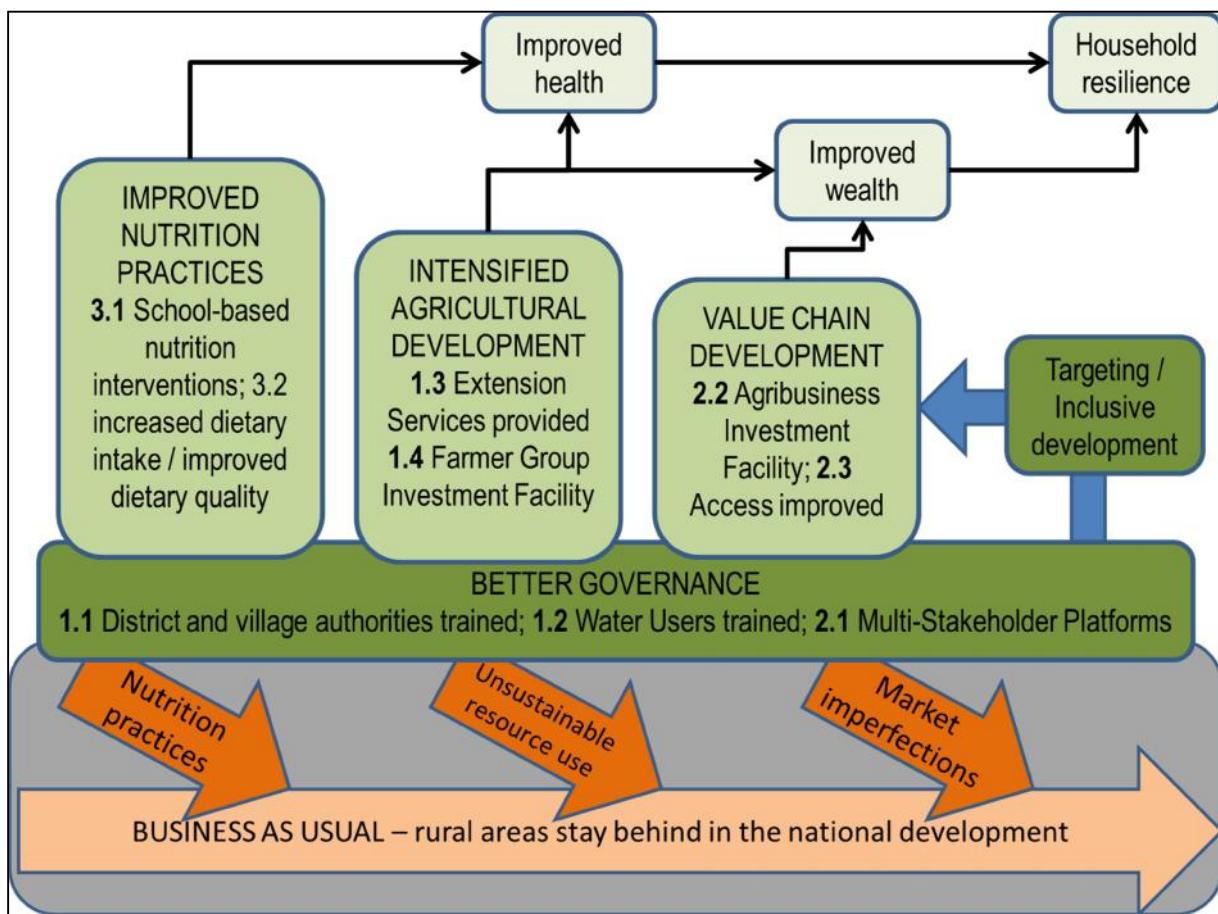


Figure 2: PICSA Theory of Change



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 3: Project cost and financing: Detailed costs tables**

Document Date: 22/07/2019

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## Annex 3: Project Costs and Financing

### A. Main assumptions

1. Programme duration. The duration of the PISCA implementation is six years with an intended project start in January 2020.
2. Prices and costs. Costs have been collected as of March 2019. Costs are inputted in US dollars with inflation adjustments made for the differing cost bases. Data were collected by the consultants in the field and via partners and other IFAD projects. The Project costs are presented in both LAK and USD. Conversions from current USD values into LAK over the course of project implementation assume constant purchasing power exchange rates.
3. Inflation. The local inflation scenario for the 6 years of the programme is provided in Table 1. 1 below. The average inflation over the past 10 years has been 4 per cent, with a high of 7.6 per cent in 2011 and a low of 0.1 per cent in 2009 (IMF 2018<sup>1</sup>). The forecasts of the IMF, the World Bank and the Asian Development Bank for the next period estimate continuous moderate level of inflation.

Table 1. 1 - Inflation rates (local and foreign)

	2019	2020	2021	2022	2023	2014
Components						
Foreign inflation	2%	2%	2%	2%	2%	2%
Local inflation	4.5%	3.3%	3.1%	3.1%	3.1%	3.1%

4. Exchange rate. The Bank of Lao PDR reference rate as of 15 March 2019 of LAK 8,564/USD has been assumed.<sup>2</sup>
5. Contingencies, taxes and duties. The expenditure categories assumed in the cost model and shown in Table 1. 2 below.<sup>3</sup>

Table 1. 2 - Physical contingencies, foreign exchange and taxes/duties

Expenditure accounts	Physical contingencies	Foreign exchange	Duties/taxes
Works	15%	10%	10%
Goods, services and inputs	5%	20%	10%
Equipment and materials	10%	65%	20%
Consultancies – TA – International	-	100%	-
Consultancies – TA – National	-	-	15%
Trainings and workshops	10%	-	10%
Grants and subsidies	-	-	-
Salaries and allowances	-	-	-
Other operating costs	10%	5%	10%

6. The Government of Lao PDR finances the taxes on all goods and services purchased under the project.

<sup>1</sup> <https://www.imf.org/external/datamapper/PCPIPCH@WEO/OEMDC/LAO> Accessed 23 Oct 2018

<sup>2</sup> Bank of Lao PDR <https://www.bol.gov.la/en/referenceRate>

<sup>3</sup> The categories applied a consistent with the Standardised Category Descriptions for Loan Grant Allocation Table (Schedule 2) in Financing Agreements, IC/FOD/02/2013, dated 29 August 2013.

## B. Component costs

7. Total component cost. The total cost for the Project is estimated at USD 30.25 million (LAK 270.31 million) including contingencies. The total base costs are USD 27.86 million (LAK 238.59 million). Physical and price contingencies account for USD 0.84 million and USD 1.56 million respectively (3 per cent and 6 per cent of the total base costs). Baseline investment costs are estimated at USD 23.01 million representing 86 per cent of baseline cost. The breakdown of the costs by component is shown in Table 1. 3

Table 1. 3 – Components Project Cost Summary

Components Project Cost Summary	(LAK Million)			(US\$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
<b>A. Intensified Agricultural Development</b>								
Output 1.1 - District staff and village authorities trained	16,657	691	17,348	1,945	81	2,026	4	7
Output 1.2 - Water User Groups trained	10,183	119	10,303	1,189	14	1,203	1	4
Output 1.3 - Extension services provided /a	7,076	1,235	8,312	826	144	971	15	3
Output 1.4 - Farmer Group Investment Facility established /b	105,329	558	105,887	12,299	65	12,364	1	44
<b>Subtotal Intensified Agricultural Development</b>	<b>139,245</b>	<b>2,604</b>	<b>141,849</b>	<b>16,259</b>	<b>304</b>	<b>16,563</b>	<b>2</b>	<b>59</b>
<b>B. Value Chains Developed</b>								
Output 2.1 - Multi-Stakeholder Platforms established	9,306	2,861	12,167	1,087	334	1,421	24	5
Output 2.2 - Agro-Enterprise Investment Facility established	23,967	-	23,967	2,799	-	2,799	-	10
Output 2.3 - Access improved	20,637	2,171	22,808	2,410	253	2,663	10	10
<b>Subtotal Value Chains Developed</b>	<b>53,910</b>	<b>5,032</b>	<b>58,942</b>	<b>6,295</b>	<b>588</b>	<b>6,883</b>	<b>9</b>	<b>25</b>
<b>C. Improved Nutritional Practices</b>								
Output 3.1 - School-based nutrition interventions established	3,361	510	3,871	392	60	452	13	2
Output 3.2 - Increased dietary intake and improved dietary quality /c	4,126	2,115	6,241	482	247	729	34	3
<b>Subtotal Improved Nutritional Practices</b>	<b>7,487</b>	<b>2,626</b>	<b>10,112</b>	<b>874</b>	<b>307</b>	<b>1,181</b>	<b>26</b>	<b>4</b>
D. Project Management	22,115	5,572	27,687	2,582	651	3,233	20	12
<b>Total BASELINE COSTS</b>	<b>222,757</b>	<b>15,834</b>	<b>238,591</b>	<b>26,011</b>	<b>1,849</b>	<b>27,860</b>	<b>7</b>	<b>100</b>
Physical Contingencies	6,263	885	7,148	731	103	835	12	3
Price Contingencies	23,596	977	24,573	1,496	59	1,555	4	6
<b>Total PROJECT COSTS</b>	<b>252,616</b>	<b>17,696</b>	<b>270,312</b>	<b>28,239</b>	<b>2,011</b>	<b>30,250</b>	<b>7</b>	<b>109</b>

a Through public, private and farmer-to-farmer channels

b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

c For nutritionally vulnerable groups.

8. Component costs. The Project costs comprise three components as follows. Component 1 Intensified Agricultural Development USD 16.56 million or 59 per cent of the base costs, Outcome 2 Value Chain Developed USD 6.88 million or 25 per cent of the base costs and Component 3 Improved Nutritional Practices USD 1.18 or 4 per cent of base costs. Further details are shown in Table 1. 3.

## C. Financing plan

9. Component cost by financier. An IFAD loan will finance USD 13.00 million or 43 per cent of total project costs. The IFAD loan includes: USD 6.28 million or 35.1 per cent of Component 1: Intensified Agricultural Development for which the total cost is USD 17.86 million; USD 3.63 million or 47.5 per cent of Component 2: Value Chains Developed for which the total cost is USD 7.66 million; and, USD 0.82 million or 63 per cent of Component 3: Improved Nutritional Practices for which the total cost is USD 1.30 million.

10. The beneficiaries will finance USD 5.51 million or 18.2 per cent of the total project costs in the form of co-financing of the Farmer Group Investment Facility under Output 1.4. The private sector will finance USD 1.56 million or 5.1 per cent of the total project costs in the form of co-financing of the Agro-Enterprise Investment Facility under Output 2.2.

11. The Government will finance USD 2.16 million, of which USD 1.72 million is in the form of taxes and duties. The remainder of the Governments obligation is in the form of the salary of the Vientiane Programme Governance Team's Project Director, as well as the four Provincial Project Directors and office accommodation. The PISCA financing plan is shown in Table 1. 4

Table 1. 4 – PICSA Components by Financiers

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
**Components by Financiers**  
 (US\$ '000)

	IFAD Loan		Other Financier		Government		Beneficiaries		Private sector		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
<b>A. Intensified Agricultural Development</b>												
Output 1.1 - District staff and village authorities trained	1,185	52.6	648	28.8	420	18.6	-	-	-	-	2,253	7.4
Output 1.2 - Water User Groups trained	788	58.6	423	31.4	134	10.0	-	-	-	-	1,345	4.4
Output 1.3 - Extension services provided /a	588	56.0	340	32.4	122	11.6	-	-	-	-	1,050	3.5
Output 1.4 - Farmer Group Investment Facility established /b	3,716	28.1	3,947	29.9	38	0.3	5,510	41.7	-	-	13,212	43.7
<b>Subtotal Intensified Agricultural Development</b>	<b>6,276</b>	<b>35.1</b>	<b>5,358</b>	<b>30.0</b>	<b>715</b>	<b>4.0</b>	<b>5,510</b>	<b>30.9</b>	-	-	<b>17,859</b>	<b>59.0</b>
<b>B. Value Chains Developed</b>												
Output 2.1 - Multi-Stakeholder Platforms established	1,300	85.2	126	8.3	99	6.5	-	-	-	-	1,526	5.0
Output 2.2 - Agro-Enterprise Investment Facility established	557	18.8	801	27.0	56	1.9	-	-	1,555	52.4	2,968	9.8
Output 2.3 - Access improved	1,777	56.2	1,071	33.8	316	10.0	-	-	-	-	3,164	10.5
<b>Subtotal Value Chains Developed</b>	<b>3,634</b>	<b>47.5</b>	<b>1,998</b>	<b>26.1</b>	<b>472</b>	<b>6.2</b>	-	-	<b>1,555</b>	<b>20.3</b>	<b>7,658</b>	<b>25.3</b>
<b>C. Improved Nutritional Practices</b>												
Output 3.1 - School-based nutrition interventions established	268	56.0	154	32.2	56	11.7	-	-	-	-	478	1.6
Output 3.2 - Increased dietary intake and improved dietary quality /c	550	67.2	169	20.7	99	12.1	-	-	-	-	819	2.7
<b>Subtotal Improved Nutritional Practices</b>	<b>818</b>	<b>63.1</b>	<b>323</b>	<b>24.9</b>	<b>155</b>	<b>12.0</b>	-	-	-	-	<b>1,297</b>	<b>4.3</b>
D. Project Management	2,267	66.0	356	10.3	814	23.7	-	-	-	-	3,436	11.4
<b>Total PROJECT COSTS</b>	<b>12,995</b>	<b>43.0</b>	<b>8,035</b>	<b>26.6</b>	<b>2,155</b>	<b>7.1</b>	<b>5,510</b>	<b>18.2</b>	<b>1,555</b>	<b>5.1</b>	<b>30,250</b>	<b>100.0</b>

/a Through public, private and farmer-to-farmer channels

/b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

/c For nutritionally vulnerable groups.

12. The PISCA financing plan within the context of the related projects is shown in Table 1. 5. The related projects are: the ADB/EU financed Sustainable Rural Infrastructure Watershed Management Sector Project; and, GCF/BMZ financed Emissions Reduction Programme. The amounts indicated for these two projects are based on the proportion of the respective budgets allocated to PICSA identified Districts.

Table 1. 5 – PICSA, SRIWMSP and ERP Components by Financiers

(US\$ '000)

	IFAD Loan										Local			ADB / EU	GCF - BMZ
	TBF		Government		Beneficiaries		Private sector		Total		For. Exch.	(Excl. Taxes)	Duties & Taxes		
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%					
<b>IFAD: Partnerships for Irrigation and Commercial Smallholder Agriculture</b>															
<b>A. Intensified Agricultural Development</b>															
Output 1.1 - District staff and village authorities trained	1,185	52.6	648	28.8	420	18.6	-	-	-	2,253	7.4	90	1,743	420	
Output 1.2 - Water User Groups trained	788	58.6	423	31.4	134	10.0	-	-	-	1,345	4.4	16	1,194	134	
Output 1.3 - Extension services provided /a	588	56.0	340	32.4	122	11.6	-	-	-	1,050	3.5	161	768	122	
Output 1.4 - Farmer Group Investment Facility established /b	3,716	28.1	3,947	29.9	38	0.3	5,510	41.7	-	13,212	43.7	68	13,105	38	
<b>Subtotal Intensified Agricultural Development</b>	<b>6,276</b>	<b>35.1</b>	<b>5,358</b>	<b>30.0</b>	<b>715</b>	<b>4.0</b>	<b>5,510</b>	<b>30.9</b>	<b>-</b>	<b>17,859</b>	<b>59.0</b>	<b>335</b>	<b>16,810</b>	<b>715</b>	
<b>B. Value Chains Developed</b>															
Output 2.1 - Multi-Stakeholder Platforms established	1,300	85.2	126	8.3	99	6.5	-	-	-	1,526	5.0	347	1,079	99	
Output 2.2 - Agro-Enterprise Investment Facility established	557	18.8	801	27.0	56	1.9	-	-	1,555	52.4	2,968	-	2,968	-	
Output 2.3 - Access improved	1,777	56.2	1,071	33.8	316	10.0	-	-	-	3,164	10.5	303	2,544	316	
<b>Subtotal Value Chains Developed</b>	<b>3,634</b>	<b>47.5</b>	<b>1,998</b>	<b>26.1</b>	<b>472</b>	<b>6.2</b>	<b>-</b>	<b>-</b>	<b>1,555</b>	<b>20.3</b>	<b>7,658</b>	<b>25.3</b>	<b>651</b>	<b>6,591</b>	<b>416</b>
<b>C. Improved Nutritional Practices</b>															
Output 3.1 - School-based nutrition interventions established	268	56.0	154	32.2	56	11.7	-	-	-	478	1.6	68	354	56	
Output 3.2 - Increased dietary intake and improved dietary quality /c	550	67.2	169	20.7	99	12.1	-	-	-	819	2.7	289	431	99	
<b>Subtotal Improved Nutritional Practices</b>	<b>818</b>	<b>63.1</b>	<b>323</b>	<b>24.9</b>	<b>155</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,297</b>	<b>4.3</b>	<b>357</b>	<b>784</b>	<b>155</b>	
<b>D. Project Management</b>															
<b>Total PICSA Costs</b>	<b>12,995</b>	<b>43.0</b>	<b>8,035</b>	<b>26.6</b>	<b>2,155</b>	<b>7.1</b>	<b>5,510</b>	<b>18.2</b>	<b>1,555</b>	<b>5.1</b>	<b>30,250</b>	<b>100.0</b>	<b>2,011</b>	<b>26,520</b>	<b>1,719</b>
<b>ADB: Sustainable Rural Infrastructure Watershed Management Sector Project</b>															
Output 1: Market oriented high value agriculture production increased	-	-	-	-	-	-	-	-	-	-	-	-	-	2,429	
Output 2: Watershed ecological services protected	-	-	-	-	-	-	-	-	-	-	-	-	-	3,340	
Output 3: Command area irrigation reliability improved	-	-	-	-	-	-	-	-	-	-	-	-	-	12,751	
Output 4: Nutrition awareness and facilities improved	-	-	-	-	-	-	-	-	-	-	-	-	-	4,250	
Project management	-	-	-	-	-	-	-	-	-	-	-	-	-	7,590	
<b>Total ADB SRIWMSP Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>30,360</b>	
<b>GCF Lao PDR Emissions Reduction Programme REDD+</b>															
Output 1: Creation of an enabling environment for REDD+	-	-	-	-	-	-	-	-	-	-	-	-	-	4,322	
Output 2: Implementation of deforestation-free agriculture	-	-	-	-	-	-	-	-	-	-	-	-	-	5,575	
Output 3: Forest landscape management and forest and landscape restoration	-	-	-	-	-	-	-	-	-	-	-	-	-	14,256	
Output 4: Project management, coordination, monitoring and reporting	-	-	-	-	-	-	-	-	-	-	-	-	-	534	
<b>Total GCF ERP REDD+</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24,687</b>	

## D. Appendix 1.1 Summary Cost and Financing Tables

- Table 1: Components Project Cost Summary
- Table 2: Expenditure Accounts Project Cost Summary
- Table 3: Expenditure Accounts by Components – Totals including Contingencies (USD '000)
- Table 4: Expenditure Accounts by Components – Totals including Contingencies (LAK Million)
- Table 5: Project Components by Year -- Totals Including Contingencies (USD '000)
- Table 6: Project Components by Year -- Investment/Recurrent Costs (USD'000)
- Table 7: Expenditure Accounts by Year -- Totals Including Contingencies (USD '000)
- Table 8: Expenditure Accounts Breakdown (USD '000)
- Table 9: Components by Financiers (USD '000)
- Table 10: Disbursement Accounts by Financiers (USD '000)
- Table 11: Expenditure Accounts by Financiers (USD '000)
- Table 12: Local/Foreign/Taxes by Financiers (USD '000)
- Table 13: Allocation of Loan Proceed (Loan Agreement Schedule 2)

## E. Appendix 1.2 Detailed Cost Tables

- Table 1: Output 1.1 - District staff and village authorities trained
- Table 2: Output 1.2 - Water User Groups trained
- Table 3: Output 1.3 - Extension services provided
- Table 4: Output 1.4 - Farmer Group Investment Facility established
- Table 5: Output 2.1 - Multi-Stakeholder Platforms established
- Table 6: Output 2.2 - Agro-Enterprise Investment Facility established
- Table 7: Output 2.3 - Access improved
- Table 8: Output 3.1 - School-based nutrition interventions established
- Table 9: Output 3.2 - Increased dietary intake and improved dietary quality
- Table 10: Project management

## Appendix 1.1 Summary Cost and Financing Tables

Table 1: Components Project Cost Summary

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
**Components Project Cost Summary**

	(LAK Million)			(US\$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
<b>A. Intensified Agricultural Development</b>								
Output 1.1 - District staff and village authorities trained	16,657	691	17,348	1,945	81	2,026	4	7
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<b>Subtotal Intensified Agricultural Development</b>	139,245	2,604	141,849	16,259	304	16,563	2	59
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Output 2.1 - Multi-Stakeholder Platforms established	9,306	2,861	12,167	1,087	334	1,421	24	5
Output 2.2 - Agro-Enterprise Investment Facility established	23,967	-	23,967	2,799	-	2,799	-	10
Output 2.3 - Access improved	20,637	2,171	22,808	2,410	253	2,663	10	10
<b>Subtotal Value Chains Developed</b>	53,910	5,032	58,942	6,295	588	6,883	9	25
<b>C. Improved Nutritional Practices</b>								
Output 3.1 - School-based nutrition interventions established	3,361	510	3,871	392	60	452	13	2
Output 3.2 - Increased dietary intake and improved dietary quality /c	4,126	2,115	6,241	482	247	729	34	3
<b>Subtotal Improved Nutritional Practices</b>	7,487	2,626	10,112	874	307	1,181	26	4
D. Project Management	22,115	5,572	27,687	2,582	651	3,233	20	12
<b>Total BASELINE COSTS</b>	222,757	15,834	238,591	26,011	1,849	27,860	7	100
Physical Contingencies	6,263	885	7,148	731	103	835	12	3
Price Contingencies	23,596	977	24,573	1,496	59	1,555	4	6
<b>Total PROJECT COSTS</b>	252,616	17,696	270,312	28,239	2,011	30,250	7	109

\a Through public, private and farmer-to-farmer channels

\b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

\c For nutritionaly vulnerable groups.

Table 2: Expenditure Accounts Project Cost Summary

Expenditure Accounts Project Cost Summary	(LAK Million)			(US\$ '000)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
<b>I. Investment Costs</b>								
A. Works	19,423	2,158	21,581	2,268	252	2,520	10	9
B. Goods, Services & Inputs	1,867	467	2,334	218	55	273	20	1
C. Equipment and Materials	9,445	10,903	20,348	1,103	1,273	2,376	54	9
<b>D. Consultancies</b>								
<b>1. Technical Assistance</b>								
International Technical Assistance	-	1,713	1,713	-	200	200	100	1
National Technical Assistance	12,785	-	12,785	1,493	-	1,493	-	5
<b>Subtotal Technical Assistance</b>	12,785	1,713	14,498	1,493	200	1,693	12	6
E. Training and Workshops	18,717	-	18,717	2,186	-	2,186	-	8
F. Grants and Subsidies	127,257	-	127,257	14,860	-	14,860	-	53
<b>Total Investment Costs</b>	189,494	15,241	204,735	22,127	1,780	23,906	7	86
<b>II. Recurrent Costs</b>								
A. Salaries and allowances	22,003	-	22,003	2,569	-	2,569	-	9
B. Operating costs	11,260	593	11,853	1,315	69	1,384	5	5
<b>Total Recurrent Costs</b>	33,263	593	33,855	3,884	69	3,953	2	14
<b>Total BASELINE COSTS</b>								
Physical Contingencies	222,757	15,834	238,591	26,011	1,849	27,860	7	100
Price Contingencies	6,263	885	7,148	731	103	835	12	3
<b>Total PROJECT COSTS</b>	23,596	977	24,573	1,496	59	1,555	4	6
	252,616	17,696	270,312	28,239	2,011	30,250	7	109

Table 3: Expenditure Accounts by Components – Totals including Contingencies (USD '000)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agricultural  
**Expenditure Accounts by Years -- Totals Including Contingencies**  
 (US\$ '000)

	Totals Including Contingencies						
	2020	2021	2022	2023	2024	2025	Total
<b>I. Investment Costs</b>							
A. Works	-	1,493	1,523	-	-	-	3,015
B. Goods, Services & Inputs	7	82	90	91	17	15	302
C. Equipment and Materials	2,037	92	117	120	72	74	2,512
<b>D. Consultancies</b>							
<b>1. Technical Assistance</b>							
International Technical Assistance	61	41	42	21	22	22	209
National Technical Assistance	575	499	182	90	46	101	1,493
<b>Subtotal Technical Assistance</b>	635	540	224	112	68	123	1,702
E. Training and Workshops	444	647	571	563	154	141	2,521
F. Grants and Subsidies	627	2,757	3,492	3,562	3,337	2,079	15,853
<b>Total Investment Costs</b>	3,750	5,612	6,016	4,448	3,648	2,432	25,906
<b>II. Recurrent Costs</b>							
A. Salaries and allowances	355	470	479	488	498	440	2,730
B. Operating costs	265	296	264	267	273	249	1,613
<b>Total Recurrent Costs</b>	620	765	743	756	771	689	4,344
<b>Total PROJECT COSTS</b>	4,370	6,378	6,759	5,203	4,419	3,121	30,250

Table 4: Expenditure Accounts by Components – Totals including Contingencies (LAK Million)

Lao PDR Partnerships for Irrigation and Commercial Smallholder Agriculture <b>Expenditure Accounts by Components - 1</b> (LAK Million)											<b>Improved Nutritional Practices</b>		<b>Output 3.2 - Increased dietary intake and improved dietary quality</b>	
<b>Intensified Agricultural Development</b>														
	Output 1.1 - District staff and village authorities trained	Output 1.2 - Water User Groups trained	Output 1.3 - Extension services provided	Output 1.4 - Farmer Group Investment Facility established	Value Chains Developed			Output 2.2 - Agro-Enterprise Investment Facility established	Output 2.3 - Access improved	Output 3.1 - School-based nutrition interventions established				
					Output 2.1 - Multi-Stakeholder Platforms established									
<b>I. Investment Costs</b>														
A. Works	-	-	-	-				26,785	-	-	-	-	-	26,785
B. Goods, Services & Inputs	-	392	1,686	-				-	-	627	-	-	-	2,705
C. Equipment and Materials	4,583	-	1,491	869	1,653			-	-	739	4,001	8,611		21,946
<b>D. Consultancies</b>														
<b>1. Technical Assistance</b>														
International Technical Assistance	-	-	-	-	1,864			-	-	-	-	-	-	1,864
National Technical Assistance	822	2,980	3,124	-	-			894	2,227	230	2,507			12,785
<b>Subtotal Technical Assistance</b>	822	2,980	3,124	-	1,864			894	2,227	230	2,507			14,649
E. Training and Workshops	12,840	7,200	931	-	-			96	578	645	170			22,460
F. Grants and Subsidies	-	-	-	116,133	-	26,648		-	-	-	-	-		142,781
<b>Total Investment Costs</b>	18,245	10,573	7,232	117,002	3,516	26,648	27,775	4,170	4,876	11,287				231,325
<b>II. Recurrent Costs</b>														
A. Salaries and allowances	-	-	-	1,369	7,243	-	-	-	2,460	13,451				24,523
B. Operating costs	1,635	1,353	1,976	662	2,863	-	289	-	-	-	5,687			14,464
<b>Total Recurrent Costs</b>	1,635	1,353	1,976	2,031	10,105	-	289	-	2,460	19,138				38,987
<b>Total PROJECT COSTS</b>	19,880	11,925	9,208	119,033	13,622	26,648	28,064	4,170	7,336	30,426				270,312
Taxes	3,673	1,193	1,070	335	872	-	2,806	491	888	3,771				15,098
Foreign Exchange	783	146	1,405	592	3,065	-	2,693	605	2,601	5,806				17,696

Table 5: Project Components by Year -- Totals Including Contingencies (USD'000)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
**Project Components by Year -- Totals Including Contingencies**

	Totals Including Contingencies (US\$ '000)						
	2020	2021	2022	2023	2024	2025	Total
<b>A. Intensified Agricultural Development</b>							
Output 1.1 - District staff and village authorities trained	916	457	412	420	24	25	2,253
Output 1.2 - Water User Groups trained	277	278	198	181	195	216	1,345
Output 1.3 - Extension services provided /a	320	317	207	118	55	35	1,050
Output 1.4 - Farmer Group Investment Facility established /b	680	2,281	2,657	2,710	2,765	2,119	13,212
<b>Subtotal Intensified Agricultural Development</b>	2,192	3,334	3,473	3,428	3,039	2,394	17,859
<b>B. Value Chains Developed</b>							
Output 2.1 - Multi-Stakeholder Platforms established	427	224	228	211	216	220	1,526
Output 2.2 - Agro-Enterprise Investment Facility established	83	513	872	889	611	-	2,968
Output 2.3 - Access improved	75	1,560	1,528	-	-	-	3,164
<b>Subtotal Value Chains Developed</b>	585	2,296	2,628	1,101	827	220	7,658
<b>C. Improved Nutritional Practices</b>							
Output 3.1 - School-based nutrition interventions established	136	193	79	65	3	3	478
Output 3.2 - Increased dietary intake and improved dietary quality /c	131	143	155	143	122	124	819
<b>Subtotal Improved Nutritional Practices</b>	267	336	234	208	125	127	1,297
D. Project Management	1,325	412	424	466	429	380	3,436
<b>Total PROJECT COSTS</b>	4,370	6,378	6,759	5,203	4,419	3,121	30,250

/a Through public, private and farmer-to-farmer channels

/b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

/c For nutritionally vulnerable groups.

Table 6: Project Components by Year -- Investment/Recurrent Costs (USD'000)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
**Project Components by Year – Investment/Recurrent Costs**

	Totals Including Contingencies (US\$ '000)						
	2020	2021	2022	2023	2024	2025	Total
<b>A. Intensified Agricultural Development</b>							
<b>Output 1.1 - District staff and village authorities trained</b>							
Investment Costs	872	413	388	396	-	-	2,070
Recurrent Costs	44	44	23	24	24	25	183
<b>Subtotal Output 1.1 - District staff and village authorities trained</b>	<b>916</b>	<b>457</b>	<b>412</b>	<b>420</b>	<b>24</b>	<b>25</b>	<b>2,253</b>
<b>Output 1.2 - Water User Groups trained</b>							
Investment Costs	253	254	173	155	170	190	1,194
Recurrent Costs	24	24	25	25	26	26	151
<b>Subtotal Output 1.2 - Water User Groups trained</b>	<b>277</b>	<b>278</b>	<b>198</b>	<b>181</b>	<b>195</b>	<b>216</b>	<b>1,345</b>
<b>Output 1.3 - Extension services provided /a</b>							
Investment Costs	284	281	169	80	16	-	830
Recurrent Costs	36	36	37	38	39	35	220
<b>Subtotal Output 1.3 - Extension services provided</b>	<b>320</b>	<b>317</b>	<b>207</b>	<b>118</b>	<b>55</b>	<b>35</b>	<b>1,050</b>
<b>Output 1.4 - Farmer Group Investment Facility established /b</b>							
Investment Costs	644	2,245	2,620	2,672	2,726	2,079	12,985
Recurrent Costs	36	37	37	38	39	40	226
<b>Subtotal Output 1.4 - Farmer Group Investment Facility established</b>	<b>680</b>	<b>2,281</b>	<b>2,657</b>	<b>2,710</b>	<b>2,765</b>	<b>2,119</b>	<b>13,212</b>
<b>Subtotal Intensified Agricultural Development</b>	<b>2,192</b>	<b>3,334</b>	<b>3,473</b>	<b>3,428</b>	<b>3,039</b>	<b>2,394</b>	<b>17,859</b>
<b>B. Value Chains Developed</b>							
<b>Output 2.1 - Multi-Stakeholder Platforms established</b>							
Investment Costs	251	41	42	21	22	22	400
Recurrent Costs	175	183	186	190	194	198	1,126
<b>Subtotal Output 2.1 - Multi-Stakeholder Platforms established</b>	<b>427</b>	<b>224</b>	<b>228</b>	<b>211</b>	<b>216</b>	<b>220</b>	<b>1,526</b>
<b>Output 2.2 - Agro-Enterprise Investment Facility established</b>							
Investment Costs	83	513	872	889	611	-	2,968
<b>Output 2.3 - Access improved</b>							
Investment Costs	61	1,543	1,527	-	-	-	3,131
Recurrent Costs	14	17	2	-	-	-	33
<b>Subtotal Output 2.3 - Access improved</b>	<b>75</b>	<b>1,560</b>	<b>1,528</b>	-	-	-	<b>3,164</b>
<b>Subtotal Value Chains Developed</b>	<b>585</b>	<b>2,296</b>	<b>2,628</b>	<b>1,101</b>	<b>827</b>	<b>220</b>	<b>7,658</b>
<b>C. Improved Nutritional Practices</b>							
<b>Output 3.1 - School-based nutrition interventions established</b>							
Investment Costs	136	193	79	65	3	3	478
<b>Output 3.2 - Increased dietary intake and improved dietary quality /c</b>							
Investment Costs	88	99	110	97	75	76	545
Recurrent Costs	43	44	45	46	47	48	274
<b>Subtotal Output 3.2 - Increased dietary intake and improved dietary quality</b>	<b>131</b>	<b>143</b>	<b>155</b>	<b>143</b>	<b>122</b>	<b>124</b>	<b>819</b>
<b>Subtotal Improved Nutritional Practices</b>	<b>267</b>	<b>336</b>	<b>234</b>	<b>208</b>	<b>125</b>	<b>127</b>	<b>1,297</b>
<b>D. Project Management</b>							
Investment Costs	1,077	32	37	71	27	62	1,305
Recurrent Costs	248	380	387	395	403	318	2,131
<b>Subtotal Project Management</b>	<b>1,325</b>	<b>412</b>	<b>424</b>	<b>466</b>	<b>429</b>	<b>380</b>	<b>3,436</b>
<b>Total PROJECT COSTS</b>	<b>4,370</b>	<b>6,378</b>	<b>6,759</b>	<b>5,203</b>	<b>4,419</b>	<b>3,121</b>	<b>30,250</b>
Total Investment Costs	3,750	5,612	6,016	4,448	3,648	2,432	25,906
Total Recurrent Costs	620	765	743	756	771	689	4,344

/a Through public, private and farmer-to-farmer channels

/b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

/c For nutritionaly vulnerable groups.

Table 7: Expenditure Accounts by Year -- Totals Including Contingencies

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agricultural  
**Expenditure Accounts by Years -- Totals Including Contingencies**  
 (US\$ '000)

	Totals Including Contingencies						
	2020	2021	2022	2023	2024	2025	Total
<b>I. Investment Costs</b>							
A. Works	-	1,493	1,523	-	-	-	3,015
B. Goods, Services & Inputs	7	82	90	91	17	15	302
C. Equipment and Materials	2,037	92	117	120	72	74	2,512
<b>D. Consultancies</b>							
<b>1. Technical Assistance</b>							
International Technical Assistance	61	41	42	21	22	22	209
National Technical Assistance	575	499	182	90	46	101	1,493
<b>Subtotal Technical Assistance</b>	635	540	224	112	68	123	1,702
E. Training and Workshops	444	647	571	563	154	141	2,521
F. Grants and Subsidies	627	2,757	3,492	3,562	3,337	2,079	15,853
<b>Total Investment Costs</b>	3,750	5,612	6,016	4,448	3,648	2,432	25,906
<b>II. Recurrent Costs</b>							
A. Salaries and allowances	355	470	479	488	498	440	2,730
B. Operating costs	265	296	264	267	273	249	1,613
<b>Total Recurrent Costs</b>	620	765	743	756	771	689	4,344
<b>Total PROJECT COSTS</b>	4,370	6,378	6,759	5,203	4,419	3,121	30,250

Table 8: Expenditure Accounts Breakdown (USD '000)

	Expenditure Accounts Breakdown (US\$ '000)															Physical Cont. Plus Price Cont. on Base Costs + Price Cont. on Physical Cont.		
	Base Cost			Physical Contingencies			Price Contingencies			Total Incl. Cont.								
	Local		Local		Local		Local		Local		Local							
	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total		
<b>I. Investment Costs</b>																		
A. Works	252	2,016	252	2,520	38	302	38	378	12	94	12	117	302	2,412	302	3,015	2,622	393
B. Goods, Services & Inputs	55	191	27	273	3	10	1	14	3	11	2	16	60	211	30	302	288	14
C. Equipment and Materials	1,273	309	794	2,376	56	13	17	86	30	7	13	50	1,359	329	824	2,512	2,423	89
<b>D. Consultancies</b>																		
<b>1. Technical Assistance</b>																		
International Technical Assistance	200	-	-	200	-	-	-	-	9	-	-	9	209	-	-	209	209	-
National Technical Assistance	-	1,344	149	1,493	-	-	-	-	-	-	-	-	-	1,344	149	1,493	1,493	-
<b>Subtotal Technical Assistance</b>	200	1,344	149	1,693	-	-	-	-	9	-	-	9	209	1,344	149	1,702	1,702	-
E. Training and Workshops	-	1,967	219	2,186	-	197	22	219	-	105	12	116	-	2,268	252	2,521	2,291	229
F. Grants and Subsidies	-	14,860	-	14,860	-	-	-	-	-	994	-	994	-	15,853	-	15,853	15,853	-
<b>Total Investment Costs</b>	1,780	20,686	1,441	23,906	96	522	78	696	54	1,211	38	1,303	1,930	22,418	1,557	25,906	25,180	726
<b>II. Recurrent Costs</b>																		
A. Salaries and allowances	-	2,569	-	2,569	-	-	-	-	-	161	-	161	-	2,730	-	2,730	2,730	-
B. Operating costs	69	1,176	138	1,384	7	118	14	138	5	77	9	91	81	1,371	161	1,613	1,467	147
<b>Total Recurrent Costs</b>	69	3,746	138	3,953	7	118	14	138	5	238	9	252	81	4,102	161	4,344	4,197	147
<b>Total</b>	1,849	24,432	1,579	27,860	103	639	92	835	59	1,449	47	1,555	2,011	26,520	1,719	30,250	29,377	873

Table 9: Components by Financiers (USD '000)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture

**Components by Financiers**

(US\$ '000)

**A. Intensified Agricultural Development**

- Output 1.1 - District staff and village authorities trained
- Output 1.2 - Water User Groups trained
- Output 1.3 - Extension services provided /a
- Output 1.4 - Farmer Group Investment Facility established /b

	IFAD Loan		Other Financier		Government		Beneficiaries		Private sector		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Output 1.1 - District staff and village authorities trained	1,185	52.6	648	28.8	420	18.6	-	-	-	-	2,253	7.4
Output 1.2 - Water User Groups trained	788	58.6	423	31.4	134	10.0	-	-	-	-	1,345	4.4
Output 1.3 - Extension services provided /a	588	56.0	340	32.4	122	11.6	-	-	-	-	1,050	3.5
Output 1.4 - Farmer Group Investment Facility established /b	3,716	28.1	3,947	29.9	38	0.3	5,510	41.7	-	-	13,212	43.7
<b>Subtotal Intensified Agricultural Development</b>	<b>6,276</b>	<b>35.1</b>	<b>5,358</b>	<b>30.0</b>	<b>715</b>	<b>4.0</b>	<b>5,510</b>	<b>30.9</b>	<b>-</b>	<b>-</b>	<b>17,859</b>	<b>59.0</b>
<b>B. Value Chains Developed</b>												
Output 2.1 - Multi-Stakeholder Platforms established	1,300	85.2	126	8.3	99	6.5	-	-	-	-	1,526	5.0
Output 2.2 - Agro-Enterprise Investment Facility established	557	18.8	801	27.0	56	1.9	-	-	1,555	52.4	2,968	9.8
Output 2.3 - Access improved	1,777	56.2	1,071	33.8	316	10.0	-	-	-	-	3,164	10.5
<b>Subtotal Value Chains Developed</b>	<b>3,634</b>	<b>47.5</b>	<b>1,998</b>	<b>26.1</b>	<b>472</b>	<b>6.2</b>	<b>-</b>	<b>-</b>	<b>1,555</b>	<b>20.3</b>	<b>7,658</b>	<b>25.3</b>
<b>C. Improved Nutritional Practices</b>												
Output 3.1 - School-based nutrition interventions established	268	56.0	154	32.2	56	11.7	-	-	-	-	478	1.6
Output 3.2 - Increased dietary intake and improved dietary quality /c	550	67.2	169	20.7	99	12.1	-	-	-	-	819	2.7
<b>Subtotal Improved Nutritional Practices</b>	<b>818</b>	<b>63.1</b>	<b>323</b>	<b>24.9</b>	<b>155</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,297</b>	<b>4.3</b>
<b>D. Project Management</b>	<b>2,267</b>	<b>66.0</b>	<b>356</b>	<b>10.3</b>	<b>814</b>	<b>23.7</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3,436</b>	<b>11.4</b>
<b>Total PROJECT COSTS</b>	<b>12,995</b>	<b>43.0</b>	<b>8,035</b>	<b>26.6</b>	<b>2,155</b>	<b>7.1</b>	<b>5,510</b>	<b>18.2</b>	<b>1,555</b>	<b>5.1</b>	<b>30,250</b>	<b>100.0</b>

\a Through public, private and farmer-to-farmer channels

\b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

\c For nutritionally vulnerable groups.

Note on IFAD Loan: Assumes that discussions with GoL can resolve the closure of NSLCP-RFSP and transfer unspent funds to PICSA. In the event, this does not happen, the funding gap will be USD 8-9 million.

Table 10: Disbursement Accounts by Financiers (USD '000)

Lao PDR  
 Partnerships for Irrigation and Commercial  
**Disbursement Accounts by Financiers**

(US\$ '000)	IFAD Loan		Other Financier		Government		Beneficiaries		Private sector		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Works	1,683	55.8	1,031	34.2	302	10.0	-	-	-	-	3,015	10.0
2. Grants & Subsidies	4,011	25.3	4,722	29.8	56	0.4	5,510	34.8	1,555	9.8	15,853	52.4
3. Goods, Services & Inputs	98	32.3	174	57.7	30	10.0	-	-	-	-	302	1.0
4. Equipment and Materials	1,033	41.1	656	26.1	824	32.8	-	-	-	-	2,512	8.3
5. Consultancies	963	56.6	590	34.7	149	8.8	-	-	-	-	1,702	5.6
6. Training and Workshops	1,406	55.8	862	34.2	252	10.0	-	-	-	-	2,521	8.3
7. Recurrent Costs	3,802	87.5	-	-	542	12.5	-	-	-	-	4,344	14.4
<b>Total PROJECT COSTS</b>	<b>12,995</b>	<b>43.0</b>	<b>8,035</b>	<b>26.6</b>	<b>2,155</b>	<b>7.1</b>	<b>5,510</b>	<b>18.2</b>	<b>1,555</b>	<b>5.1</b>	<b>30,250</b>	<b>100.0</b>

Table 11: Expenditure Accounts by Financiers (USD '000)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture

(US\$ '000)	Expenditure Accounts by Financiers										For. Exch.	Local (Excl. Taxes)	Duties & Taxes		
	IFAD Loan		Other Financier		Government		Beneficiaries		Private sector						
Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%		
<b>I. Investment Costs</b>															
A. Works	1,683	55.8	1,031	34.2	302	10.0	-	-	-	-	3,015	10.0	302	2,412	302
B. Goods, Services & Inputs	98	32.3	174	57.7	30	10.0	-	-	-	-	302	1.0	60	211	30
C. Equipment and Materials	1,033	41.1	656	26.1	824	32.8	-	-	-	-	2,512	8.3	1,359	329	824
D. Consultancies															
1. Technical Assistance															
International Technical Assistance	130	62.0	80	38.0	0	-	-	-	-	-	209	0.7	209	-	-
National Technical Assistance	833	55.8	511	34.2	149	10.0	-	-	-	-	1,493	4.9	-	1,344	149
Subtotal Technical Assistance	963	56.6	590	34.7	149	8.8	-	-	-	-	1,702	5.6	209	1,344	149
E. Training and Workshops	1,406	55.8	862	34.2	252	10.0	-	-	-	-	2,521	8.3	-	2,268	252
F. Grants and Subsidies	4,011	25.3	4,722	29.8	56	0.4	5,510	34.8	1,555	9.8	15,853	52.4	-	15,853	-
<b>Total Investment Costs</b>	<b>9,193</b>	<b>35.5</b>	<b>8,035</b>	<b>31.0</b>	<b>1,613</b>	<b>6.2</b>	<b>5,510</b>	<b>21.3</b>	<b>1,555</b>	<b>6.0</b>	<b>25,906</b>	<b>85.6</b>	<b>1,930</b>	<b>22,418</b>	<b>1,557</b>
<b>II. Recurrent Costs</b>															
A. Salaries and allowances	2,622	96.0	-	-	108	4.0	-	-	-	-	2,730	9.0	-	2,730	-
B. Operating costs	1,180	73.1	-	-	434	26.9	-	-	-	-	1,613	5.3	81	1,371	161
<b>Total Recurrent Costs</b>	<b>3,802</b>	<b>87.5</b>	<b>-</b>	<b>-</b>	<b>542</b>	<b>12.5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4,344</b>	<b>14.4</b>	<b>81</b>	<b>4,102</b>	<b>161</b>
<b>Total PROJECT COSTS</b>	<b>12,995</b>	<b>43.0</b>	<b>8,035</b>	<b>26.6</b>	<b>2,155</b>	<b>7.1</b>	<b>5,510</b>	<b>18.2</b>	<b>1,555</b>	<b>5.1</b>	<b>30,250</b>	<b>100.0</b>	<b>2,011</b>	<b>26,520</b>	<b>1,719</b>

Table 12: Local/Foreign/Taxes by Financiers (USD '000)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture

**Local/Foreign/Taxes by Financiers**

(US\$ '000)	IFAD Loan		Other Financier		Government		Beneficiaries		Private sector		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
I. Foreign	1,247	62.0	749	37.3	15	0.8	-	-	-	-	2,011	6.6
II. Local (Excl. Taxes)	11,748	44.3	7,286	27.5	421	1.6	5,510	20.8	1,555	5.9	26,520	87.7
III. Taxes	-	-	-	-	1,719	100.0	-	-	-	-	1,719	5.7
<b>Total Project</b>	<b>12,995</b>	<b>43.0</b>	<b>8,035</b>	<b>26.6</b>	<b>2,155</b>	<b>7.1</b>	<b>5,510</b>	<b>18.2</b>	<b>1,555</b>	<b>5.1</b>	<b>30,250</b>	<b>100.0</b>

Table 13: Allocation of Loan Proceed (Loan Agreement Schedule 2)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture

**Allocation of Loan Proceeds**

IFAD Loan (US\$ '000)	Suggested Allocation of Loan Proceeds	
	Loan Amount	Disbursement %
1. Works	1,514	56
2. Equipment and Materials	929	41
3. Consultancies	867	57
4. Grants and Subsidies	3,610	25
5. Recurrent Costs	3,421	88
6. Training and Workshops	1,266	56
7. Goods, Services and Inputs	88	32
Unallocated	1,299	-
<b>Total</b>	<b>12,995</b>	<b>43</b>

Loan amounts financed by IFAD Loan

## F. Appendix 1.2 Detailed Cost Tables

Table 1. Output 1.1 - District staff and village authorities trained

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
 Table 1. Output 1.1 - District staff and village authorities trained

### Detailed Costs

	Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)					
		2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025
<b>I. Investment Costs</b>														
A. Support to District Level staff														
Local development TA /a	pers-month	48	-	-	-	-	-	48	2,000	96	-	-	-	-
B. Village Committee Strengthening														
1. Training of village committee by district staff														
Training organised at district level /b	no	19	-	-	-	-	-	19	1,000	19	-	-	-	-
2. Study tour for village committee	no	19	19	-	-	-	-	38	1,500	29	29	-	-	-
Subtotal Village Committee Strengthening										48	29	-	-	-
C. Vehicles and Equipment Local Facilitators														
Motorcycles for cluster facilitators /c	no	112	-	-	-	-	-	112	3,573	400	-	-	-	-
M&E equipment for cluster facilitators	person	112	-	-	-	-	-	112	1,000	112	-	-	-	-
Subtotal Vehicles and Equipment Local Facilitators										512	-	-	-	-
D. Local Development Facilitation														
Cluster Facilitators /d	pers-year	56	112	112	112	-	-	392	3,000	168	336	336	336	-
E. District Staff Allowances /e														
DSA for local development TA /f	days	720	-	-	-	-	-	720	10	7	-	-	-	-
Total Investment Costs										831	365	336	336	-
<b>II. Recurrent Costs</b>														
A. District Staff Allowances /g														
DSA for district staff /h	days	2,736	2,736	-	-	-	-	5,472	7	19	19	-	-	-
B. Operating Costs /i														
Motobike operating and maintenance /j	lumpsum									20	20	20	20	120
Total Recurrent Costs										39	39	20	20	20
Total										870	404	356	356	20,26

\a 1 per province

\b Includes hired trainer fees and transportation costs.

\c 3 villages per facilitator requires 112, to be distributed proportionally over 19 districts.

\d 3 villages per facilitator requires 112, to be distributed proportionally over 19 districts.

\e For village level planning.

\f 1 person x 15 days per month x 12 months per year x 4 provinces = 720 days @USD 7 + 3 assuming occasional nightshifts.

\g For village level planning.

\h For village planning: 2 DPV/district @ 6 days/month.

\i Local Development Facilitators

\j Estimated at 5% of gross investment cost annually.

Table 2. Output 1.2 - Water User Groups trained

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
 Table 2, Output 1.2 - Water User Groups trained  
 Detailed Costs

	Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)					
		2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025
<b>I. Investment Costs</b>														
<b>A. WUG Trainings</b>														
1. WUG establishment or improvement														
Training of WUG /a	WUG	220	220	-	-	-	-	440	500	110	110	-	-	-
2. WUG Support														
Seasonal planning and closing of accounts	WUG	-	-	220	220	220	220	880	500	-	-	110	110	110
<b>Subtotal WUG Trainings</b>										110	110	110	110	110
<b>B. Support to Irrigation Units</b>														
1. Technical Assistance														
WUG Development and O&M Specialist	pers-month	6	12	-	-	-	-	18	3,000	18	36	-	-	-
On-farm Water Management Specialist	pers-month	6	12	-	-	-	-	18	3,000	18	36	-	-	-
International Irrigation O&M Specialist /b	pers-month	4	2	2	1	1	2	12	20,000	80	40	40	20	20
<b>Subtotal Technical Assistance</b>										116	112	40	20	20
2. Training of DAFO Irrigation Unit														
IMT / WUG Development and Administration	DAFO	9	10	-	-	-	-	19	500	5	5	-	-	-
On-farm Water Management	DAFO	9	10	-	-	-	-	19	500	5	5	-	-	-
Irrigation O&M	DAFO	9	10	-	-	-	-	19	500	5	5	-	-	-
<b>Subtotal Training of DAFO Irrigation Unit</b>										14	15	-	-	-
<b>Subtotal Support to Irrigation Units</b>										130	127	40	20	20
<b>C. Knowledge Management and Irrigation Policy</b>														
1. Field studies	studies	-	-	1	1	3	-	5	5,000	-	-	5	5	15
2. National conference										-	-	-	-	-
Preparation and reporting	lumpsum									-	-	-	-	3
Conference costs	lumpsum									-	-	-	-	10
<b>Subtotal National conference</b>										-	-	-	-	13
<b>Subtotal Knowledge Management and Irrigation Policy</b>										-	-	5	5	15
<b>Total Investment Costs</b>										240	237	155	135	145
<b>II. Recurrent Costs</b>														
DSAs DAFO / DOI Staff /c	day	3,072	3,072	3,072	3,072	3,072	3,072	18,432	7	22	22	22	22	22
<b>Total Recurrent Costs</b>										22	22	22	22	22
<b>Total</b>										261	259	177	157	167
														1,203

a Structure, administration, O&M etc.

b One year contract

c Based on GoL rates (Decree 2066, 25 June 2015), 8 days per month, overnight at village, DSA for 32 staff to be proportionally allocated to 19 Districts per district.

Table 3. Output 1.3 - Extension services provided

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agric  
 Table 3. Output 1.3 - Extension services provided /a

**Detailed Costs**

	Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)					
		2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025
<b>I. Investment Costs</b>														
<b>A. Public Extension Services</b>														
<b>1. Training District Extension Services</b>														
Training for district extension staff	course	19	19	-	-	-	-	38	1,000	19	19	-	-	-
no	no	38	-	-	-	-	-	38	3,573	136	-	-	-	136
2. Motorcycles for District Extension Staff /b														
3. Equipment for District Extension Staff	district	19	-	-	-	-	-	19	1,000	19	-	-	-	19
4. Agricultural Extension Expert /c	pers-month	114	228	114	-	-	-	456	800	91	182	91	-	365
<b>Subtotal Public Extension Services</b>														
<b>B. Private Extension Services</b>														
<b>1. Training by input and equipment suppliers</b>														
Trainings organised at district level	no	-	19	19	19	19	-	76	700	-	13	13	13	53
C. Farmers groups learning exchange visits /d	visit	-	38	38	38	38	-	114	1,500	-	57	57	57	171
<b>Total Investment Costs</b>														
<b>II. Recurrent Costs</b>														
<b>A. Public Extension Services</b>														
DSA district extension staff /e	day	3,072	3,072	3,072	3,072	3,072	3,072	18,432	7	22	22	22	22	129
Motorcycle operating /f	each							7	7	7	7	7	7	41
Provincial staff monitoring missions /g	each	19	19	19	19	19	-	95	200	4	4	4	4	19
<b>Total Recurrent Costs</b>														
<b>Total</b>										32	32	32	32	189
										297	304	194	102	45
										45	28	45	28	971

/a Through public, private and farmer-to-farmer channels.

/b 2 per district.

/c 1 per district 2 year contract.

/d Exposure and groups exchange visits (2 per districts).

/e Based on GoL rates (Decree 2066, 25 June 2015), 8 days per month, overnight at village, DSA for 32 staff to be proportionally allocated to 19 Districts per district.

/f Fuel, maintenance and insurance at 5% per annum of the investment cost.

/g PAFO staff monitoring missions to the districts.

Table 4. Output 1.4 - Farmer Group Investment Facility established

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
 Table 4. Output 1.4 - Farmer Group Investment Facility established  
 Detailed Costs

	Unit	Quantities						Total	Unit Cost (US\$)	Base Cost (US\$ '000)							
		2020	2021	2022	2023	2024	2025			2020	2021	2022	2023	2024	2025	Total	
<b>I. Investment Costs</b>																	
<b>A. Farmer Group Investment Facility</b>																	
Infrastructure investments grants	group	-	70	70	70	70	70	350	11,460	-	802	802	802	802	802	4,011	
Production package grants	group	40	120	150	150	150	90	700	8,010	320	961	1,202	1,202	1,202	721	5,607	
Capacity building grants	group	40	120	150	150	150	90	700	600	24	72	90	90	90	54	420	
Model and Young Farmers grants	group	40	120	150	150	150	90	700	1,870	75	224	281	281	281	168	1,309	
<b>Subtotal Farmer Group Investment Facility</b>										419	2,060	2,374	2,374	2,374	1,745	11,347	
<b>B. Vehicles and equipment</b>																	
Motorbikes	no	19	-	-	-	-	-	19	3,573	68	-	-	-	-	68	69	
Office equipment	no	19	-	-	-	-	-	19	1,500	29	-	-	-	-	29	32	
<b>Subtotal Vehicles and equipment</b>										96	-	-	-	-	-	96	
C. Farmer Group Investment Advisors /a	pers-year	16	16	16	16	16	16	96	7,200	115	115	115	115	115	691	116	
D. Events	district	19	19	19	19	19	19	114	200	4	4	4	4	4	23	4	
<b>Total Investment Costs</b>										635	2,179	2,493	2,493	2,493	1,864	12,157	
<b>II. Recurrent Costs</b>																	
<b>A. Salaries and Allowances</b>																	
Counterpart DAFO Allowances /b	pers-day lumpsum	3,420	3,420	3,420	3,420	3,420	3,420	20,520	7	24	24	24	24	24	144	24	
B. Motorcycle Operation and Maintenance /c										3	3	3	3	3	3	20	
<b>C. Other Operating Costs</b>																	
Office costs	district	19	19	19	19	19	19	114	375	7	7	7	7	7	43	8	
<b>Total Recurrent Costs</b>										34	34	34	34	34	207	36	
<b>Total</b>										669	2,213	2,528	2,528	2,528	1,899	12,364	680

<sup>a</sup> Four advisors per Province stationed at a District, shared over a total of 19 Districts.

<sup>b</sup> estimated as 16 counterparts doing 15 field days per month; to be allocated proportionally over 19 districts.

<sup>c</sup> Estimated at 5% of gross investment cost annually.

Table 5. Output 2.1 - Multi-Stakeholder Platforms established

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
 Table 5. Output 2.1 - Multi-stakeholder platforms established

**Detailed Costs**

	Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)					
		2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025
<b>I. Investment Costs</b>														
A. International Value Chain Expert	pers-month	3	2	2	1	1	1	10	20,000	60	40	40	20	20
B. Vehicles and Equipment														200
1. Vehicles	no	4	-	-	-	-	-	4	45,530	182	-	-	-	-
2. Equipment /a	no	4	-	-	-	-	-	4	1,500	6	-	-	-	6
<b>Subtotal Vehicles and Equipment</b>										188	-	-	-	188
<b>Total Investment Costs</b>										248	40	40	20	20
<b>II. Recurrent Costs</b>														
A. Salaries and Allowances	pers-year	4	4	4	4	4	4	24	30,000	120	120	120	120	120
Agro_Enterprise Advisors salaries /b	day	360	720	720	720	720	720	3,960	10	4	7	7	7	40
DSA Government Counterparts POIC /c										124	127	127	127	127
<b>Subtotal Salaries and Allowances</b>										127	127	127	127	760
B. Office expenses /d	lumpsum									6	6	6	6	36
C. Vehicle operating and maintenance /e	lumpsum									9	9	9	9	55
D. VC Stakeholder Platform Facilitation Events /f	events	76	76	76	76	76	76	456	400	30	30	30	30	182
<b>Total Recurrent Costs</b>										169	173	173	173	173
<b>Total</b>										417	213	213	193	193
														1,421

<sup>a</sup> Laptop computers and printers

<sup>b</sup> Sourced regionally (Lao nationals preferred)

<sup>c</sup> 1 person x 15 days per month x 12 months per year x 4 provinces = 720 days.

<sup>d</sup> Lump sum USD 1,000 per year per province.

<sup>e</sup> Estimated at 5% of gross investment cost annually.

<sup>f</sup> Four per district per year.

Table 6. Output 2.2 - Agribusiness Investment Facility established

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agricu  
 Table 6. Output 2.2 - Agro-Enterprise Investment Facility estab  
**Detailed Costs**

Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)						
	2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025	Total
<b>I. Investment Costs /a</b>														
<b>A. Agro_Enterprise Investment Facility Grant Fund</b>														
1. Category I: Up to USD 2,500	no	5	20	30	30	30	-	115	3,125	16	63	94	94	- 359
2. Category II: USD 2,500 to 15,000.	no	5	20	30	30	25	-	110	11,000	55	220	330	275	- 1,210
3. Category III: USD 15,000 to 50,000.	no	-	5	10	10	5	-	30	35,000	-	175	350	175	- 1,050
4. Grants for capacity building	no	15	50	70	70	19	-	224	800	12	40	56	56	- 179
<b>Total</b>										83	498	830	830	- 2,799

<sup>a</sup> The implementation support costs for Output 2.2 are included in Output 2.1.

Table 7. Output 2.3 - Access improved

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder

Table 7. Output 2.3 - Access improved

**Detailed Costs**

Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)						
	2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025	Total
<b>I. Investment Costs</b>														
<b>A. Planning of Access Tracks</b>														
Rural road specialist (national TA)	pers-month	12	6	-	-	-	18	3,000	36	18	-	-	-	54
<b>B. Access Track Maintenance</b>														
Training for village track maintenance group	village	-	12	7	-	-	19	500	-	6	4	-	-	10
<b>C. Village to Village Access Road</b>														
Survey and design of access track	km	252	252	-	-	-	504	100	25	25	-	-	-	50
Village to village access road /a	km	-	252	252	-	-	504	5,000	-	1,260	1,260	-	-	2,520
<b>Subtotal Village to Village Access Road</b>									25	1,285	1,260	-	-	2,570
<b>Total Investment Costs</b>									61	1,309	1,264	-	-	2,634
<b>II. Recurrent Costs</b>														
<b>A. Consultations and monitoring</b>														
DSA for Village / kumban consultations /b	days	1,824	1,824	-	-	-	3,648	7	13	13	-	-	-	26
Monitoring by district committee	district	-	12	7	-	-	19	200	-	2	1	-	-	4
<b>Total Recurrent Costs</b>									13	15	1	-	-	29
<b>Total</b>									74	1,324	1,265	-	-	2,663

<sup>a</sup> Around 13 km per district in 2021 and 13 km per district in 2022; 4 tracks rehabilitated per district (6-7km each).

<sup>b</sup> Assuming 2 staffs @ an average of 4 days per month over the 2-year period, for each district.

Table 8. Output 3.1 - School-based nutrition interventions established

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
 Table 8. Output 3.1 - School-based nutrition interventions established  
**Detailed Costs**

	Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)					
		2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025
<b>I. Investment Costs</b>														
A. Collaboration with nutrition partners /a	lumpsum	1	1	-	-	-	-	2	100,000	100	100	-	-	-
<b>B. Establishment of school gardens at model schools</b>														
Water supply system for gardens /b	gardens	8	24	24	24	-	-	80	500	4	12	12	12	-
PICSA contribution to garden development/improvement	gardens	16	48	48	48	-	-	160	250	4	12	12	12	-
Agricultural inputs	no	16	48	48	48	-	-	160	150	2	7	7	7	-
<b>Subtotal Establishment of school gardens at model schools</b>										10	31	31	31	-
<b>C. Training</b>														
Training for teacher (gardening)	training	16	48	48	48	-	-	160	150	2	7	7	7	-
Training for teacher (nutrition)	training	16	48	48	48	-	-	160	75	1	4	4	4	-
Training for pupils	schools	10	30	30	30	30	30	160	75	1	2	2	2	2
Training of cooks	session	16	48	48	48	-	-	160	50	1	2	2	2	-
<b>Subtotal Training</b>										5	15	15	15	2
D. Equipment for school kitchens	kit	16	48	48	48	-	-	160	200	3	10	10	10	-
E. Nutrition Advisor /c	pers-month	6	12	6	-	-	-	24	2,500	15	30	15	-	-
<b>Total</b>										134	186	71	56	2
														452

\a Save the Children in Luang Prabang Province

\b Assuming that half the gardens need an investment in the water supply.

\c National technical assistance.

Table 9. Output 3.2 - Increased dietary intake and improved dietary quality

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
 Table 9. Output 3.2 - Increased dietary intake and improved dietary quality/a  
 Detailed Costs

	Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)					
		2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025
<b>I. Investment Costs</b>														
A. Identification of nutritionally most vulnerable groups														
Nutrition assessment/KAP survey	no	1	-	-	-	-	-	1	25,000	25	-	-	-	25
District meetings/presentation of results	no	19	-	-	-	-	-	19	100	2	-	-	-	2
<b>Subtotal Identification of nutritionally most vulnerable groups</b>										27	-	-	-	27
B. Equipment														
Agricultural inputs	kit	200	300	400	400	300	300	1,900	200	40	60	80	80	380
C. Training														
Nutrition Information Sessions	session	76	76	76	76	76	76	456	30	2	2	2	2	14
Training of extension officers	training	114	228	114	-	-	-	456	110	13	25	13	-	50
<b>Subtotal Training</b>										15	27	15	2	2
<b>Total Investment Costs</b>										82	87	95	82	62
<b>II. Recurrent Costs</b>														
A. Allowances														
DSA/b	day	6,144	6,144	6,144	6,144	6,144	6,144	36,864	7	43	43	43	43	258
<b>Total Recurrent Costs</b>										43	43	43	43	258
<b>Total</b>										125	130	138	125	105
										105	105		729	

a For nutritionally vulnerable groups.

b Assumes 64 staff visiting villages for 8 days per month; to be allocated proportionately to the Districts.

Table 10. Project Management

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agr  
 Table 10. Project Management

**Detailed Costs**

	Unit	Quantities						Unit Cost (US\$)	Base Cost (US\$ '000)					
		2020	2021	2022	2023	2024	2025		2020	2021	2022	2023	2024	2025
<b>I. Investment Costs</b>														
<b>A. Vehicles and Equipment</b>														
<b>1. Vehicles</b>														
4WDs DAFOs - Start Up /a	no	6	-	-	-	-	-	6	45,530	273	-	-	-	-
4WDs DAFOs	no	13	-	-	-	-	-	13	45,530	592	-	-	-	-
<b>Subtotal Vehicles</b>														
<b>2. Office Equipment</b>														
Computers and printers	set									45	-	-	-	-
Photocopier	lumpsum									28	-	-	-	-
Furniture	lumpsum									35	-	-	-	-
<b>Subtotal Office Equipment</b>										108	-	-	-	-
<b>Subtotal Vehicles and Equipment</b>										973	-	-	-	-
<b>B. Training, Capacity Building and Studies</b>														
<b>1. SAGE/ACCPAC software</b>														
SAGE/ACCPAC set-up and upgrade	lumpsum									10	-	-	-	-
Training	lumpsum									10	10	10	-	-
Closing training	lumpsum									-	-	-	-	-
<b>Subtotal SAGE/ACCPAC software</b>										20	10	10	-	-
<b>2. Training/capacity building</b>														
Start up workshop	lumpsum									7	-	-	-	-
Orientation training PICSA staff	lumpsum									7	-	-	-	-
PICSA management meetings /b	meeting	6	12	12	12	12	12	66	50	0	1	1	1	1
<b>Subtotal Training/capacity building</b>										14	1	1	1	1
<b>3. Studies and Surveys</b>														
Baseline survey	lumpsum									25	-	-	-	-
Mid-term survey	lumpsum									-	-	-	15	-
End-line Survey	lumpsum									-	-	-	-	25
Annual Outcome Surveys	each	-	-	1	1	1	1	4	4,375	-	4	4	4	18
ORMS	each	1	-	-	1	-	-	2	4,375	4	-	4	-	9
Impact assessment survey	each	-	-	-	1	-	-	1	25,000	-	-	25	-	25
<b>Subtotal Studies and Surveys</b>										29	-	4	49	4
<b>4. Knowledge Management</b>														
Knowledge management products	set	-	1	1	1	1	1	5	2,500	-	3	3	3	13
<b>Subtotal Training, Capacity Building and Studies</b>										64	13	17	52	42
<b>C. Consulting Services</b>														
Annual audits /c	lumpsum									15	15	15	15	90
Translation services	lumpsum									4	4	4	4	24
<b>Subtotal Consulting Services</b>										19	19	19	19	114
<b>Total Investment Costs</b>										1,055	32	36	71	61
														1,283

Table 10. Project Management (Continued)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agr  
 Table 10. Project Management  
**Detailed Costs**

	Unit	Quantities							Unit Cost (US\$)	Base Cost (US\$ '000)							
		2020	2021	2022	2023	2024	2025	Total		2020	2021	2022	2023	2024	2025	Total	
<b>II. Recurrent Costs</b>																	
<b>A. Salary &amp; Office Operating Costs</b>																	
<b>1. Staff salary: PGT Vientiane /d</b>																	
Project Director	pers-month	6	12	12	12	12	6	60	300	2	4	4	4	4	2	18	
Project Coordinator	pers-month	12	12	12	12	12	12	72	5,000	60	60	60	60	60	60	360	
Finance Manager	pers-month	6	12	12	12	12	6	60	2,500	15	30	30	30	30	15	150	
Finance Assistant	pers-month	6	12	12	12	12	6	60	800	5	10	10	10	10	5	48	
Procurement Officer	pers-month	6	12	12	12	12	6	60	2,500	15	30	30	30	30	15	150	
M&E Officer /e	pers-month	6	12	12	12	12	6	60	1,250	8	15	15	15	15	8	75	
<b>Subtotal Staff salary: PGT Vientiane</b>										104	148	148	148	148	104	801	
<b>2. Staff salary: PPIT Luang Prabang /f</b>																	
Provincial Director	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
Accountant	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
<b>Subtotal Staff salary: PPIT Luang Prabang</b>										4	8	8	8	8	4	42	
<b>3. Staff salary: PPIT Xieng Khouang</b>																	
Provincial Director	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
Accountant	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
<b>Subtotal Staff salary: PPIT Xieng Khouang</b>										4	8	8	8	8	4	42	
<b>4. Staff salary: PPIT Houapang</b>																	
Provincial Director	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
Accountant	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
<b>Subtotal Staff salary: PPIT Houapang</b>										4	8	8	8	8	4	42	
<b>5. Staff salary: PPIT Xayaboury</b>																	
Provincial Director	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
Accountant	pers-month	6	12	12	12	12	6	60	350	2	4	4	4	4	2	21	
<b>Subtotal Staff salary: PPIT Xayaboury</b>										4	8	8	8	8	4	42	
<b>6. Staff salary: Districts</b>																	
Accountant	pers-month	114	228	228	228	228	228	228	1,254	350	40	80	80	80	80	439	
<b>Subtotal Salary &amp; Office Operating Costs</b>										161	262	262	262	262	201	1,408	
<b>B. Vehicle Operating and Maintenance /g</b>																	
4WDs DAFOs	lumpsum									14	14	14	14	14	14	82	
<b>C. Operating Costs Office and Travel</b>																	
Office accommodation /h	lumpsum	12	12	12	12	12	12	12	72	3,600	43	43	43	43	43	259	
Travel expenses /i	lumpsum	0.5	1	1	1	1	1	0.5	5	15,000	8	15	15	15	8	75	
<b>Subtotal Operating Costs Office and Travel</b>										51	58	58	58	58	51	334	
<b>D. Operating Costs Start Up /j</b>										8	-	-	-	-	-	8	
<b>E. Operating Costs Other /k</b>										5	25	25	25	25	13	118	
<b>Total Recurrent Costs</b>										238	359	359	359	359	278	1,950	
<b>Total</b>										1,293	391	395	430	385	339	3,233	

Table 10. Project Management (Continued)

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agr  
 Table 10. Project Management  
**Detailed Costs**

Unit	Quantities						Total	Unit Cost (US\$)	Base Cost (US\$ '000)					
	2020	2021	2022	2023	2024	2025			2020	2021	2022	2023	2024	2025

\a An initial batch of six vehicles to be purchased for startup operations.

\b To be allocated to central, provincial and district level.

\c National TA.

\d PGT - Programme Governance Team

\e Cost included represents IFAD's share (50%) of the position.

\f PPIT - Provincial Project Implementation Team

\g Budgeted at 5% of the gross cost per annum.

\h Vientiane, Provinces and Districts

\i To cover DSAs.

\j Including costs associated with the recruitment of staff.

\k Various costs including: Telephone, postage, fax, electricity, printing & stationery, advertising, security, casual staff, computer consumables and maintenance.



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 4: Economic and Financial Analysis**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



## Annex 4: Economic and Financial Analysis

### EFA Summary Page

Table A – Household Incremental Income for PICSA Farm Models

Project Year	Household Incremental Income (LAK '000)			
	Rainfed Paddy	Rainfed Paddy and Upland	Irrigated Paddy	Irrigated Paddy and Upland
PY1	-1,331	-5,132	-3,562	-9,539
PY2	458	1,762	-1,500	-1,037
PY3	1,274	5,496	2,612	5,956
PY4	1,798	2,424	6,233	6,072
PY5	2,492	13,041	7,746	18,102
PY6	2,372	15,789	8,072	20,977
PY7	2,372	14,659	8,072	19,847
PY8	2,072	20,289	8,072	25,477
PY9	2,492	23,991	7,301	29,052
PY10 +	2,372	21,459	8,072	26,647
NPV @ 12% <sup>\1</sup>	12,590	99,930	39,580	121,860

<sup>\1</sup> 12% discount rate equivalent to weighted average interest rate of term deposits

Table B - Project Cost and Log Frame Indicators

Total Project Costs (USD m): 30.07		IFAD loan: (USD m): 21.00	
Target population <sup>\1</sup>	People: 213,200	Households: 41,000	
Cost per targeted population	98 USD / person	512 USD / HH	
Primary beneficiaries <sup>\2</sup>	People: 170,560	Households: 32,800	Farmers Groups: 700 @ 20 HH per group
Cost per primary beneficiary <sup>\3</sup>	123 USD / person	640 USD / HH	Participation rate: 80%
Components / Outputs and Cost (USD M)		Selected Outputs and Indicators	
<b>A. Intensified Agricultural Development</b>			
1.1 - District staff and village authorities trained	2.03	19	# Districts trained
1.2 - Water User Groups trained	1.20	438	# Groups supported
1.3 - Extension services provided	0.97	28,000	# Persons trained
1.4 - Farmer Group Invest. Facility established	12.36	2,450	# Rural producers' organisations supported
<b>B. Value Chain Developed</b>			
2.1 - Multi-Stakeholder Platforms established	1.42	341	# MSP meetings held
2.2 - Agro-Enterprise Invest. Facility established	2.80	255	# Ent. Accessing services
2.3 - Access improved	2.66	504	# kms of

			new/rehabilitated roads managed and maintained by communities
C. Improved Nutritional Practices			
3.1 - School-based nutrition interventions established	0.45	169	# Schools preparing meals based on adequate nutritional value
3.2 - Increased dietary intake and improved dietary quality	0.73	1,700	# HH provided with targeted support to improve diets

<sup>11</sup> Total targeted population assumes population in 19 Districts impacted from better market linkages, better connectivity and enhanced water management. Primary beneficiaries are those accessing the local economic development matching grants. The Economic and Financial Analysis assesses the effectiveness and efficiency of these grants.

<sup>12</sup> Direct beneficiaries - assumes 5.2 persons per household.

<sup>13</sup> IFAD loan (USD 21 million) / Project target HHs (i.e. reached by project interventions)

Table C – Selected Financial Analysis Assumptions

Parameters				
Selected Outputs	Av. Yield <sup>11</sup>	Price (LAK)	Selected Inputs	Price (LAK)
Irrigated Paddy	3.5 t/ha	2,000 / kg	Improved paddy seed	7,000 / kg
Ground nuts	1.2 t/ha	4,000 / kg	Manure	200 / kg
Garlic	2.0 t/ha	6,500 / kg	Urea	5,200 / kg
Maize	4.5 t/ha	1,500 / kg	Lime	2,000 / kg
Oranges	8 t/ ha	5,000 / kg	Hired Labour	45,000 / per-day

<sup>11</sup> Full development

Table D – Household, Beneficiaries and Phasing

	PY 1	PY 2	PY 3	PY 4	PY 5	PY 6
Total Households <sup>11</sup>						
Incremental	1,643	2,824	3,594	4,056	3,029	2,054
Cumulative	1,643	4,467	8,061	12,117	15,146	17,200
Households participating <sup>12</sup>						
Incremental	1,310	2,260	2,870	3,240	2,420	1,640
Cumulative	1,310	3,570	6,440	9,680	12,100	13,740
Beneficiaries participating <sup>13</sup>						
Incremental	6,812	11,752	14,924	16,848	12,584	8,528
Cumulative	6,812	18,564	33,488	50,336	62,920	71,448

<sup>11</sup> Primary beneficiaries – i.e. taking up the matching grants of Output 1.4 - Farmer Group Investment Facility only.

<sup>12</sup> 80% participation rate.

<sup>13</sup> Assuming 5.2 persons per household.

Table E – Key Economic Analysis Assumptions

Parameter	Value	Remarks
Official exchange rate	8,564	USD 1 = LAK 8,564 Bank of Lao PDR reference rate 15 March 2019*
Shadow exchange rate factor (SERF)	1.02	Project costs are estimated in USD and converted using the Costab software to economic terms using the SERF. All

Parameter	Value	Remarks
		financial costs are converted into economic costs through the elimination of subsidies, duties and taxes
Shadow wage rate factor (SWRF)	85%	Applied to unskilled wage rates to reflect the relative abundance of unskilled labour, though in some locations at sometimes of year this may undervalue unskilled labour due to the temporary migration of labour to other parts of Lao PDR or abroad.
Economic opportunity cost of capital	9%	Hurdle rate for the economic internal rate of return
Project life	25	Twenty 25 years has been assumed for the project life in line with the investment lifecycle.

\* Bank of Lao PDR <https://www.bol.gov.la/en/referenceRate>

Table F - Project Economic Cash Flow (LAK million)

Selected years	Incremental benefits	Invest	Recurrent	Farm investment <sup>\1</sup>	Post AE Recurrent <sup>\2</sup>	Post Rural Access <sup>\3</sup>	Total incremental costs	Net incremental benefits
1	(10,385)	22,887	(33,272)	(10,385)	22,887	(33,272)	(10,385)	22,887
2	(19,622)	38,875	(58,497)	(19,622)	38,875	(58,497)	(19,622)	38,875
3	(22,999)	38,482	(61,481)	(22,999)	38,482	(61,481)	(22,999)	38,482
4	(23,196)	25,800	(48,996)	(23,196)	25,800	(48,996)	(23,196)	25,800
5	(5,032)	23,777	(28,809)	(5,032)	23,777	(28,809)	(5,032)	23,777
6	17,753	15,755	1,998	17,753	15,755	1,998	17,753	15,755
7	41,187	6,830	34,357	41,187	6,830	34,357	41,187	6,830
8	60,241	6,830	53,411	60,241	6,830	53,411	60,241	6,830
9	74,122	6,830	67,292	74,122	6,830	67,292	74,122	6,830
10...	74,268	6,830	67,438	74,268	6,830	67,438	74,268	6,830
15...	84,277	6,830	77,447	84,277	6,830	77,447	84,277	6,830
20...	83,797	6,830	76,967	83,797	6,830	76,967	83,797	6,830
25	85,506	6,830	78,676	85,506	6,830	78,676	85,506	6,830
							ENPV @ 9% LAK million	183,059
							ENPV @ 9% USD million	21.00
							EIRR	16.4%
							BCR	2.12
							Switching value benefits	(53%)
							Switching value costs	112%

<sup>\1</sup> Adjustment for Farmer Investment Packages accounted for in farm models to avoid double counting.

<sup>\2</sup> Provision for ongoing recurrent expenditures post agro-enterprise investment

<sup>\3</sup> Provision to account for ongoing rural access maintenance.

Graph G – PICSA Incremental Net Cash Flow

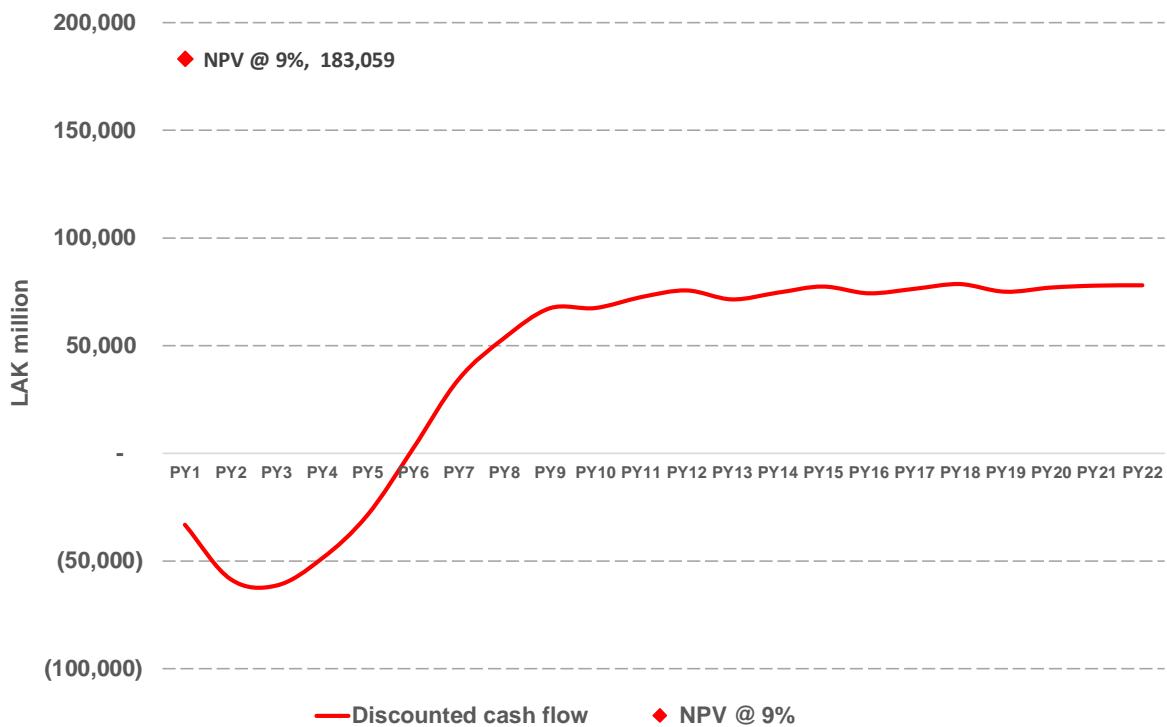


Table H – PICSA Sensitivity Analysis

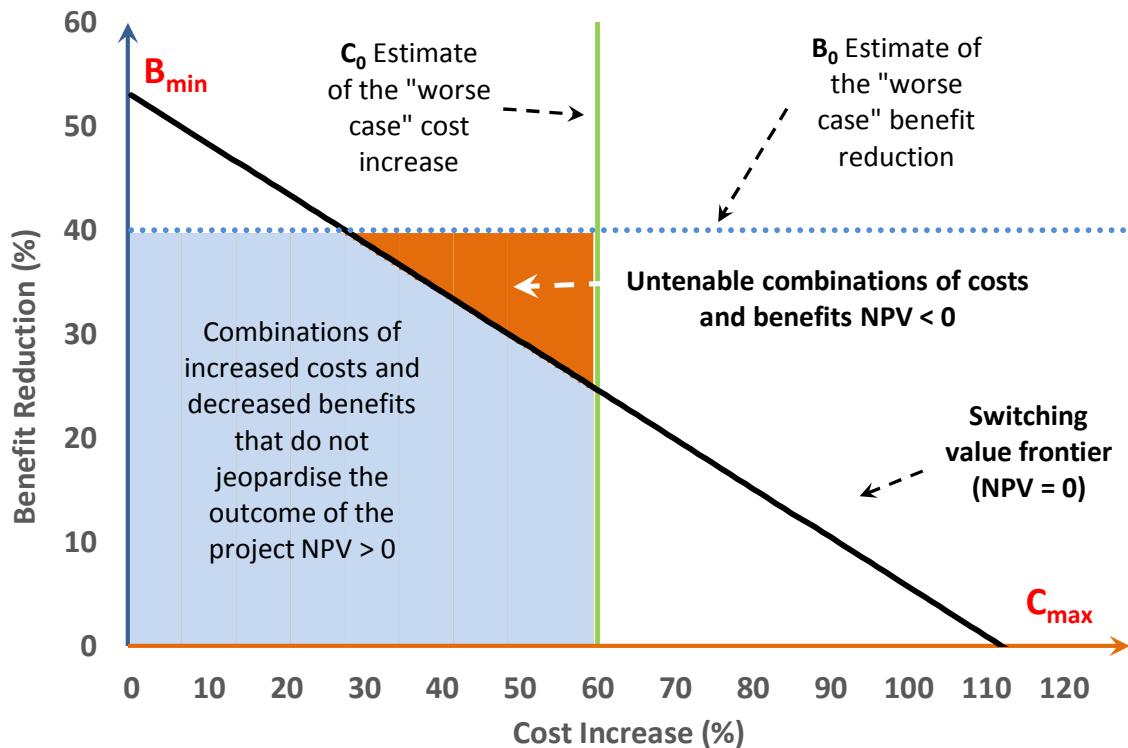
Scenario			Link to Risk Matrix Issues	EIRR <sup>1</sup>	NPV (LAK m) <sup>2</sup>
Base Case				16.4%	183,060
% to Base Case					
Project Costs	Incr'l Benefits	Benefits delayed			
+ 10%			Increase in the cost of inputs.	15.5%	166,760
+ 20%				14.7%	150,460
	- 20%		Reduced producer prices / demand. Infrastructure investments are not directed to areas of highest production potential. Technical coordination by the implementing agencies and service providers is not responsive to the group level needs.	14.3%	113,840
	- 40%			11.4%	44,630
+ 10%	- 10%			14.5%	132,150
+ 20%	- 20%		Combinations of the above	12.5%	81,240
Base Case	Base Case	1 year		15.1%	154,480
		2 years		13.9%	128,270
		3 years		12.9%	104,220
Base case	- 20%	1 year	Insufficient cohesion within farmer groups affect their success potential Ineffective coordination between provinces, districts, villages and agro-enterprises undermining implementation progress Financial service providers not interested to invest in Programme-targeted value chains Borrowers divert loans for other purpose	12.2%	74,680
		2 years		11.2%	53,710
		3 years		10.4%	34,470
+ 20%	- 20%	2 years	Climate-change and disaster impacts. External shocks to macro economy.	10.5%	37,410
Switching Values <sup>3</sup>					
Benefits		(53%)			
Costs		112%			

<sup>1</sup> Hurdle rate 9 per cent.

<sup>2</sup> Rounded.

<sup>3</sup> Percent change in cost and/or benefit streams to obtain an ENPV of USD 0, i.e., economic viability threshold.

Graph I –Switching Value Frontier<sup>1</sup>



<sup>1</sup> As per IFAD (2015) Economic and Financial Analysis of Rural Investment Projects – Internal Guide

## I. FINANCIAL ANALYSIS

### A. Objective and Methodology

1. The objective of the financial analysis is to assess the viability of the Project's proposed inventions at the farm household. Profitability at this level underpins the partnerships sought by the Project. The methodology employed establishes individual gross margin enterprise budgets for representative crops, namely: paddy; cash crops (peanuts, garlic and watermelon) and fruit (orange) cropping activities to demonstrate the efficiency of investment through positive net returns. These budgets provide the basic building blocks of the household farming businesses and are combined according generalised cropping patterns to form farm budgets. At the level of the farm, other characteristics of the household are included to provide an overall representation of operations and profitability. These other factors include financing (including short and/or long credit, grants), on-farm use, household consumption, household labour availability, taxes and farm level investment and operating expenses.
2. The financial and economic analysis is formulated on an incremental basis and as such compares the with project (WP) situation to the without project (WoP)<sup>2</sup>. In this way, the difference between the two scenarios, the incremental net benefit, is the basis of the appraisal<sup>3</sup>. This approach is applied both for the financial analysis from the perspective of the household and in aggregated form for the economic analysis from the perspective of society (see next section).
3. The financial and economic analysis is carried-out over that section of the beneficiary population that is expected to use farmer matching grants<sup>4</sup> to enhance their production for existing and emerging market opportunities. It is expected that the other project components – notably: (i) matching grants to promote agro-enterprise development involvement in the project area<sup>5</sup>; (ii) investment in road connectivity; and (iii) improved irrigation system management<sup>6</sup> – expand the population targeted by the Project to 213,200 individuals in 41,000 households.
4. The remainder of this section presents the assumptions and the results of the individual enterprise and farm budgets. Farm budgets are developed for four types of smallholder farming systems targeted in the Project area. These four farm types are divided into the rainfed paddy models (refer to Table 2.1) and irrigated paddy models (refer to Table 2.2). Upland areas in this context refers to lands less than 25% slope.

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<sup>2</sup> The descriptions below "Without Project" is synonymous with "Existing", while "With Project" is synonymous with "New".

<sup>3</sup> The methodology is guided by: Gittinger, J.P (1982), Economic Analysis of Agricultural Projects, Second Edition, EDI World Bank, and (IFAD (2015) Economic and Financial Analysis of Rural Investment Projects – Internal Guide.

<sup>4</sup> Output 1.4 - Farmer Group Investment Facility established.

<sup>5</sup> Output 2.2 - Agro-Enterprise Investment Facility established

<sup>6</sup> Output 1.2 - Water User Groups trained

Table 2.1 - Rainfed lowland paddy household models

Scenario	Farm size	Wet Season	Dry Season
<b>Model A: Rainfed lowland paddy only</b>			
Existing	1 ha paddy	1 ha rainfed lowland paddy (local variety)	(No cropping)
New	1 ha paddy	1 ha rainfed lowland paddy (improved variety Lao GAP <sup>1)</sup> )	0.5 ha peanut relay crop
<b>Model B: Rainfed lowland paddy with upland</b>			
Existing	1 ha paddy	1 ha rainfed lowland paddy (local variety)	(No cropping)
	1 ha upland	1 ha maize	(No cropping)
New	1 ha paddy	1 ha rainfed paddy (improved variety)	0.5 ha short-cycle relay crop (peanut)
	1 ha upland	1 ha maize Years 1 to 4	0.5 ha maize
		0.5 ha orange production Year 4 onwards	

Source: PICSA Design Team

<sup>1</sup> Lao Good Agricultural Practices

5. The farming systems characterised by these models are described further in the note on farming systems provided in the Appendix 1.

Table 2.2 Irrigated paddy household models

Scenario	Farm size	Wet Season	Dry Season
<b>Model C: Irrigated lowland paddy only</b>			
Existing	1 ha paddy	1 ha irrigated paddy (local variety)	0.5 ha irrigated paddy (local)
New	1 ha paddy	1 ha irrigated rice (improved variety)	1 ha peanuts 1 ha garlic
<b>Model D: Irrigated lowland paddy with upland</b>			
Existing	1 ha paddy	1 ha irrigated paddy (local variety)	0.5 ha irrigated paddy (local variety)
	1 ha upland	1 ha maize	(No cropping)
New	1 ha paddy	1 ha irrigated paddy (improved variety)	1 ha peanuts 1 ha garlic
	1 ha upland	1 ha maize Years 1 to 4 (prior to orange production)	0.5 ha maize 0.25 ha watermelon
		0.5 ha orange production Year 4 onwards	

Source: PICSA Design Team

## B. Production Models

6. Gross margins. Each model presents revenues based on average yields and prices. Operating expenses are defined in terms of inputs and labour. Labour is defined in terms of month based on the cropping calendar activities and gender. The gross margin is reported before and after the valuation of family labour costs. A listing of the models developed for the analysis is shown in Table 2.3 below. The prices of the inputs to, and outputs from these models are provided in Appendix 2 Table 1. It is recognised that cropping patterns may vary considerably from year to year depending on market conditions. The models developed are meant to indicate average conditions as well as be reflective of typical returns for paddy and cash crops.

Table 2.3 - Production Models

Category	Enterprise
Main field crops	Rainfed lowland paddy local variety
	Rainfed lowland paddy improved variety
	Irrigated paddy local variety
	Irrigated paddy improved variety
	Maize
Cash crops	Groundnuts
	Watermelon
	Garlic
Fruit trees	Oranges

These models are defined in the Farmod division Production Models

7. The yield and input assumptions for the production models indicated above are provided in Appendix 2 Tables 2 to 19.

8. Rainfed Lowland Paddy. The key characteristics of this production model are presented in Table 2.4. The current production level with local varieties is assumed at 3 tonnes per ha. With the PICSA interventions these yields are expected to increase to 3.5 tonnes per ha over 5 years, an increase of 17 per cent. This is the result of improved seed, inputs and practices. Net income before and after labour costs is projected to increase by 32 and 280 per cent respectively.

Table 2.4 - Rainfed Lowland Paddy – yield and net income – per hectare

Parameter	Unit	Without	With <sup>1</sup>	% change <sup>2</sup>
Rainfed Paddy	Kg	3,000	3,500	17%
Net income – before labour	LAK '000	5,680	7,470	32%
Net income – after labour	LAK '000	640	2,430	280%

<sup>1</sup> At full development – Without = Without project, With = With project

<sup>2</sup> ((With / Without) -1)\*100

Full details in Appendix 2 Table 2 to Appendix 2 Table 5

9. Irrigated Paddy. The key characteristics of this production model are presented in Table 2.5. The current production levels with local varieties is assumed at 3 tonnes per ha. With the PICSA interventions these yields are expected to increase to 3.5 tonnes per

ha over 5 years, an increase of 17 per cent. Net income before and after labour costs is projected to increase by 9 and 77 per cent respectively.

Table 2.5 - Irrigate Paddy – yield and net income – per hectare

Parameter	Unit	Without	With <sup>\text{1}</sup>	% change
Irrigated Paddy	Kg	3,000	3,500	17%
Net income – before labour	LAK '000	5,680	6,170	9%
Net income – after labour	LAK '000	640	1,130	77%

<sup>\text{1}</sup> At full development – Without = Without project, With = With project

Full details in Appendix 2 Table 6 to Appendix 2 Table 9.

10. Maize. The key characteristics of this production model are presented in Table 2.6. This crop is growing on sloping land (<25%) adjacent to the lowlands. The current production levels with local varieties assumes yields from 2 to 4 tonnes per ha depending on the duration at the location. With the PICSA interventions of improved inputs and practices yields are expected to increase to 4.5 tonnes per ha over 3 years, an increase of 41 per cent. Net income before and after labour costs is projected to increase by 40 and 275 per cent respectively.

Table 2.6 – Maize on sloping lands – yield and net income – per hectare

Parameter	Unit	Without <sup>\text{1}</sup>	With <sup>\text{2}</sup>	% change
Maize	Kg	3,200	4,500	41%
Net income – before labour	LAK '000	4,698	6,570	40%
Net income – after labour	LAK '000	468	1,755	275%

<sup>\text{1}</sup> Without project average 5 years.

<sup>\text{2}</sup> At full development – Without = Without project, With = With project

Full details in Appendix 2 Table 10 to Appendix 2 Table 11

11. Groundnuts. The key features of this production model are presented in Table 2.7. Groundnuts are grown as a dry season crop following paddy production in both rainfed and irrigated areas in the WP scenario. With the PICSA interventions of improved inputs and practices yields of 1.2 tonnes of unshelled pods per ha are achieved over 5 years. Net income before and after labour costs at full development are projected as LAK 4,030,000 and LAK 205,000 per ha.

Table 2.7 – Groundnuts – yield and net income – per hectare

Parameter	Unit	Without <sup>\text{1}</sup>	With <sup>\text{2}</sup>	% change
Groundnut	Kg	-	1,200	-
Net income – before labour	LAK '000	-	4,030	-
Net income – after labour	LAK '000	-	205	-

<sup>\text{1}</sup> New crop no existing production assumed

<sup>\text{2}</sup> At full development – Without = Without project, With = With project

Full details in Appendix 2 Table 12 and Appendix 2 Table 13.

12. Watermelon. The key characteristics of this production model are presented in Table 2.8. This crop complements maize as a dry season crop on sloping lands in the WP

scenario. With the PICSA interventions of improved inputs and practices yields of 7 tonnes per ha to be achieved over 5 years. Net income before and after labour costs at full development are projected as LAK 10,900,000 and LAK 4,330,000 per ha.

Table 2.8 – Watermelon – yield and net income – per hectare

Parameter	Unit	Without <sup>1</sup>	With <sup>2</sup>	% change
Watermelon	Kg	-	7,000	-
Net income – before labour	LAK '000	-	10,900	-
Net income – after labour	LAK '000	-	4,330	-

<sup>1</sup> New crop no existing production assumed

<sup>2</sup> At full development – Without = Without project, With = With project

Full details in Appendix 2 Table 14 to Appendix 2 Table 15.

13. Garlic. The key features of this production model are presented in Table 2.9. This crop is grown as a dry season crop after paddy on irrigated lands in the WP scenario. With the PICSA interventions of improved inputs and practices yields of 2 tonnes per ha to be achieved over 5 years. Net income before and after labour costs at full development are projected as LAK 9,700,000 and LAK 5,920,000 per ha.

Table 2.9 – Garlic – yield and net income – per hectare

Parameter	Unit	Without <sup>1</sup>	With <sup>2</sup>	% change
Garlic	Kg	-	2,000	-
Net income – before labour	LAK '000	-	9,700	-
Net income – after labour	LAK '000	-	5,920	-

<sup>1</sup> New crop no existing production assumed

<sup>2</sup> At full development – Without = Without project, With = With project

Full details in Appendix 2 Table 16 to Appendix 2 Table 17.

## C. Matching Grant Investment packages

14. Under Output 1.4 Farmer Group Investment Facility, funds are available for farmers groups to stimulate investment in intensified and market-oriented production on their farms. The Farmer Group Investment Facility provides a source of finance for three categories of investment: (a) production input packages; (b) infrastructure investments; and, (c) capacity building. The financial modelling assumes that each household will engage with these sources of funding. Typical investment for each category of matching grants for each of the four household models have been developed and incorporated into the financial models. In each case the farm household is charged the full value of the package as an investment expense and credited with the associated grant.

15. The illustrative packages for each of the three categories outlined above for each of the four farm types are provided in the following tables (Table 2.10 to Table 2.13)

Table 2.10 - Farmer Group Investment Facility Illustrative Packages – Rainfed Paddy Model

Package	Investment	Units	Unit Price (LAK)	Quantity	Total (LAK)	Grant component – (LAK)	HH component (LAK)
Production	Improved rice seeds (Lao GAP)	Kg	5,000	60	300,000	150,000	150,000
	Fertilizers (farm manure)	Kg	210	1000	210,000	-	210,000
	Paddy pest control equipment	LS	185,000	1	185,000	92,500	92,500
	Relay crop improved seeds	gr.	1,200	200	240,000	225,000	15,000
	Total investment				935,000	467,500	467,500
Infrastructure	Water source / storage	LS	485,000	1	485,000	242,500	242,500
	Tarpaulin (water tight sheeting)	LS	300,000	1	300,000	150,000	150,000
	Irrigation equipment	LS	200,000	1	200,000	100,000	100,000
	Post harvest equipment	LS	300,000	1	300,000	230,000	70,000
	Labour	day	40,000	4	160,000	-	160,000
	Total investment				1,445,000	722,500	722,500
Capacity Building	Trainers fees	session	85,000	1	85,000	68,000	17,000
	Demonstration equipment	demo plot	170,000	1	170,000	136,000	34,000
	Total investment				255,000	204,000	51,000

Table 2.11 - Farmer Group Investment Facility Illustrative Packages – Rainfed Paddy and Upland Model

Package	Investment	Units	Unit Price	Quantity	Total (LAK)	Grant component (LAK)	HH component (LAK)
Production – Lowland	Improved rice seeds (Lao GAP)	kg	5,000	60	300,000	150,000	150,000
	Fertilizers (farm manure)	kg	210	1000	210,000	-	210,000
	pest control equipment	LS	85,000	1	185,000	92,500	92,500
	Relay crop impr. seeds	gr.	1,200	200	240,000	225,000	15,000
Production - Upland	Tree Seedlings (upland)		5,000	255	1,275,000	1,100,000	175,000
	Annual crop inputs	LS	220,000	1	220,000	47,500	172,500
	Anti erosion contour	day	40,000	20	800,000	-	800,000
	Total investment				3,230,000	1,615,000	1,615,000
Infrastructure - Lowland	Water supply / storage	LS	485,000	1	485,000	242,500	242,500
	Tarpaulin (water tight sheeting)	LS	300,000	1	300,000	150,000	150,000
	Irrigation equipment	LS	200,000	1	200,000	100,000	100,000
	Post harvest equipment	LS	300,000	1	300,000	230,000	70,000
	Labour	day	40,000	4	160,000	-	160,000
Infrastructure - Upland	Material for water source capture	LS	100,000	1	100,000	50,000	50,000
	Material for water storage	LS	200,000	1	200,000	100,000	100,000
	Irrigation equipment (drip, sprinkler)	LS	200,000	1	200,000	100,000	100,000

Package	Investment	Units	Unit Price	Quantity	Total (LAK)	Grant component (LAK)	HH component (LAK)
	HDPE Pipe	m	8,000	50	400,000	280,000	120,000
	Fencing	m	1,000	640	640,000	320,000	320,000
	Labour	day	40,000	4	160,000	-	160,000
	Total investment				3,145,000	1,572,500	1,572,500
Capacity Building	Trainers fees	session	85,000	1	85,000	68,000	17,000
	Demonstration equipment	demo plot	170,000	1	170,000	136,000	34,000
	Total investment				255,000	204,000	51,000

Table 2.12 - Farmer Group Investment Facility Illustrative Packages – Irrigated Paddy Model

Package	Investment	Units	Unit Price	Quantity	Total (LAK)	Grant component (LAK)	HH component (LAK)
Production – lowland paddy	Improved rice seeds	kg	5,000	60	300,000	150,000	150,000
	Fertilizers (farm manure)	kg	210	1000	210,000	-	210,000
	Paddy pest control equipment	LS	185,000	1	185,000	92,500	92,500
Production – lowland season	Land preparation (furrows)	Ha	550,000	1	550,000	275,000	275,000
	Improved inputs (cash crops)	LS	300,000	1	300,000	300,000	-
	Irrigation service fee	ha	500,000	1	500,000		500,000
	Cash crops pest control	LS	500,000	1	500,000	325,000	175,000
	On farm irrigation equipment	LS	260,000	1	260,000	260,000	-
	Total investment				2,805,000	1,402,500	1,402,500
	Material for canal improv.	LS	600,000	1	600,000	300,000	300,000
	Machinery for access track	LS	810,000	1	810,000	405,000	405,000
	Post harvest equipment	LS	900,000	1	900,000	570,000	330,000
Infrastructure	Labour	day	40,000	6	240,000		240,000
	Total investment				2,550,000	1,275,000	1,275,000
Capacity Building	Trainers fees	session	85,000	1	85,000	68,000	17,000
	Demonstration equipment	demo plot	170,000	1	170,000	136,000	34,000
	Total investment				255,000	204,000	51,000

Table 2.13 - Farmer Group Investment Facility Illustrative Packages – Irrigated Paddy and Upland Model

Package	Investment	Units	Unit Price	Quantity	Total (LAK)	Grant component (LAK)	HH component (LAK)
Production – lowland paddy	R3 rice seeds	kg	5,000	60	300,000	150,000	150,000
	Fertilizers (farm manure)	kg	210	1000	210,000	-	210,000
	Paddy pest control equipment	LS	185,000	1	185,000	92,500	92,500
	Land preparation (furrows)	Ha	550,000	1	550,000	275,000	275,000
Production – lowland dry season	Improved inputs (cash crops)	LS	300,000	1	300,000	300,000	-
	Irrigation service fee	ha	500,000	1	500,000		500,000
	Cash crops pest control	LS	500,000	1	500,000	325,000	175,000
	on farm irrigation equipment	LS	260,000	1	260,000	260,000	-
Production Upland	Tree Seedlings (upland)		5,000	255	1,275,000	1,100,000	175,000
	Annual crop inputs	LS	220,000	1	220,000	47,500	172,500
	Anti erosion contour	day	40,000	20	800,000		800,000
	Total investment				5,100,000	2,550,000	2,550,000
Infrastructure - Lowland	Material for canal improvement	LS	600,000	1	600,000	300,000	300,000
	machinery for access track	LS	810,000	1	810,000	405,000	405,000
	post harvest equipment	LS	900,000	1	900,000	570,000	330,000

Package	Investment	Units	Unit Price	Quantity	Total (LAK)	Grant component (LAK)	HH component (LAK)
Infrastructure - Upland	Labour	day	40,000	6	240,000		240,000
	Material for water source capture	LS	100,000	1	100,000	50,000	50,000
	Material for water storage	LS	200,000	1	200,000	100,000	100,000
	Irrigation equipment (drip, sprinkler)	LS	200,000	1	200,000	100,000	100,000
	HDPE Pipe	m	8,000	50	400,000	280,000	120,000
	Fencing	m	1,000	640	640,000	320,000	320,000
	Labour	day	40,000	4	160,000		160,000
	Total investment				4,250,000	2,125,000	2,125,000
Capacity Building	Trainers fees	session	85,000	1	85,000	68,000	17,000
	Demonstration equipment	demo plot	170,000	1	170,000	136,000	34,000
	Total investment				255,000	204,000	51,000

## D. Illustrative Farm Models

16. The enterprise budgets described above are combined into household farm models by applying the cropping patterns presented in Table 2.1 and Table 2.2. At the farm level further additions and adjustments are made to complete the farm household configurations for financial analysis. Key farm budget assumptions common to all household models are described in Table 2.14.

17. The indicators of profitability and productivity developed are:

- Farm Family Benefits After Financing
- Returns to Family-Day of Labour
- Ratio of Returns to Family-Day of Labour to the daily wage rate <sup>7</sup>

Table 2.14 Key Farm Budget Assumptions

Parameter	Description
On farm use	Where appropriate enterprise inputs that can be sourced from enterprise outputs are included, e.g. own production is used for seed supplies
Own consumption	Each farm household is assumed to consume 1,500 kgs of paddy produced on the farm.
Investment packages	Each farm household model is assumed to be part of a group that receives production, infrastructure and capacity building package as described above.
Investment financing	Each household receives a grant equivalent to 50% of the value of the infrastructure/inputs investment package and 80% of the capacity building package. It is assumed that the balance is their own contribution
Seasonal credit	All models assume variable input for the year are financed through short term borrowing. Interest is assumed at 1 per cent per month for the estimated duration from the start of the season to harvest.
Taxes	Land taxes for the lowland and upland area.
Labour requirements	Labour requirements (by gender and month) for each activity are estimated and compared to the household or group labour availability. Where additional labour is required it is assumed that labour would be hired at market rates.
Labour availability	The household availability is estimated. Households are assumed to have 1.5 male and 1.5 female able-bodied persons available for farm work. Availability is assumed to be 60% and 40% of the month for male and females respectively thus defining household male labour available at around 27 days per month and female labour available at around 19 days per month.
Value of farm family labour	LAK 45,000 per day – this is equivalent to the minimum monthly wage rate of LAK 1,100,000.
Cost of hired labour	Demand for labour is first served by family labour. Where family labour is insufficient hired labour at LAK 55,000 per day is purchased slightly higher due to demand in peak periods.

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<sup>7</sup> The ratio of the returns to day of labour to the daily wage is an important indicator of the incentive for labour to stay and/or return to farming.

18. Rainfed Paddy Farm Household Model This model examines the profitability of moving from a single crop of traditional variety rainfed paddy to an improved rainfed paddy variety and a peanut relay crop. The key characteristics of, and results for this household model are shown in Table 2.15.

Table 2.15 - Rainfed Paddy Farm Model Results

Description:	Rainfed paddy farm improved through improved varieties, inputs and supplementary irrigation to allow for a short relay cash crop in the dry season.		
	Unit	Without	With
<b>Key features:</b>			
Paddy output	kgs	3,000	3,500
Groundnut output	kgs	-	600
Cropping intensity	%	100	150
<b>Financial indicators:</b>			
Farm Family Benefits After Financing	LAK '000/year	5,643	7,764
	USD/year	664	913
Returns per Family-Day of Labour	LAK/person/day	50,380	50,500
	USD/person/day	5.93	5.94
Ratio to daily wage rate (LAK 45,000)	Ratio to DWR	1.12	1.12

19. The annual farm family benefits after financing WP at full development are estimated at LAK 7,764 million per year. This is equivalent to USD 913 per household per year. The returns per day of labour are projected at LAK 50,500 per person day. In USD terms, the returns per family-day of labour equate to USD 5.94 per person day. The ratio of the returns to labour to the minimum daily wage is projected at 1.12. While the impact of Project interventions produces 38 per cent increase in farm family benefits after financing, return to labour are largely unaffected due to the additional labour needs. A detailed production and inputs schedule, as well as the financial budget for the rainfed household, are provided in Appendix 2 Table 20 and Appendix 2 Table 21 respectively.

20. Rainfed Paddy and Upland Farm Household Model This model examines the profitability of moving from a single crop of traditional variety rainfed paddy and upland maize to an improved rainfed paddy variety and a peanut relay crop in the lowland and dry season cash crop and orchard production in the upland. The key characteristics of, and results for this household model are shown in Table 2.16.

Table 2.16 - Rainfed Paddy and Upland Farm Model Results

Description:	Rainfed paddy and upland farm developed through improved varieties, inputs and supplementary irrigation to allow for an incremental lowland short relay cash crop and cash and fruit crops in the upland.		
	Unit	Without	With
<b>Key features:</b>			
Paddy output	kgs	3,000	3,500
Maize output	kgs	3,000	2,250

Description:	Rainfed paddy and upland farm developed through improved varieties, inputs and supplementary irrigation to allow for an incremental lowland short relay cash crop and cash and fruit crops in the upland.		
Groundnut output	kgs	-	600
Watermelon output	kgs	-	1,875
Oranges (at full development)	kgs	-	4,000
Cropping intensity	%	100	163
Financial indicators:			
Farm Family Benefits After Financing	LAK '000/year	9,487	23,776
	USD/year	1,116	2,797
Returns per Family-Day of Labour	LAK/person/day	48,400	85,760
	USD/person/day	5.69	10.09
Ratio to daily wage rate (LAK 45,000)	Ratio to DWR	1.08	1.91

21. The annual farm family benefits after financing WP at full development are estimated at LAK 23,776 million per year which represents around 150 per cent increase over the WOP scenario. The WP benefit is equivalent to around USD 2,800 per household per year. The returns per family-day of labour WP are projected at LAK 85,760 per person day. In USD terms, the WP returns per family-day of labour equate to USD 10 per person day. The ratio of the returns to labour to the minimum daily wage is projected at 1.91 indicating that upland crops provide competitive employment opportunities. A detailed production and inputs schedule, as well as the financial budget for the rainfed paddy and upland household, are provided in Appendix 2 Table 22 and Appendix 2 Table 23 respectively.

22. Irrigated Paddy Farm Household Model This model examines the profitability of moving from a single crop of traditional variety irrigated paddy to an improved irrigated paddy variety and a peanut and garlic relays crop in the lowland. The key characteristics of, and results for this household model are shown in Table 2.17.

Table 2.17 - Irrigated Paddy Farm Model Results

Description:	Rainfed paddy and associated land developed through improved varieties, inputs and supplementary irrigation to allow for an incremental lowland short relay cash crop and cash and fruit crops.		
	Unit	Without	With
Key features:			
Paddy output	Kgs	4,500	3,500
Groundnuts output	Kgs	-	1,200
Garlic output	Kgs	-	2,000
Cropping intensity	%	100	150
Financial indicators:			
Farm Family Benefits After Financing	LAK '000/year	7,976	16,048
	USD/year	9,38	1,888

Description:	Rainfed paddy and associated land developed through improved varieties, inputs and supplementary irrigation to allow for an incremental lowland short relay cash crop and cash and fruit crops.		
Returns per Family-Day of Labour	LAK/person/day	50,640	67,860
	USD/person/day	5.96	7.98
Ratio to daily wage rate (LAK 45,000)	Ratio to DWR	1.13	1.51

23. The annual farm family benefits after financing WP at full development are estimated at LAK 16,048 million per year which represents around 100 per cent increase over the WOP scenario. The WP benefits is equivalent to around USD 1,890 per household per year. The returns per family-day of labour WP are projected at LAK 67,860 per person day. In USD terms, the WP returns per family-day of labour equate to USD 8 per person day. The ratio of the returns to labour to the minimum daily wage is projected at 1.51. A detailed production and inputs schedule, as well as the financial budget for the rainfed paddy and upland household, are provided in Appendix 2 Table 24 and Appendix 2 Table 25 respectively.

24. Irrigated Paddy with Upland Farm Household Model This model examines the profitability of moving from a single wet season crop and partial dry season of traditional variety irrigated paddy and upland maize to an improved wet season irrigated paddy variety and a dry season peanut and garlic relay crop in the lowland, together with dry season cash crop and orchard production in the upland. The key characteristics of, and results for this household model are shown in Table 2.18.

Table 2.18 - Irrigated Paddy and Upland Farm Model Results

Description:	Rainfed paddy and associated land developed through improved varieties, inputs and supplementary irrigation to allow for an incremental lowland short relay cash crop and cash and fruit crops.		
	Unit	Without	With
<b>Key features:</b>			
Paddy output	kgs	4,500	3,000
Maize output	kgs	3,000	2,250
Groundnut output	kgs	-	1,200
Garlic output	kgs	-	2,000
Orange output	kgs	-	4,000
Cropping intensity	%	125	238
<b>Financial indicators:</b>			
Farm Family Benefits After Financing	LAK '000/year	10,938	39,085
	USD/year	1,287	4,598
Returns per Family-Day of Labour	LAK/person/day	49,050	117,930
	USD/person/day	5.77	13.87
Ratio to daily wage rate (LAK 45,000)	Ratio to DWR	1.09	2.62

25. The annual farm family benefits after financing WP at full development are estimated at LAK 39.085 million per year which represents over a 200 per cent increase over the WOP scenario. The WP benefits is equivalent to around USD 4,600 per household per year. The returns per family-day of labour WP are projected at LAK 117,930 per person day. In USD terms, the WP returns per family-day of labour equate to around USD 14 per person day. The ratio of the returns to labour to the minimum daily wage is projected at 2.62. A detailed production and inputs schedule, as well as the financial budget for the rainfed paddy and upland household, are provided in Appendix 2 Table 26 and Appendix 2 Table 27 respectively.

## E. Results of Financial Appraisal

26. The outcome of the farm budget analysis for the household models described above is shown in Table 2.19. The table indicates the net present value of the incremental benefit stream to be greater than zero in all cases confirming the profitability of all farm types modelled. The internal rate of return after financing is above the financial opportunity cost of capital at 12 per cent. The incremental returns per incremental family labour day indicate the value of additional labour into each of the farm model which ranges from around the value of the daily wage rate in the case of the rainfed paddy model to around five and a half times the daily rate for the irrigated paddy with upland model.

Table 2.19 - Key Financial Parameters by Farm Models

Farm Type	Net Present Value (LAK'000) <sup>\1</sup>	Internal rate of Return (%)	Incremental returns per incremental family-day labour (LAK'000)
Rainfed Paddy	12,960	170	51
Rainfed Paddy plus Upland	99,930	91	194
Irrigated Paddy	39,582	72	102
Irrigated Paddy plus Upland	121,860	67	246

Notes:

<sup>\1</sup> IRR and NPV derived from Farmod's cashflow see financial budgets see Appendix Tables

<sup>\2</sup> After financing

## II. ECONOMIC ANALYSIS

### A. Objective and Methodology

27. The objective of the economic analysis is to evaluate the expected contribution of the proposed project to the economic development of the project districts and the economy at large. The purpose of such an analysis is to determine whether the economic benefits sufficiently justify the use of the project resources.

28. For the purposes of the economic analysis the smallholder irrigation agriculture output forms the focus of the benefit modelling. The four farm model types described in financial analysis are converted to economic models and combined with the estimate of the number of farms of each model type to form an aggregated economic model<sup>8</sup>. The analysis recognises that indirect benefits will also arise to those villagers dependent exclusively on agricultural labour and to those fully dependent on forest-based production systems. Indirect benefits are foreseen in employment generation arising in enhanced agricultural production and processing as well as decreasing the pressure on natural resources through a shift towards more intensive farming on irrigated and rainfed lands. These benefits as well as those arising from enhancing nutritional outcomes are recognised but do not form part of the quantitative modelling<sup>9</sup>.

29. Approach. The valuation of the incremental production at household level forms the basis of the benefit valuation framework<sup>10</sup>. Individual crop production enterprise models representing the likely paddy and cash crop combinations are established. In the manner described in the financial analysis, crop enterprise models are combined to estimate incremental smallholder farming household production and cashflow. These representative households are then aggregated to establish a project level value of incremental production. This is then combined with incremental project costs to derive the key appraisal indicators.

30. Target population and participation. The Programme would be implemented in sixteen districts selected in the provinces of Luang Prabang, Xayaboury, Xieng Khouang and Houaphan of Northern Laos. The Project would principally target irrigated and rainfed smallholder farmers aligned to, and in the vicinity of, the SRIWMS schemes.

31. After the Pre-Design Mission in October – November 2019 a Follow-Up Mission in January 2019 was undertaken with the objective collecting detailed data and information related to area and households in project intervention areas. Through this work (see separate report) the total number of households in 19 targeted districts was estimated at 41,000. The logic to estimate the targeted number of households for agricultural interventions is summarised as follows;

- The population target for the project is 41,000 households;
- Eliminating the landless rich reduces the target to 36,900 households;
- Eliminating the households physically beyond the reach of the PICSA reduces the target to 32,800 households;

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<sup>8</sup> This approach does not make a distinction between benefits the PICSA interventions would deliver on the ADB sub-projects and the benefits on the smallholder irrigation development outside the activities. Instead the analysis examines the benefits arising from the PICSA interventions across the 4 broad types of smallholder irrigation farms that constitute the focus for smallholder and commercial sector partnership development. To provide some perspective the first four pilot schemes total approximately 1,560 ha, while the overall PICSA target is 16,750 ha.

<sup>9</sup> A note on non-quantified benefits is provided below.

<sup>10</sup> Achieved through the application of a Without and With project analytical framework.

- Of the 32,800 households within reach the population, the number estimated to take up agricultural interventions is 30,750 households;
- Of the 30,750 households involved in agricultural interventions around 17,200 households are expected to take advantage of the farmer investment facility.

32. It is therefore expected that the PICSA would serve around 17,200 direct households (smallholder farms) equivalent to around 89,440 direct beneficiaries<sup>11</sup>. The breakdown for this target group by farm type is presented below in Table 2.20.

33. A further 13,740<sup>12</sup> indirect beneficiaries are foreseen that would benefit from interventions in: water user group training (Output 1.2); support to public and private extension (Output 1.3); Agro-Enterprise Investment Facility (Output 2.2), the establishment and maintenance of village to field and village to village access tracks (Output 2.3) and improved nutritional intake activities (Outputs 3.1 to 3.2).

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<sup>11</sup> At 5.2 persons per household.

<sup>12</sup> Targeted HH 40,100 – minus 16,750 HH = 24,250 HH x 5.2 persons per HH = 126,100 beneficiaries (indirect).

Table 2.20 - Household Participation Assumptions

	PY 1	PY 2	PY 3	PY 4	PY 5	PY 6
<b>Households by Farm Type</b>						
Rainfed Paddy	257	770	1,027	1,284	1,284	513
Rainfed Paddy plus Upland	205	205	205	205	205	-
Irrigated Paddy	1,027	1,540	2,054	2,567	1,540	1,540
Irrigated Paddy plus Upland	154	308	308	-	-	-
Total – incremental	1,643	2,824	3,594	4,056	3,029	2,054
Total – cumulative (rounded)	1,643	4,467	8,061	12,117	15,146	17,200
Incremental household by farm type adjusted for adoption rate <sup>12</sup>						
Rainfed Paddy	210	620	820	1,030	1,030	410
Rainfed Paddy plus Upland	160	160	160	160	160	-
Irrigated Paddy	820	1,230	1,640	2,050	1,230	1,230
Irrigated Paddy plus Upland	120	250	250	-	-	-
Total – incremental	1,310	2,260	2,870	3,240	2,420	1,640
Total – cumulative (rounded)	1,310	3,570	6,440	9,680	12,100	13,740
<b>Beneficiaries by farm type</b>						
Rainfed Paddy	1,092	3,224	4,264	5,356	5,356	2,132
Rainfed Paddy plus Upland	832	832	832	832	832	-
Irrigated Paddy	4,264	6,396	8,528	10,660	6,396	6,396
Irrigated Paddy plus Upland	624	1,300	1,300	-	-	-
Total – incremental	6,812	11,752	14,924	16,848	12,584	8,528
Total – cumulative (rounded)	6,812	18,564	33,488	50,336	62,920	71,448

<sup>11</sup> For the purposes of this analysis one household farms one hectare.

<sup>12</sup> Assumes 80% adoption rate

Source: Consultant's estimates.

## B. Cost Benefit Analysis

34. Main Assumptions. The key parameters underpinning the economic analysis are presented below<sup>13</sup>.

Parameter	Value	Remarks
Official exchange rate	8,564	USD 1 = LAK 8,564 Bank of Lao PDR reference rate 15 March 2019.
Shadow exchange rate factor	1.02	Project cost are estimated in USD and converted using the Costab software to economic terms using the SERF all financial costs are converted into economic costs through the elimination of subsidies, duties and taxes.
Standard conversion factor	0.97	As commonly applied in recent projects designs in Lao PDR. As appropriate all output prices are adjusted using the SCF in lieu of specific adjustment factors.
Value added tax	13%	Included in project costs and eliminated as appropriate for conversion to economic costs.

<sup>13</sup> The analysis employs the function available in both Costab and Farmod to generate economic costs and benefits respectively.

Parameter	Value	Remarks
Shadow wage rate factor (SWRF)	85%	Applied to unskilled wage rates to reflect the relative abundance of unskilled labour, though in some locations at sometimes of year this may undervalue unskilled labour due to the temporary migration of labour to other parts of Lao PDR or abroad.
Economic opportunity cost of capital	9%	Hurdle rate for the economic internal rate of return
Project life	25	Twenty 25 years has been assumed for the project life in line with the investment lifecycle.

35. Quantified Benefits – Incremental Production. The quantified benefits assume a phased introduction of the beneficiary household farm models. The assumed uptake in incremental and cumulative terms across the farm types is shown in Table 2.20. The adoption rate assumed is 80 per cent. This is justified due to the matching grant mechanism adopted whereby the household is required to contribute 50 per cent the value of the production and infrastructure packages. It is assumed that this commitment to the investments will mean fewer farmers will drop out. Given this adoption rate the expected number of direct beneficiaries is reduced from the target of 89,440 to around 71,450. This reduction allows for both non-adoption and drop out over time. The composition of the smallholder farming models is described above in the financial analysis. The project incremental benefits are derived through the aggregation of the individual household benefits in economic terms. The entry of each household into the project is represented in the cashflow by the incremental economic net benefit stream of the related household model.

36. Given that paddy is an international traded commodity a border parity price is applied through a specific conversion factor. For other products such as vegetables the local representative farm gate price is used based on information collected from the field studies in each province.

37. Increment economic costs. The costs are based on the full PICSA project costing adjusted to avoid double counting of the costs of the farmer matching grants which are also represented in the farm models from which the incremental benefit stream is derived. Costs have been adjusted to economic terms using the SERF (1.02) with taxes, duties and price contingencies removed.

38. Allowances have been made for the following ongoing recurrent expenditures: (i) post-project recurrent costs to maintain support for effective market linkages assumed at 15 per cent of investment costs; and, (ii) post-project recurrent costs to maintain rural access, assumed at 15 per cent of investment costs<sup>14</sup>.

39. Economic Viability Three indicators have been used to assess the overall performance of the project. These are: (i) the economic internal rate of return (EIRR); (ii) the economic net present value (ENPV) and the benefit cost ratio (BCR). These were estimated using cash flow of the incremental benefit and cost streams as outlined above

<sup>14</sup> The market linkage sub-component is expected to provide support for capacity development and finance of small and medium agro-enterprises, with a special focus on start-up enterprises of young rural professionals. Examples would include investments in input- and equipment suppliers, storage / distribution facilities, and service providers. There is therefore an allowance in the post-implementation economic cashflow for the recurrent costs to ensure the continued operation of these businesses.

(refer to Appendix 2 Table 29 for summary discounted cash flow). The overall PICSA project EIRR is 16.4 per cent. The estimated ENPV at a 9 per cent discount rate is LAK 183,059 million (USD 21.38 million). The BCR of 2.12 indicates a return of USD 2.12 for every dollar invested. These results indicate that the project investments yield a positive rate of return as the EIRR greater than the hurdle rate (9 per cent) and the ENPV greater than zero<sup>15</sup>.

40. These returns described above are further supported by the additional non-quantified benefits derived from the establishment and/or improvement to rural access, improved irrigation system management, market linkages as well as the development of agricultural extension services and nutritional improvements (see further details below). The conclusion of this analysis is therefore that the investment in the Project is viable from an economic perspective.

41. The main identified risks that may affect the economic outcome of the Project area are outlined in Table 2.21. A sensitivity analysis has been conducted to assess the potential impact of these risks resulting: in (a) reduced benefits; (b) increased costs; and/or, (c) delayed benefits (see Table 2.22).

Table 2.21 - Overview of Main Project Risks affecting Project Economic Outcome

Risk category	Risk	Likelihood/severity	Potential impact reflected in sensitivity analysis		
			Reduced benefits	Increased costs	Delayed benefits
Economy and Market Risks	External shocks to macro economy.	M/H	X	X	X
	Increase cost of inputs.	L/H		X	
	Reduced producer prices.	L/H	X		
	Reduced demand.	L/H	X		
Institutional	Changes to provincial and district administrative systems	M/H	X	X	X
	Insufficient cohesion within farmer groups affect their success potential	M	X		X
	Ineffective coordination between provinces, districts and agro-enterprises undermining implementation progress	M	X		X
	Unsustainable use of Project-financed civil works and inadequate capacity for community-based O&M.	M	X		X
Market	Elite capture/ disadvantaged groups not able to participate effectively	L/M	X		X
	Lack of technical capacity to respond to the identified needs	M	X	X	X
	Lower market prices for commodities	M	X		X
Policy	Financial service providers not interested to invest in Project targeted initiatives e.g. as a partner to the agro-enterprises.	M	X		X
	Farmers not treated as clients by government agencies and agro-enterprises.	M	X		X
	Climate change adaptation does not underpin agricultural and rural development policies at				

<sup>15</sup> A social discount rate of 9% is assumed consistent with current ADB practice the co-financiers – see main report.

Risk category	Risk	Likelihood/severity	Potential impact reflected in sensitivity analysis		
			Reduced benefits	Increased costs	Delayed benefits
	district levels Poor business environment does not provide incentive for agro-enterprise investments.				
Others	Natural calamities including flood and drought lower output of farm production.	H	XX	X	XX
	Damages to civil works built caused by natural disasters, like floods and land sliding.	M	X		X

42. An increase in programme costs by 10 per cent will reduce the EIRR to 15.5 per cent, while a decrease in overall programme benefits by 20 per cent will result in an EIRR of 14.7 per cent. A one-year delay in benefits reduces the EIRR to 15.1 per cent and a two-year delay to 13.9 per cent. A combination of a reduction in benefits of 20 per cent and an increase in costs by 20 per cent reduces the EIRR to 12.5 per cent indicating the investment remains viable in the face of adverse circumstances. The switching values show that the programme will remain economically viable if benefits decreased by 53 per cent, or programme costs increased by 112 per cent. Table 2.22 below provides an overview of the various scenarios of the sensitivity analysis and confirms the economic viability of the Project. Based on these results it is fair to conclude that the economic benefits justify the use of the project resources.

Table 2.22 – PICSA Sensitivity Analysis

Scenario			Link to Risk Matrix Issues	EIRR <sup>11</sup>	NPV (LAK m) <sup>12</sup>
Base Case				16.4%	183,060
% to Base Case					
Project Costs	Incr'l Benefits	Benefits delayed			
+ 10%			Increase in the cost of inputs.	15.5%	166,760
+ 20%				14.7%	150,460
	- 20%		Reduced producer prices / demand. Infrastructure investments are not directed to areas of highest production potential. Technical coordination by the implementing agencies and service providers is not responsive to the group level needs.	14.3%	113,840
	- 40%			11.4%	44,630
+ 10%	- 10%		Combinations of the above	14.5%	132,150
+ 20%	- 20%			12.5%	81,240
Base Case	Base Case	1 year	Ineffective inter-institutional cooperation & dialogue on development issues means financing is not disbursed in a timely manner to support field implementation.	15.1%	154,480
		2 years		13.9%	128,270
		3 years		12.9%	104,220
Base case	- 20%	1 year	Insufficient cohesion within farmer groups affect their success potential Ineffective coordination between provinces, districts, villages and agro-enterprises undermining implementation progress Financial service providers not interested to invest in Programme-	12.2%	74,680
		2 years		11.2%	53,710
		3 years		10.4%	34,470

Scenario			Link to Risk Matrix Issues	EIRR <sup>11</sup>	NPV (LAK m) <sup>12</sup>
Base Case				16.4%	183,060
% to Base Case			targeted value chains Borrowers divert loans for other purpose		
+ 20%	- 20%	2 years	Climate-change and disaster impacts. External shocks to macro economy.	10.5%	37,410
Switching Values <sup>12</sup>					
Benefits		(53%)			
Costs		112%			

<sup>11</sup> Hurdle rate 9 per cent.

<sup>12</sup> Discounted at 9 per cent, results rounded.

<sup>12</sup> Percent change in cost and/or benefit streams to obtain an ENPV of USD 0, i.e., economic viability threshold.

### C. Note on Unquantified Benefits.

43. Unquantified benefits are expected to be realised for around 40,000 households (including the primary beneficiaries) through the development of market linkages<sup>16</sup>, establishment and/or improvement of rural access<sup>17</sup>, improved water management practices<sup>18</sup>, improvements to the public and private agricultural extension services<sup>19</sup> and the improved nutritional intake.<sup>20</sup>

44. Rural access benefits. Benefits from rural tracks are foreseen to include: (i) changed patterns of production/increased areas; (ii) increased agricultural productivity; (iii) increased marketed output; (iv) increased producer prices; (v) reduced losses (on-farm before transport and during transport); (vi) Increased profits for transport operators; and (vii) social benefits through increased access to health, education and other social services, and information. Refer to

45. Appendix 2 Table 28 for further details.

46. Market linkages benefits. The commercialisation of smallholder (irrigated) agriculture is to an important degree driven by the pull of the market. The Project will therefore facilitate improved interaction between farmer groups and other actors in the value chains: buyers, processors, financial institutions, licensed farmer organisations, input- and equipment suppliers and service providers. It will strengthen actors in strategic positions of relevant value chains.

47. Activities include an agro-enterprise investment facility providing support for capacity development and finance of small and medium agriculturally based enterprises, with a special focus on start-up businesses of young rural professionals. The Project will also support the establishment of commodity-based multi-stakeholder platforms (enterprises, farmer groups, village committees and Government line agencies) to better govern market mechanisms in the intervention areas. As such this Output has the

<sup>16</sup> Outcome 2: Value Chain Developed - Output 2.1 - Multi-Stakeholder Platforms established

<sup>17</sup> Outcome 2: Value Chain Developed Agriculture - Output 2.3 - Access improved

<sup>18</sup> Outcome 1: Intensified Agricultural Development – Output 1.2 – Water Users' Groups trained

<sup>19</sup> Outcome 1: Intensified Agricultural Development - Output 1.3 - Extension services provided

<sup>20</sup> Outcome 3: Improved Nutritional Practices - Output 3.1 - School-based nutrition interventions established; Output 3.2 - Increased dietary intake and improved dietary quality.

potential to produce a substantial and wide ranging of benefits the quantification of which is beyond the scope of this analysis.

48. Water management benefits. The training of Water User Groups will enhance their capacity to operate their system to its full potential as well as to guarantee the performance of their irrigation system into the future. Benefits from better operation include (i) higher yields due to more precise and timely water allocation; (ii) greater scope for dry season cropping due to better synchronisation of wet season cultivation; (iii) larger areas of dry season crops due to better reorganisation of access to irrigated lands in the dry season.

49. Nutrition benefits. The literature describes the economic benefits of improving nutrition in poor societies as being derived from two sources.<sup>21</sup> Firstly, the avoided costs, typically in the reduction in the resources required to deal with mortality or morbidity. The relationship between malnutrition and the risk of mortality is well established. The probability of infant mortality is estimated to be significantly higher for low birth weight (LBW) than for non-LBW infants. When the impact of poor early nutrition is added to the effect of LBW, it is estimated that 56 per cent of child deaths in developing countries are attributable to malnutrition. In addition to increased mortality, malnutrition increases the risk of illnesses that impair the welfare of survivors, uses resources for health care services, and results in loss of time in the productive activities of caregivers.

50. The second form of benefits stemming from improved nutrition are the direct and indirect links between nutrition and productivity. These take two forms: physical and cognitive. Studies have shown that lower adult height is associated with reduced earnings as an adult. The association of productivity and stature may be due to capacity for manual labour, it may also reflect that height is a proxy for concomitant cognitive development.

51. The evidence points to at least three broad ways in which preschool nutritional status can affect cognitive function and education. Firstly, malnourished children may receive less education. This may be for several reasons: because their caregivers seek to invest less in their education, because schools use physical size as a rough indicator of school readiness, or because malnourished children may have higher rates of morbidity and thus greater rates of absenteeism from school. Secondly, malnutrition may delay entry into school, which also may reduce the total amount of schooling. Thirdly, malnutrition may reduce the capacity to learn. In part, this is a direct consequence of the impact of poor nutrition on cognitive development. Additionally, a hungry child may be less likely to pay attention in school and, thus, learn less even if he or she has no long-term impairment of intellectual ability.

52. These three pathways interact; a child with reduced ability to learn will likely start school when older and spend less time in school as well as learn less while in class. This has long-term effects.<sup>22</sup> Furthermore, expectant mothers' attendance at sessions where nutrition and development awareness is coupled with growth monitoring and promotion

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<sup>21</sup> Alderman, H., Behrman, J. R. and Hoddinott, J. 2007 "Economic and Nutritional Analyses Offer Substantial Synergies for Understanding Human Nutrition," *J Nutr.* 2007 March; 137(3): 537–544.

<sup>22</sup> Macours, K., N. Schady, and R. Vakis, 2012. "Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment," *American Economic Journal: Applied Economics*, American Economic Association, vol. 4(2), pages 247-73, April.

has been shown to have a significant positive impact on average monthly lifetime earnings.<sup>23</sup>

53. Economic framework has been established to investigate economic rationale for investments that reduce stunting. One such study showed benefit cost ratios ranging from 3.6 to 48.<sup>24</sup> While Lao PDR was not included in that analysis, the study cited the benefit cost ratio for investments in the reduction of stunting in Vietnam was 35.5, meaning that each dollar invested in programs to remove stunting is estimated to generate around USD 35 in economic returns.

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<sup>23</sup> Gertler, P., J. Heckman, R. Pinto, A., Zanolini, C. Vermeerche, S. Walker, S. Chang-Lopez, and S. Grantham-McGregor, 2013. "Labor Market Returns to Early Childhood Stimulation: a 20-year Follow-up to an Experimental Intervention in Jamaica," World Bank Policy Research Working Paper No. 6529.

<sup>24</sup> Hoddinott, John, Harold Alderman, Jere R. Behrman, Lawrence Haddad, and Susan Horton. 2013. "The Economic Rationale for Investing in Stunting Reduction." *Maternal & Child Nutrition* 9 (S2): 69–82.

#### IV. APPENDIX 1 – FARMING SYSTEM DESCRIPTION

The economic and financial analysis is based on four farm models that will be supported by PICSA in various agroecological settings found in the four target provinces. Lowland paddy areas cover 34,000 ha in Sayaboury province, while the three other provinces (Luang Prabang, Xieng Khouang and Houaphan) feature lowland paddy areas in excess of 10,000 ha. About one third on the lowland paddy areas are irrigated in wet season and double cropping (wet and dry seasons) is possible on about 10% of the lowland paddy areas. More detailed data on lowland irrigated areas (single and double cropping conditions) are to be compiled by the Provincial technical agencies.

Rainfed lowland paddy (Model A) is widely practised in flat valley floors of Northern Lao, mainly for wet season paddy production, relying solely on rainfall. Main constraints of such montane lowland cropping systems are: (i) dry spells during the wet season, hindering rice yields when drought occurs at flowering stage; (ii) soil fertility constraints, more acute in larger valleys than in narrow valleys where paddy fields receive alluvions and sediments from upslopes; and (iii) rice pests such gall midge, affecting wet season rice yields.

The proposed interventions aim at increasing lowland rice yields from 3 to 3.5 tonnes / ha and promoting a short-cycle cash crop at the end of the wet season. Overall land productivity increase will further encourage farmers' investment in expanding lowland paddy fields in valley floors where possible. To achieve these results, key interventions focus on matching grant to support production, investments and extension services delivery.

The main assumptions under this model are: (i) rainfed lowland paddy systems have potential for an increase in rice yields by using improved cropping patterns and adequate inputs (seeds, fertilisation, pest control); (ii) a short-cycle crop can be produced if the cropping calendar is modified (early rice crop establishment) to benefit late rain falls in October/November and if rain water can be stored in improved ponds within the lowland paddy fields; and, (iii) a market for short-cycle cash crops is reliable.

Matching grants will typically support the following investments, depending on the outcome of the groups' planning process:

- Rainfed paddy production inputs such as improved rice seeds (to be renewed every 3 years), improved fertiliser application and rice pest control as well as improved seeds for a short-cycle cash crop.
- A capacity building matching grant will encourage the farmers' groups committees in providing technical training to their members. On-site trainings will demonstrate improved cropping calendar (early rice crop establishment) and production techniques for both wet season rice and a short-cycle cash crop after wet season rice harvest.
- An investment matching grant facility at village or group level will co-finance interventions in productive infrastructures (rain water storage such as ponds in paddy field), post-harvest facilities (drying and storing) or market linkages (village to farm access tracks).

It is expected that interventions under Model A will cover an area of around 5,000 Ha over 16 target districts, or an average of over 310 hectares per district.

Rainfed lowland rice combined with upland crops (Model B). In most cases, farmers who produce rice in lowland paddy also maintain uplands fields to produce cash crops such as maize and job's tears. Upland rice is also produced as a cash crop as it is appreciated for its taste and has a stable market. The main constraints of upland cash crops are: (i) fluctuating market conditions for cash crops; (ii) shortened fallow period affecting soil fertility and creating conditions for weed infestation; and, (iii) high labour requirement.

Labour requirement for lowland paddy is around 120 person-day per ha, while it is 280 person-day per ha for upland rice, out of which 50 per cent devoted to weeding (4 to 5 times per cropping season under short fallow condition). Labour requirement for maize and job's tears are less than for upland rice because early plant growth better suppresses weeds.

Under this model, the project aims at increasing return to labour by promoting permanent cropping systems on upland fields. Interventions include production matching grants to support farmers investments in upland permanent gardens with slopes up to 25 per cent, investment matching grants to develop small scale montane irrigation systems and water storage, capacity building matching grant to ensure delivery of adequate technical advice and demonstrations

The main assumptions are: (i) water resource availability to supply dry season irrigation to upland fields with slopes up to 25 per cent; (ii) farmers invest in permanent gardens combining annual crops (maize, water melon) and perennials (fruit trees such as citrus) and apply soil conservation measures; (iii) market conditions for cash crops are reliable; and, (iv) access conditions from village to upland fields are improved.

In addition to the investment package described in Model A, matching grants under Model B will typically support the following investments, depending on the outcome of the groups' planning process:

- Inputs for irrigated upland crops both annual (maize, watermelon seeds) and perennials such citrus (tree seedlings).
- A capacity building matching grant will encourage the farmers' groups committees in providing technical training to their members. On-site trainings will demonstrate the feasibility of small-scale irrigation water supply on slopes up to 25% to establish permanent integrated gardens. In addition, farmers will receive training in adequate soil conservation measures (contour, mulching, crop association) and water saving techniques.
- An investment matching grant facility at village or group level will co-finance interventions in productive infrastructures: capture of water source, HDPE pipes for water distribution, small storage tanks and on-farm irrigation equipment (drip, sprinkler). Farmers will co-invest in the above equipment and will contribute labour to install the water supply system.

It is expected that interventions under Model B will cover an area of around 1,000 Ha over 16 target districts, or an average of 62 hectares per district.

Irrigated lowland paddy (Model C). Irrigated lowland paddy systems are practiced in valley floors of montane areas of Northern Laos, in similar environments as for rainfed lowland paddy. Irrigation is provided by gravity by diverting water from permanent streams, dammed with wooden weirs or permanent concrete structures. Irrigation of lowland paddy in the northern montane areas provides two main benefits: (i) mitigate dry spells in wet season; and (ii) allow for dry season cropping after wet season rice harvest. The main constraints of irrigated lowland paddy systems are: (i) cold temperatures in December and January locally influenced by altitude and slope exposition; and (ii) inefficient water delivery systems mainly consisting of earthen canals sometime several kilometres long.

The project interventions aim at increasing land productivity and return to labour through: (i) improved wet season paddy production; (ii) promotion of two short-cycle cash crops in dry season; (iii) better post-harvest practices; and (iv) improved market linkages. It is expected that increased land productivity will encourage farmers to invest in improving and maintaining irrigation infrastructures, thereby reducing water losses. The gain in water availability and better on-farm water management will allow farmers to expand the cropped area in dry season.

The key assumption under this model is that if there is a reliable market for cash crops and a reliable water supply in dry season, then farmers will invest resources in dry season crop diversification and in maintaining and improving irrigation infrastructures. Better water management will also allow farmers' groups to expand irrigated crops acreage within the command areas.

To that end, the project will provide support to: (i) offset the risks of investing in dry season cash crop production; (ii) provide extension services to farmers' groups members to promote enhanced production practices such as cropping calendar, on-farm water management, fertilisation and pest control; and (iii) improve post-harvest and market linkages.

Matching grants will typically support the following investments, depending on the outcome of the groups' planning process:

- Irrigated paddy production inputs such as improved rice seeds (to be renewed every 3 years), improved fertilisation application and equipment for rice pest control such as insect traps. Improved inputs for cash crops are also included: seeds and pest control equipment.
- A capacity building matching grant will encourage the farmers' groups committees in providing technical training to their members. On-site trainings will demonstrate improved cropping calendar and production techniques for both wet season rice and dry season cash crops.
- Dry season diversified crop production is supported by matching grants aiming at improving on-farm water management and irrigation sustainability. This may include: improved land preparation (furrows) and on-farm irrigation equipment (flexible hose, sprinkler and drip line that need to be replaced every other year).

The farmers contribution will be in labour and payment of irrigation service fee to cover costs of group administration, routine preventive maintenance of infrastructures and provision for repairs.

- An investment matching grant facility at village or group level will co-finance interventions in productive infrastructures (irrigation canal upgrade), post-harvest facilities (drying and storing) and/or market linkages (village to farm access tracks)

It is expected that interventions under Model C will cover an area of around 10,000 Ha over 18 target districts, or an average of 550 Ha per district.

Irrigated Lowland combined with upland (Model D) reflects the situation where farmers have access to irrigated lowland and maintain an upland field as well. In the case where water resources are available. The investment package to promote permanent upland gardens on slopes up to 25% is similar to the one described in model B above, associating annual cash crops (maize, watermelon) and perennials (fruit trees). It is expected that Model D package will cover a total area of 750 Ha in 16 districts, or an average of 47 Ha per district.

## V. APPENDIX 2 – SUPPORTING TABLES

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Appendix 2 Table 1 - Prices

	Unit	<b>2020 to 2044</b>
<b>Outputs</b>		
<b>Key products - Annual</b>		
Irrigated paddy - local	kg	2,000
Irrigated paddy - improved	kg	2,000
Rainfed paddy local	kg	2,000
Rainfed paddy improved	kg	2,000
Maize	kg	1,200
Peanut pods /a	kg	4,000
<b>Cash crop</b>		
Watermelon	kg	2,000
Garlic	kg	6,500
<b>Fruit</b>		
Oranges	kg	5,000
<b>Inputs</b>		
<b>Planting materials</b>		
Irrigated paddy seed - improved /c	kg	7,000
Rainfed paddy seed - improved	kg	5,000
Maize seed	kg	1,500
Improved maize seed	kg	2,000
Watermelon seeds	kg	500,000
Groundnut seeds	kg	4,000
Garlic seeds	kg	25,000
<b>Inputs</b>		
Farm yard manure	kg	200
Organic fertiliser	kg	2,000
NPK fertilisers	kg	5,600
Fertiliser 16:20:0	bag	105,000
Urea	kg	5,200
Plant protection chemicals	litre	75,000
Paddy bags	bag	1,500
Sacks	unit	2,000
<b>Matching grant packages</b>		
PICSA production package /j	lump sum	935,000
PICSA production package /k	lump sum	3,230,000
PICSA production package /l	lump sum	2,805,000
PICSA production package /m	lump sum	5,100,000
PICSA investment package /n	lump sum	1,445,000
PICSA investment package /o	lump sum	3,145,000
PICSA investment package /p	lump sum	2,550,000
PICSA investment package /q	lump sum	4,250,000
PICSA capacity building package /r	lump sum	255,000
<b>Renewal of farm investments</b>		
Maintenance production assets /v	lump sum	Value Basis
<b>Capacity building</b>		
Capacity building /z	lump sum	Value Basis
<b>Other</b>		
Land preparation (furrowing)	lump sum	Value Basis
Equipment (pest control and irrigation)	lump sum	Value Basis
Improved cash crop inputs	lump sum	Value Basis
<b>Oranges production</b>		
Orange saplings	each	3,000
Lime	kg	2,000
Servo/Horticulture oil	kg	1
Micronutrient	kg	1
<b>WUG</b>		
WUG annual fees	lump sum(	Value Basis
<b>Labor</b>		
<b>Male family labor</b>		
Jan to Dec male -	man day	45,000
<b>Female family labor</b>		
Jan - Dec female -	woman day	45,000
<b>Hired labour</b>		
Hired labour	person day	50,000

\a Fresh peanut pods purchased by traders in the field.

\c Local improved Kip 6,000 to 8,000/kg

\j Inputs and equipment for rainfed paddy farm model

\k Inputs and equipment for rainfed paddy & upland farm model

\l Inputs and equipment for irrigated paddy farm model

\m Inputs and equipment for irrigated paddy & upland farm model

\n Water source development and post harvest equipment

\o Water source / storage development (low and upland) and post harvest equipment

\p Canal / access track improvements and post harvest equipment

\q Canal / access track improvements (low and upland)and post harvest equipment

\r Trainers fees and equipment for demonstrations

\v Water source development and post harvest equipment

\z Training and demonstration plot.

Appendix 2 Table 2 - Yields and Inputs - Paddy rainfed local variety

YIELDS AND INPUTS (Per ha)	Unit	Feb -- Nov		
		Existing Technology		New Technology
		1 to 25	1 to 25	Increments
Yields	kg	3,000	-	-3,000
<b>Operating Inputs</b>				
Farm yard manure	kg	1,000	-	-1,000
Irrigated paddy - local	kg	60	-	-60
<b>Labor</b>				
Nursery - Apr male	man day	5	-	-5
Nursery - Apr female	woman day	5	-	-5
Planting - Apr male	man day	10	-	-10
Planting - Apr female	woman day	10	-	-10
Weeding - Jun male	man day	5	-	-5
Weeding - Jun female	woman day	5	-	-5
Weeding - Jul male	man day	5	-	-5
Weeding - Jul female	woman day	5	-	-5
Weeding - Aug male	man day	5	-	-5
Weeding - Aug female	woman day	5	-	-5
Weeding - Sep male	man day	5	-	-5
Weeding - Sep female	woman day	5	-	-5
Weeding - Oct male	man day	5	-	-5
Weeding - Oct female	woman day	5	-	-5
Harvest - Nov male	man day	10	-	-10
Harvest - Nov female	woman day	10	-	-10
Threshing - Nov male	man day	6	-	-6
Threshing - Nov female	woman day	6	-	-6

Appendix 2 Table 3 - Financial Budget - Paddy rainfed local variety

Lao PDR PICSA Rainfed Paddy Local Crop <b>FINANCIAL BUDGET</b> (In LAK '000 Per ha)	<b>Feb – Nov</b>		
	<b>Existing</b>		<b>New</b>
	<b>Technology</b>	<b>Technology</b>	<b>Increments</b>
	<b>1 to 25</b>	<b>1 to 25</b>	<b>1 to 25</b>
Revenue	6,000	-	-6,000
<b>Input costs</b>			
Farm yard manure	200	-	-200
Rainfed paddy local	120	-	-120
<b>Sub-total Input costs</b>	320	-	-320
<b>Income (Before Labor Costs)</b>	5,680	-	-5,680
<b>Labor costs</b>			
Nursery - Apr male	225	-	-225
Nursery - Apr female	225	-	-225
Planting - Apr male	450	-	-450
Planting - Apr female	450	-	-450
Weeding - Jun male	225	-	-225
Weeding - Jun female	225	-	-225
Weeding - Jul male	225	-	-225
Weeding - Jul female	225	-	-225
Weeding - Aug male	225	-	-225
Weeding - Aug female	225	-	-225
Weeding - Sep male	225	-	-225
Weeding - Sep female	225	-	-225
Weeding - Oct male	225	-	-225
Weeding - Oct female	225	-	-225
Harvest - Nov male	450	-	-450
Harvest - Nov female	450	-	-450
Threshing - Nov male	270	-	-270
Threshing - Nov female	270	-	-270
<b>Sub-total Labor costs</b>	5,040	-	-5,040
<b>Income (After Labor Costs)</b>	640	-	-640

Appendix 2 Table 4 -Yields and Inputs - Paddy rainfed improved variety

YIELDS AND INPUTS (Per ha) /a	Unit	Feb -- Nov					
		Existing Technology		New Technology			
		1 to 5	1	2	3	4	5
Yields	kg	-	3,000	3,063	3,250	3,438	3,500
Operating Inputs							
Farm yard manure	kg	-	1,000	1,000	1,000	1,000	1,000
Rainfed paddy seed - improved	kg	-	-	-	-	-	60
Rainfed paddy improved	kg	-	-	60	60	60	-
Fertiliser 16:20:0	bag	-	-	2	2	2	2
Labor							
Nursery - Apr male	man day	-	5	5	5	5	5
Nursery - Apr female	woman day	-	5	5	5	5	5
Planting - Apr male	man day	-	10	10	10	10	10
Planting - Apr female	woman day	-	10	10	10	10	10
Weeding - Jun male	man day	-	5	5	5	5	5
Weeding - Jun female	woman day	-	5	5	5	5	5
Weeding - Jul male	man day	-	5	5	5	5	5
Weeding - Jul female	woman day	-	5	5	5	5	5
Weeding - Aug male	man day	-	5	5	5	5	5
Weeding - Aug female	woman day	-	5	5	5	5	5
Weeding - Sep male	man day	-	5	5	5	5	5
Weeding - Sep female	woman day	-	5	5	5	5	5
Weeding - Oct male	man day	-	5	5	5	5	5
Weeding - Oct female	woman day	-	5	5	5	5	5
Harvest - Nov male	man day	-	10	10	10	10	10
Harvest - Nov female	woman day	-	10	10	10	10	10
Threshing - Nov male	man day	-	6	6	6	6	6
Threshing - Nov female	woman day	-	6	6	6	6	6

<sup>a</sup>GAP variety

Appendix 2 Table 5 - Financial Budget - Paddy rainfed improved variety

Lao PDR

PICSA

Rainfed Paddy Improved Crop

**FINANCIAL BUDGET**

(In LAK '000 Per ha) /a

	Feb -- Nov					
	Existing Technology		New Technology			
	1 to 5	1	2	3	4	5
Revenue	-	6,000	6,126	6,500	6,876	7,000
<b>Input costs</b>						
Farm yard manure	-	200	200	200	200	200
Rainfed paddy seed - improved	-	-	-	-	-	300
Rainfed paddy improved	-	-	120	120	120	-
Fertiliser 16:20:0	-	-	210	210	210	210
<b>Sub-total Input costs</b>	-	200	530	530	530	710
<b>Income (Before Labor Costs)</b>	-	5,800	5,596	5,970	6,346	6,290
<b>Labor costs</b>						
Nursery - Apr male	-	225	225	225	225	225
Nursery - Apr female	-	225	225	225	225	225
Planting - Apr male	-	450	450	450	450	450
Planting - Apr female	-	450	450	450	450	450
Weeding - Jun male	-	225	225	225	225	225
Weeding - Jun female	-	225	225	225	225	225
Weeding - Jul male	-	225	225	225	225	225
Weeding - Jul female	-	225	225	225	225	225
Weeding - Aug male	-	225	225	225	225	225
Weeding - Aug female	-	225	225	225	225	225
Weeding - Sep male	-	225	225	225	225	225
Weeding - Sep female	-	225	225	225	225	225
Weeding - Oct male	-	225	225	225	225	225
Weeding - Oct female	-	225	225	225	225	225
Harvest - Nov male	-	450	450	450	450	450
Harvest - Nov female	-	450	450	450	450	450
Threshing - Nov male	-	270	270	270	270	270
Threshing - Nov female	-	270	270	270	270	270
<b>Sub-total Labor costs</b>	-	5,040	5,040	5,040	5,040	5,040
<b>Income (After Labor Costs)</b>	-	760	556	930	1,306	1,250

Appendix 2 Table 6 - Yields and Inputs - Irrigated paddy local variety

YIELDS AND INPUTS (Per ha)	Unit	Feb -- Nov	
		Existing Technology	New Technology
		1 to 5	1 to 5
Yields	kg	3,000	-
<b>Operating Inputs</b>			
Farm yard manure	kg	1,000	-
Irrigated paddy - local	kg	60	-
<b>Labor</b>			
Nursery - Apr male	man day	5	-
Nursery - Apr female	woman day	5	-
Planting - Apr male	man day	10	-
Planting - Apr female	woman day	10	-
Weeding - Jun male	man day	5	-
Weeding - Jun female	woman day	5	-
Weeding - Jul male	man day	5	-
Weeding - Jul female	woman day	5	-
Weeding - Aug male	man day	5	-
Weeding - Aug female	woman day	5	-
Weeding - Sep male	man day	5	-
Weeding - Sep female	woman day	5	-
Weeding - Oct male	man day	5	-
Weeding - Oct female	woman day	5	-
Harvest - Nov male	man day	10	-
Harvest - Nov female	woman day	10	-
Threshing - Nov male	man day	6	-
Threshing - Nov female	woman day	6	-

Appendix 2 Table 7 - Financial Budget - Irrigated paddy local variety

Irrigated Paddy Local Crop FINANCIAL BUDGET (In LAK '000 Per ha)	Feb -- Nov	
	Existing New	
	Technology	Technology
	1 to 5	1 to 5
Revenue	6,000	-
<b>Input costs</b>		
Farm yard manure	200	-
Irrigated paddy - local	120	-
<b>Sub-total Input costs</b>	<b>320</b>	-
<b>Income (Before Labor Costs)</b>	<b>5,680</b>	-
<b>Labor costs</b>		
Nursery - Apr male	225	-
Nursery - Apr female	225	-
Planting - Apr male	450	-
Planting - Apr female	450	-
Weeding - Jun male	225	-
Weeding - Jun female	225	-
Weeding - Jul male	225	-
Weeding - Jul female	225	-
Weeding - Aug male	225	-
Weeding - Aug female	225	-
Weeding - Sep male	225	-
Weeding - Sep female	225	-
Weeding - Oct male	225	-
Weeding - Oct female	225	-
Harvest - Nov male	450	-
Harvest - Nov female	450	-
Threshing - Nov male	270	-
Threshing - Nov female	270	-
<b>Sub-total Labor costs</b>	<b>5,040</b>	-
<b>Income (After Labor Costs)</b>	<b>640</b>	-

Appendix 2 Table 8 - Yields and Inputs - Irrigated paddy improved variety

Yield Inputs Operating Inputs Labor	Unit	Feb -- Nov					
		Existing Technology		New Technology			
		1 to 5	1	2	3	4	5
Yields	kg	-	3,000	3,063	3,250	3,438	3,500
Operating							
Inputs							
Farm yard manure	kg	-	1,000	1,000	1,000	1,000	1,000
Irrigated paddy seed - improved	kg	-	-	-	-	-	60
Irrigated paddy - improved	kg	-	-	60	60	60	-
Fertiliser 16:20:0	bag	-	-	2	2	2	2
Labor							
Nursery - Apr male	man day	-	5	5	5	5	5
Nursery - Apr female	woman day	-	5	5	5	5	5
Planting - Apr male	man day	-	10	10	10	10	10
Planting - Apr female	woman day	-	10	10	10	10	10
Weeding - Jun male	man day	-	5	5	5	5	5
Weeding - Jun female	woman day	-	5	5	5	5	5
Weeding - Jul male	man day	-	5	5	5	5	5
Weeding - Jul female	woman day	-	5	5	5	5	5
Weeding - Aug male	man day	-	5	5	5	5	5
Weeding - Aug female	woman day	-	5	5	5	5	5
Weeding - Sep male	man day	-	5	5	5	5	5
Weeding - Sep female	woman day	-	5	5	5	5	5
Weeding - Oct male	man day	-	5	5	5	5	5
Weeding - Oct female	woman day	-	5	5	5	5	5
Harvest - Nov male	man day	-	10	10	10	10	10
Harvest - Nov female	woman day	-	10	10	10	10	10
Threshing - Nov male	man day	-	6	6	6	6	6
Threshing - Nov female	woman day	-	6	6	6	6	6

\a GAP variety

Appendix 2 Table 9 - Financial Budget - Irrigated paddy improved variety

Lao PDR PICSA Irrigated Paddy Improved Crop <b>FINANCIAL BUDGET</b> (In LAK '000 Per ha) /a	Feb -- Nov					
	Existing Technology		New Technology			
	1 to 5	1	2	3	4	5
Revenue	-	6,000	6,126	6,500	6,876	7,000
<b>Input costs</b>						
Farm yard manure	-	200	200	200	200	200
Irrigated paddy seed - improved	-	-	-	-	-	420
Irrigated paddy - improved	-	-	120	120	120	-
Fertiliser 16:20:0	-	-	210	210	210	210
<b>Sub-total Input costs</b>	-	200	530	530	530	830
<b>Income (Before Labor Costs)</b>	-	5,800	5,596	5,970	6,346	6,170
<b>Labor costs</b>						
Nursery - Apr male	-	225	225	225	225	225
Nursery - Apr female	-	225	225	225	225	225
Planting - Apr male	-	450	450	450	450	450
Planting - Apr female	-	450	450	450	450	450
Weeding - Jun male	-	225	225	225	225	225
Weeding - Jun female	-	225	225	225	225	225
Weeding - Jul male	-	225	225	225	225	225
Weeding - Jul female	-	225	225	225	225	225
Weeding - Aug male	-	225	225	225	225	225
Weeding - Aug female	-	225	225	225	225	225
Weeding - Sep male	-	225	225	225	225	225
Weeding - Sep female	-	225	225	225	225	225
Weeding - Oct male	-	225	225	225	225	225
Weeding - Oct female	-	225	225	225	225	225
Harvest - Nov male	-	450	450	450	450	450
Harvest - Nov female	-	450	450	450	450	450
Threshing - Nov male	-	270	270	270	270	270
Threshing - Nov female	-	270	270	270	270	270
<b>Sub-total Labor costs</b>	-	5,040	5,040	5,040	5,040	5,040
<b>Income (After Labor Costs)</b>	-	760	556	930	1,306	1,130

Appendix 2 Table 10 - Yields and Inputs - Maize

YIELDS AND INPUTS (Per ha) /a	Unit	Feb -- Nov									
		Existing Technology					New Technology				
		1	2	3	4	5	1	2	3	4	5
Yields	kg	4,000	3,000	2,000	4,000	3,000	3,000	3,500	4,500	4,500	4,500
Operating Inputs											
Maize seed	kg	15	15	15	15	15	-	-	-	-	-
Improved maize seed	kg	-	-	-	-	-	20	20	20	20	20
Fencing materials	ha	-	-	-	-	-	1	-	-	1	-
Sacks	unit	40	40	40	40	40	40	50	60	70	70
Labor											
Clearing - Feb male	man day	10	10	10	10	10	10	12	12	12	12
Fencing - Apr male	man day	3	3	3	3	3	3	3	3	3	3
Planting - Apr male	man day	10	10	10	10	10	10	10	10	10	10
Weeding - Jun male	man day	5	5	5	5	5	5	5	5	5	5
Weeding - Jul male	man day	5	5	5	5	5	5	5	5	5	5
Weeding - Aug male	man day	5	5	5	5	5	5	5	5	5	5
Weeding - Sep male	man day	5	5	5	5	5	5	5	5	5	5
Weeding - Oct male	man day	5	5	5	5	5	5	5	5	5	5
Harvesting - Nov male	man day	5	5	5	5	5	6	7	8	8	8
Threshing - Nov male	man day	4	4	4	4	4	4	5	6	6	6
Fencing - Apr female	woman day	3	3	3	3	3	3	3	3	3	3
Planting - Apr female	woman day	3	3	3	3	3	3	3	3	3	3
Weeding - Jun female	woman day	3	3	3	3	3	3	3	3	3	3
Weeding - Jul female	woman day	5	5	5	5	5	5	5	5	5	5
Weeding - Aug female	woman day	5	5	5	5	5	5	5	5	5	5
Weeding - Sep female	woman day	5	5	5	5	5	5	5	5	5	5
Weeding - Oct female	woman day	5	5	5	5	5	5	5	5	5	5
Harvest - Nov female	woman day	5	5	5	5	5	6	7	8	8	8
Threshing - Nov female	woman day	3	3	3	3	3	4	5	6	6	6

Appendix 2 Table 11 - Financial Budget - Maize

Lao PDR PICSA Maize Upland Crop <b>FINANCIAL BUDGET</b> (In LAK '000 Per ha) /a	Feb -- Nov									
	Existing Technology					New Technology				
	1	2	3	4	5	1	2	3	4	5
Revenue	4,800	3,600	2,400	4,800	3,600	3,600	4,200	5,400	5,400	5,400
<b>Input costs</b>										
Maize seed	23	23	23	23	23	-	-	-	-	-
Improved maize seed	-	-	-	-	-	40	40	40	40	40
Fencing materials	-	-	-	-	-	1,000	-	-	1,000	-
Sacks	80	80	80	80	80	80	100	120	140	140
<b>Sub-total Input costs</b>	103	103	103	103	103	1,120	140	160	1,180	180
<b>Income (Before Labor Costs)</b>	4,698	3,498	2,298	4,698	3,498	2,480	4,060	5,240	4,220	5,220
<b>Labor costs</b>										
Clearing - Feb male	450	450	450	450	450	450	540	540	540	540
Fencing - Apr male	135	135	135	135	135	135	135	135	135	135
Planting - Apr male	450	450	450	450	450	450	450	450	450	450
Weeding - Jun male	225	225	225	225	225	225	225	225	225	225
Weeding - Jul male	225	225	225	225	225	225	225	225	225	225
Weeding - Aug male	225	225	225	225	225	225	225	225	225	225
Weeding - Sep male	225	225	225	225	225	225	225	225	225	225
Weeding - Oct male	225	225	225	225	225	225	225	225	225	225
Harvesting - Nov male	225	225	225	225	225	270	315	360	360	360
Threshing - Nov male	180	180	180	180	180	180	225	270	270	270
Fencing - Apr female	135	135	135	135	135	135	135	135	135	135
Planting - Apr female	135	135	135	135	135	135	135	135	135	135
Weeding - Jun female	135	135	135	135	135	135	135	135	135	135
Weeding - Jul female	225	225	225	225	225	225	225	225	225	225
Weeding - Aug female	225	225	225	225	225	225	225	225	225	225
Weeding - Sep female	225	225	225	225	225	225	225	225	225	225
Weeding - Oct female	225	225	225	225	225	225	225	225	225	225
Harvest - Nov female	225	225	225	225	225	270	315	360	360	360
Threshing - Nov female	135	135	135	135	135	180	225	270	270	270
<b>Sub-total Labor costs</b>	4,230	4,230	4,230	4,230	4,230	4,365	4,635	4,815	4,815	4,815
<b>Income (After Labor Costs)</b>	468	-733	-1,933	468	-733	-1,885	-575	425	-595	405

Appendix 2 Table 12 - Yields and Inputs - Groundnuts

YIELDS AND INPUTS (Per ha)	Unit	Feb – Nov				
		Existing Technology		New Technology		
		1 to 5	1	2	3	4
Yields	kg	-	600	675	900	1,125
Operating Inputs						1,200
Groundnut seeds	kg	-	120	120	120	120
Fertiliser 16:20:0	bag	-	2	2	2	2
Sacks	unit	-	20	23	30	38
Labor						
Land preparation - Feb male	man day	-	10	10	10	10
Planting - Apr male	man day	-	8	8	8	8
Planting - Apr female	woman day	-	8	8	8	8
Weeding - Jun male	man day	-	4	4	4	4
Weeding - Jun female	woman day	-	4	4	4	4
Weeding - Jul male	man day	-	3	3	3	3
Weeding - Jul female	woman day	-	3	3	3	3
Weeding - Aug male	man day	-	3	3	3	3
Weeding - Aug female	woman day	-	3	3	3	3
Harvest/drying - Aug	man day	-	15	16	18	20
Harvest/drying - Aug female	woman day	-	15	16	18	20

Appendix 2 Table 13 - Financial Budget - Groundnuts

Lao PDR  
 PICSA  
 Groundnut Crop  
**FINANCIAL BUDGET**  
 (In LAK '000 Per ha)

	Existing Technology					
	New Technology					
	1 to 5	1	2	3	4	5
Revenue	-	2,400	2,700	3,600	4,500	4,800
<b>Input costs</b>						
Groundnut seeds	-	480	480	480	480	480
Fertiliser 16:20:0	-	210	210	210	210	210
Sacks	-	40	45	60	75	80
<b>Sub-total Input costs</b>	-	730	735	750	765	770
<b>Income (Before Labor Costs)</b>	-	1,670	1,965	2,850	3,735	4,030
<b>Labor costs</b>						
Land preparation - Feb male	-	450	450	450	450	450
Planting - Apr male	-	338	338	338	338	338
Planting - Apr female	-	338	338	338	338	338
Weeding - Jun male	-	180	180	180	180	180
Weeding - Jun female	-	180	180	180	180	180
Weeding - Jul male	-	135	135	135	135	135
Weeding - Jul female	-	135	135	135	135	135
Weeding - Aug male	-	135	135	135	135	135
Weeding - Aug female	-	135	135	135	135	135
Harvest/drying - Aug	-	675	720	788	900	900
Harvest/drying - Aug female	-	675	720	788	900	900
<b>Sub-total Labor costs</b>	-	3,375	3,465	3,600	3,825	3,825
<b>Income (After Labor Costs)</b>	-	-1,705	-1,500	-750	-90	205

Appendix 2 Table 14 - Yields and Inputs - Watermelon

YIELDS AND INPUTS (Per ha) /a	Unit	Existing Technology					New Technology	
		1 to 5		1	2	3	4	5
		kg	-	5,000	5,500	6,000	6,500	7,000
<b>Yields</b>								
<b>Operating Inputs</b>								
Watermelon seeds	kg	-	1	1	1	1	1	1
Plant protection chemicals	litre	-	4	6	8	8	8	8
Compost	tonne	-	8	9	10	10	10	10
Sacks	unit	-	160	160	160	160	160	160
<b>Labor</b>								
Land preparation - Nov male	man day	-	3	3	3	3	3	3
Land preparation - Nov female	woman day	-	3	3	3	3	3	3
Planting - Dec male	man day	-	15	15	15	15	15	15
Planting - Dec female	woman day	-	15	15	15	15	15	15
Weeding - Dec male	man day	-	6	6	6	6	6	6
Weeding - Dec female	woman day	-	6	6	6	6	6	6
Weeding - Jan male	man day	-	6	6	6	6	6	6
Weeding - Jan female	woman day	-	6	6	6	6	6	6
Weeding - Feb male	man day	-	6	6	6	6	6	6
Weeding - Feb female	woman day	-	6	6	6	6	6	6
Weeding - Mar male	man day	-	6	6	6	6	6	6
Weeding - Mar female	woman day	-	6	6	6	6	6	6
Harvesting - Mar male	man day	-	15	18	20	23	25	25
Harvesting - Mar female	woman day	-	15	18	20	23	25	25
Grading and packing - Mar male	man day	-	5	5	5	5	5	5
Grading and packing - Mar female	woman day	-	5	5	5	5	5	5

Appendix 2 Table 15 - Financial Budget - Watermelon

Lao PDR  
 PICSA  
 Watermelon Crop  
**FINANCIAL BUDGET**  
 (In LAK '000 Per ha) /a

	Existing Technology					
	1 to 5	1	2	3	4	5
Revenue	-	10,000	11,000	12,000	13,000	14,000
<b>Input costs</b>						
Watermelon seeds	-	500	500	500	500	500
Plant protection chemicals	-	300	450	600	600	600
Compost	-	1,344	1,512	1,680	1,680	1,680
Sacks	-	320	320	320	320	320
<b>Sub-total Input costs</b>	-	2,464	2,782	3,100	3,100	3,100
<b>Income (Before Labor Costs)</b>	-	7,536	8,218	8,900	9,900	10,900
<b>Labor costs</b>						
Land preparation - Nov male	-	135	135	135	135	135
Land preparation - Nov female	-	135	135	135	135	135
Planting - Dec male	-	675	675	675	675	675
Planting - Dec female	-	675	675	675	675	675
Weeding - Dec male	-	281	281	281	281	281
Weeding - Dec female	-	281	281	281	281	281
Weeding - Jan male	-	281	281	281	281	281
Weeding - Jan female	-	281	281	281	281	281
Weeding - Feb male	-	281	281	281	281	281
Weeding - Feb female	-	281	281	281	281	281
Weeding - Mar male	-	281	281	281	281	281
Weeding - Mar female	-	281	281	281	281	281
Harvesting - Mar male	-	675	788	900	1,013	1,125
Harvesting - Mar female	-	675	788	900	1,013	1,125
Grading and packing - Mar male	-	225	225	225	225	225
Grading and packing - Mar female	-	225	225	225	225	225
<b>Sub-total Labor costs</b>	-	5,670	5,895	6,120	6,345	6,570
<b>Income (After Labor Costs)</b>	-	1,866	2,323	2,780	3,555	4,330

### Appendix 2 Table 16 - Yields and Inputs - Garlic

Lao PDR  
 PICSA  
 Garlic Crop Model  
**YIELDS AND INPUTS**  
 (Per ha)

	Unit	New Technology				
		1	2	3	4	5
<b>Yields</b>	kg	800	950	1,400	1,850	2,000
<b>Operating Inputs</b>						
Garlic seeds	kg	120	120	120	120	120
Cash crop imported inputs	lump sum	-	300,000	300,000	300,000	300,000
<b>Labor</b>						
Planting - Nov female	woman day	20	20	20	20	20
Planting - Nov male	man day	20	20	20	20	20
Mulching - Nov female	woman day	2	2	2	2	2
Mulching - Nov male	man day	2	2	2	2	2
Weeding - Dec female	woman day	5	5	5	5	5
Weeding - Dec male	man day	5	5	5	5	5
Harvesting - Jan female	woman day	5	5	5	5	5
Harvesting - Jan male	man day	5	5	5	5	5
Bundling bulbs - Feb female	woman day	10	10	10	10	10
Bundling bulbs - Feb male	man day	10	10	10	10	10

### Appendix 2 Table 17 - Financial Budget - Garlic

Lao PDR  
 PICSA  
 Garlic Crop Model  
**FINANCIAL BUDGET**  
 (In LAK '000 Per ha)

	New Technology				
	1	2	3	4	5
<b>Revenue</b>	5,200	6,175	9,100	12,025	13,000
<b>Input costs</b>					
Garlic seeds	3,000	3,000	3,000	3,000	3,000
Cash crop imported inputs	-	300	300	300	300
<b>Sub-total Input costs</b>	3,000	3,300	3,300	3,300	3,300
<b>Income (Before Labor Costs)</b>	2,200	2,875	5,800	8,725	9,700
<b>Labor costs</b>					
Planting - Nov female	900	900	900	900	900
Planting - Nov male	900	900	900	900	900
Mulching - Nov female	90	90	90	90	90
Mulching - Nov male	90	90	90	90	90
Weeding - Dec female	225	225	225	225	225
Weeding - Dec male	225	225	225	225	225
Harvesting - Jan female	225	225	225	225	225
Harvesting - Jan male	225	225	225	225	225
Bundling bulbs - Feb female	450	450	450	450	450
Bundling bulbs - Feb male	450	450	450	450	450
<b>Sub-total Labor costs</b>	3,780	3,780	3,780	3,780	3,780
<b>Income (After Labor Costs)</b>	-1,580	-905	2,020	4,945	5,920

Appendix 2 Table 18 - Yields and Inputs - Orange

Lao People's Democratic Republic  
 Partnerships for Irrigation and Smallholders Commercial Agriculture (PICSA)  
 Final Design Report  
 Annex 4 Economic and Financial Analysis

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Lao PDR  
 PICSA

Oranges Crop Model  
**YIELDS AND INPUTS**  
 (Per ha) /a

	Unit	Existing Technology		New Technology	
		1 to 5	1	2 to 4	5
<b>Yields</b>	kg	-	-	-	4,000
<b>Operating Inputs</b>					
Orange saplings	each	-	400	-	-
Lime	kg	-	12	12	12
Farm yard manure	kg	-	1,000	1,000	1,000
<b>Labor</b>					
Digging pits - Apr male	man day	-	8	-	-
Digging pits - Apr female	woman day	-	7	-	-
Planting - Jun male	man day	-	8	-	-
Planting - Jun female	woman day	-	7	-	-
Weeding - Jul male	man day	-	3	-	-
Weeding - Jul female	woman day	-	2	-	-
Weeding - Aug male	man day	-	3	-	-
Weeding - Aug female	woman day	-	2	-	-
Weeding - Sep male	man day	-	3	-	-
Weeding - Sep female	woman day	-	2	-	-
Water - Oct male	man day	-	3	-	-
Water - Oct female	woman day	-	3	-	-
Water - Nov male	man day	-	3	-	-
Water - Nov female	woman day	-	3	-	-
Water - Dec male	man day	-	3	-	-
Water - Dec female	woman day	-	3	-	-
Water - Jan male	man day	-	3	-	-
Water - Jan female	woman day	-	3	-	-
Water - Feb male	man day	-	3	-	-
Water - Feb female	woman day	-	3	-	-
Water - Mar male	man day	-	3	-	-
Water - Mar female	woman day	-	3	-	-
Water/fertiliser - Apr male	man day	-	-	3	-
Water/fertiliser - Apr female	woman day	-	-	3	-
Water/fertiliser - May male	man day	-	-	3	-
Water/fertiliser - May female	woman day	-	-	3	-
Fertiliser - Jun male	man day	-	-	3	-
Fertiliser - Jun female	woman day	-	-	3	-
Water/fertiliser - Jul male	man day	-	-	6	-
Water/fertiliser - Jul female	woman day	-	-	6	-
Water/fertiliser - Aug male	man day	-	-	6	-
Water/fertiliser - Aug female	woman day	-	-	6	-
Water/fertiliser - Sep male	man day	-	-	6	-
Water/fertiliser - Sep female	woman day	-	-	6	-
Water/fertiliser - Oct male	man day	-	-	3	-
Water/fertiliser - Oct female	woman day	-	-	3	-
Water/fertiliser - Nov male	man day	-	-	3	-
Water/fertiliser - Nov female	woman day	-	-	3	-
Water/fertiliser - Dec male	man day	-	-	3	-
Water/fertiliser - Dec female	woman day	-	-	3	-
Water/fertiliser - Jan male	man day	-	-	3	-
Water/fertiliser - Jan female	woman day	-	-	3	-
Water/fertiliser - Feb male	man day	-	-	3	-
Water/fertiliser - Feb female	woman day	-	-	3	-
Water/fertiliser - Mar male	man day	-	-	3	-
Water/fertiliser - Mar female	woman day	-	-	3	-
Water/fertiliser - Apr male	man day	-	-	-	3
Water/fertiliser - Apr female	woman day	-	-	-	3
Water/fertiliser - May male	man day	-	-	-	3
Water/fertiliser - May female	woman day	-	-	-	3
Fertiliser - Jun male	man day	-	-	-	3
Fertiliser - Jun female	woman day	-	-	-	3
Water/fertiliser - Jul male	man day	-	-	-	6
Water/fertiliser - Jul female	woman day	-	-	-	6
Water/fertiliser - Aug male	man day	-	-	-	6
Water/fertiliser - Aug female	woman day	-	-	-	6
Water/fertiliser - Sep male	man day	-	-	-	6
Water/fertiliser - Sep female	woman day	-	-	-	6
Water - Oct male	man day	-	-	-	3
Fertiliser - Oct female	woman day	-	-	-	3
Harvesting - Nov male	man day	-	-	-	8
Harvesting - Nov female	woman day	-	-	-	7
Harvesting - Dec male	man day	-	-	-	8
Harvesting - Dec female	woman day	-	-	-	7
Water/fertiliser - Feb male	man day	-	-	-	3
Water/fertiliser - Feb female	woman day	-	-	-	3
Water/fertiliser - Mar male	man day	-	-	-	3
Water/fertiliser - Mar female	woman day	-	-	-	3

\a Density of 400 trees per ha i.e. 5m x 5m

## Appendix 2 Table 19 - Financial Budget – Orange

Lao PDR PICSA Oranges Crop Model <b>FINANCIAL BUDGET</b> (In LAK '000 Per ha) /a	Existing Technology			
	1 to 5	1	2 to 4	5
Revenue	-	-	-	20,000
<b>Input costs</b>				
Orange saplings	-	1,200	-	-
Lime	-	24	24	24
Farm yard manure	-	200	200	200
<b>Sub-total Input costs</b>		1,424	224	224
<b>Income (Before Labor Costs)</b>	-	-1,424	-224	19,776
<b>Labor costs</b>				
Digging pits - Apr male	-	360	-	-
Digging pits - Apr female	-	315	-	-
Planting - Jun male	-	360	-	-
Planting - Jun female	-	315	-	-
Weeding - Jul male	-	135	-	-
Weeding - Jul female	-	90	-	-
Weeding - Aug male	-	135	-	-
Weeding - Aug female	-	90	-	-
Weeding - Sep male	-	135	-	-
Weeding - Sep female	-	90	-	-
Water - Oct male	-	135	-	-
Water - Oct female	-	135	-	-
Water - Nov male	-	135	-	-
Water - Nov female	-	135	-	-
Water - Dec male	-	135	-	-
Water - Dec female	-	135	-	-
Water - Jan male	-	135	-	-
Water - Jan female	-	135	-	-
Water - Feb male	-	135	-	-
Water - Feb female	-	135	-	-
Water - Mar male	-	135	-	-
Water - Mar female	-	135	-	-
Water/fertiliser - Apr male	-	-	135	-
Water/fertiliser - Apr female	-	-	135	-
Water/fertiliser - May male	-	-	135	-
Water/fertiliser - May female	-	-	135	-
Fertiliser - Jun male	-	-	135	-
Fertiliser - Jun female	-	-	135	-
Water/fertiliser - Jul male	-	-	270	-
Water/fertiliser - Jul female	-	-	270	-
Water/fertiliser - Aug male	-	-	270	-
Water/fertiliser - Aug female	-	-	270	-
Water/fertiliser - Sep male	-	-	270	-
Water/fertiliser - Sep female	-	-	270	-
Water/fertiliser - Oct male	-	-	135	-
Water/fertiliser - Oct female	-	-	135	-
Water/fertiliser - Nov male	-	-	135	-
Water/fertiliser - Nov female	-	-	135	-
Water/fertiliser - Dec male	-	-	135	-
Water/fertiliser - Dec female	-	-	135	-
Water/fertiliser - Jan male	-	-	135	-
Water/fertiliser - Jan female	-	-	135	-
Water/fertiliser - Feb male	-	-	135	-
Water/fertiliser - Feb female	-	-	135	-
Water/fertiliser - Mar male	-	-	135	-
Water/fertiliser - Mar female	-	-	135	-
Water/fertiliser - Apr male	-	-	-	135
Water/fertiliser - Apr female	-	-	-	135
Water/fertiliser - May male	-	-	-	135
Water/fertiliser - May female	-	-	-	135
Fertiliser - Jun male	-	-	-	135
Fertiliser - Jun female	-	-	-	135
Water/fertiliser - Jul male	-	-	-	270
Water/fertiliser - Jul female	-	-	-	270
Water/fertiliser - Aug male	-	-	-	270
Water/fertiliser - Aug female	-	-	-	270
Water/fertiliser - Sep male	-	-	-	270
Water/fertiliser - Sep female	-	-	-	270
Water - Oct male	-	-	-	135
Fertiliser - Oct female	-	-	-	135
Harvesting - Nov male	-	-	-	360
Harvesting - Nov female	-	-	-	315
Harvesting - Dec male	-	-	-	360
Harvesting - Dec female	-	-	-	315
Water/fertiliser - Feb male	-	-	-	135
Water/fertiliser - Feb female	-	-	-	135
Water/fertiliser - Mar male	-	-	-	135
Water/fertiliser - Mar female	-	-	-	135
<b>Sub-total Labor costs</b>	-	3,645	4,050	4,590
<b>Income (After Labor Costs)</b>	-	-5,069	-4,274	15,186

Appendix 2 Table 20 - Rainfed Paddy Household - Production and Inputs

Lao PDR

PICSA

Model A: Rainfed Paddy Only Household

**PRODUCTION AND INPUTS (Detailed)**

(In Units)

	Unit	Without Project					With Project	
		1 to 5	1	2	3	4	5	
<b>Main Production</b>								
Rainfed paddy local	kg	3,000	-	-	-	-	-	-
Rainfed paddy improved	kg	-	3,000	3,063	3,250	3,438	3,500	
Peanut pods	kg	-	300	338	450	563	600	
<b>On-Farm Use</b>								
Rainfed paddy local	kg	60	-	-	-	-	-	-
Rainfed paddy improved	kg	-	-	60	60	60	-	-
<b>On-Farm Consumption</b>								
Rainfed paddy local	kg	1,500	-	-	-	-	-	-
Rainfed paddy improved	kg	-	1,500	1,500	1,500	1,500	1,500	1,500
<b>Sales</b>								
Rainfed paddy local	kg	1,440	-	-	-	-	-	-
Rainfed paddy improved	kg	-	1,500	1,503	1,690	1,878	2,000	
Peanut pods	kg	-	300	338	450	563	600	
<b>Investment</b>								
PICSA production package	lump sum	-	1	-	-	-	-	-
PICSA investment package	lump sum	-	1	-	-	-	-	-
PICSA capacity building package	lump sum	-	1	-	-	-	-	-
Maintenance production assets	lump sum	-	-	144,500	144,500	144,500	144,500	144,500
<b>Operating</b>								
<b>Purchased Inputs</b>								
Rainfed paddy seed - improved	kg	-	-	-	-	-	-	60
Groundnut seeds	kg	-	60	60	60	60	60	60
Farm yard manure	kg	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Fertiliser 16:20:0	bag	-	1	3	3	3	3	3
Sacks	unit	-	10	11	15	19	20	
Capacity building	lump sum	-	-	255,000	255,000	255,000	255,000	255,000
<b>Labor</b>								
Feb male -	man day	-	5	5	5	5	5	5
Apr male -	man day	15	19	19	19	19	19	19
Jun male -	man day	5	7	7	7	7	7	7
Jul male -	man day	5	7	7	7	7	7	7
Aug male -	man day	5	14	15	15	17	17	17
Sept male -	man day	5	5	5	5	5	5	5
Oct male -	man day	5	5	5	5	5	5	5
Nov male -	man day	16	16	16	16	16	16	16
Apr female -	woman day	15	19	19	19	19	19	19
Jun female -	woman day	5	7	7	7	7	7	7
Jul female -	woman day	5	7	7	7	7	7	7
Aug female -	woman day	5	14	15	15	17	17	17
Sep female -	woman day	5	5	5	5	5	5	5
Oct female -	woman day	5	5	5	5	5	5	5
Nov female -	woman day	16	16	16	16	16	16	16

Appendix 2 Table 21 - Rainfed Paddy Household - Financial Budget

Lao PDR

PICSA

Model A: Rainfed Paddy Only Household

**FINANCIAL BUDGET (DETAILED)**

(In LAK '000)

**Main Production**

	Without Project					
	With Project					
	1 to 5	1	2	3	4	5
Rainfed paddy local	6,000	-	-	-	-	-
Rainfed paddy improved	-	6,000	6,126	6,500	6,876	7,000
Peanut pods	-	1,200	1,350	1,800	2,250	2,400
<b>Sub-total Main Production</b>	<b>6,000</b>	<b>7,200</b>	<b>7,476</b>	<b>8,300</b>	<b>9,126</b>	<b>9,400</b>

**On-Farm Use**

Rainfed paddy local	120	-	-	-	-	-
Rainfed paddy improved	-	-	120	120	120	-
<b>Sub-Total On-Farm Use</b>	<b>120</b>	<b>-</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>-</b>

**On-Farm Consumption**

Rainfed paddy local	3,000	-	-	-	-	-
Rainfed paddy improved	-	3,000	3,000	3,000	3,000	3,000
<b>Sub-Total On-Farm Consumption</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>

**Net Value Of Production**

**Production Cost**

	Investment					
	PICSA production package	PICSA investment package	PICSA capacity building package	Maintenance production assets		
PICSA production package	-	935	-	-	-	-
PICSA investment package	-	1,445	-	-	-	-
PICSA capacity building package	-	255	-	-	-	-
Maintenance production assets	-	-	145	145	145	145
<b>Sub-total Investment Costs</b>	<b>-</b>	<b>2,635</b>	<b>145</b>	<b>145</b>	<b>145</b>	<b>145</b>

**Operating**

	Purchased Inputs					
	Rainfed paddy seed - improved	Groundnut seeds	Farm yard manure	Fertiliser 16:20:0	Sacks	Capacity building
Rainfed paddy seed - improved	-	-	-	-	-	300
Groundnut seeds	-	240	240	240	240	240
Farm yard manure	200	200	200	200	200	200
Fertiliser 16:20:0	-	105	315	315	315	315
Sacks	-	20	23	30	38	40
Capacity building	-	-	255	255	255	255
<b>Sub-Total Purchased Inputs</b>	<b>200</b>	<b>565</b>	<b>1,033</b>	<b>1,040</b>	<b>1,048</b>	<b>1,350</b>

**Labor**

	Apr female -					
Apr female -	-	34	34	34	34	34
<b>Sub-total Operating Costs</b>	<b>200</b>	<b>599</b>	<b>1,066</b>	<b>1,074</b>	<b>1,081</b>	<b>1,384</b>

**Sub-Total Production Cost**

**Taxes**

	Land tax					
Land tax	25	25	25	25	25	25
<b>OUTFLOWS</b>	<b>225</b>	<b>3,259</b>	<b>1,236</b>	<b>1,243</b>	<b>1,251</b>	<b>1,553</b>

**Cash Flow Before Financing**

**Farm Family Benefits Before Financing**

**Financial Inflows**

Disbursements on Short Term Loan	200	599	1,066	1,074	1,081	1,384
Transfer from Previous Period	-	-	145	145	145	145
Contribution from own savings	-	1,241	-	-	-	-

**Grants**

Production package grant	-	468	-	-	-	-
Investment package grant	-	723	-	-	-	-
Capacity building grant	-	204	-	-	-	-
<b>Sub-Total Grants</b>	<b>-</b>	<b>1,394</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

**Sub-Total Financial Inflows**

Short Term Principal	200	599	1,066	1,074	1,081	1,384
Short Term Interest	12	36	64	64	65	83
Transfer to Next Period	-	145	145	145	145	145

**Sub-Total Financial Outflows**

212	779	1,275	1,283	1,291	1,611
-12	2,455	-64	-64	-65	-83
2,643	3,396	3,056	3,872	4,690	4,764

**Cash Flow After Financing**

**Change in Net Worth**

Contribution from own savings	-	1,241	-	-	-	-
Residual value of	-	-	-	-	-	-
Transfer to Next Period	-	-	-	-	-	-

**Sub-Total Change in Net Worth**

-1,241	-	-	-	-	-	-
5,643	5,155	6,056	6,872	7,690	7,764	
50	35	40	45	50	50	

50	35	40	45	50	50	
-	-	-	11	31	49	51
-	-	-	-	-	-	

Appendix 2 Table 22 - Rainfed Paddy & Upland Household - Production & Inputs

(In Units) / a	Unit	Without Project					With Project				
		1	2	3	4	5	1	2	3	4	5
<b>Main Production</b>											
Rainfed paddy local	kg	3,000	3,000	3,000	3,000	3,000	-	-	-	-	-
Rainfed paddy improved	kg	-	-	-	-	-	3,000	3,063	3,250	3,438	3,500
Maize	kg	4,000	3,000	2,000	4,000	3,000	3,000	3,500	4,500	4,500	2,250
Peanut pods	kg	-	-	-	-	-	300	338	450	563	600
Watermelon	kg	-	-	-	-	-	1,250	1,375	1,500	1,625	1,750
Oranges	kg	-	-	-	-	-	-	-	-	-	2,000
<b>On-Farm Use</b>											
Rainfed paddy local	kg	60	60	60	60	60	-	-	-	-	-
Rainfed paddy improved	kg	-	-	-	-	-	-	60	60	60	-
<b>On-Farm Consumption</b>											
Rainfed paddy local	kg	1,500	1,500	1,500	1,500	1,500	-	-	-	-	-
Rainfed paddy improved	kg	-	-	-	-	-	1,500	1,500	1,500	1,500	1,500
<b>Sales</b>											
Rainfed paddy local	kg	1,440	1,440	1,440	1,440	1,440	-	-	-	-	-
Rainfed paddy improved	kg	-	-	-	-	-	1,500	1,503	1,690	1,878	2,000
Maize	kg	4,000	3,000	2,000	4,000	3,000	3,000	3,500	4,500	4,500	2,250
Peanut pods	kg	-	-	-	-	-	300	338	450	563	600
Watermelon	kg	-	-	-	-	-	1,250	1,375	1,500	1,625	1,750
Oranges	kg	-	-	-	-	-	-	-	-	-	2,000
<b>Investment</b>											
PICSA production package	lump sum	-	-	-	-	-	1	-	-	-	-
PICSA investment package	lump sum	-	-	-	-	-	1	-	-	-	-
PICSA capacity building package	lump sum	-	-	-	-	-	1	-	-	-	-
Maintenance production assets	lump sum	-	-	-	-	-	-	314,500	314,500	314,500	314,500
<b>Operating</b>											
<b>Purchased Inputs</b>											
Rainfed paddy seed - improved	kg	-	-	-	-	-	-	-	-	-	60
Maize seed	kg	15	15	15	15	15	-	-	-	-	-
Improved maize seed	kg	-	-	-	-	-	20	20	20	20	10
Watermelon seeds	kg	-	-	-	-	-	0	0	0	0	0
Groundnut seeds	kg	-	-	-	-	-	60	60	60	60	60
Farm yard manure	kg	1,000	1,000	1,000	1,000	1,000	1,500	1,500	1,500	1,500	1,500
Fertiliser 16:20:0	bag	-	-	-	-	-	1	3	3	3	3
Plant protection chemicals	litre	-	-	-	-	-	1	2	2	2	2
Compost	tonne	-	-	-	-	-	2	2	3	3	3
Fencing materials	ha	-	-	-	-	-	1	-	-	1	-
Sacks	unit	40	40	40	40	40	90	101	115	129	95
Capacity building	lump sum	-	-	-	-	-	255,000	255,000	255,000	255,000	255,000
Orange saplings	each	-	-	-	-	-	200	-	-	-	-
Lime	kg	-	-	-	-	-	6	6	6	6	6
<b>Labor</b>											
Jan male -	man day	-	-	-	-	-	3	3	3	3	2
Feb male -	man day	10	10	10	10	10	18	20	20	20	14
Mar male -	man day	-	-	-	-	-	8	9	9	10	11
Apr male -	man day	28	28	28	28	28	36	33	33	33	27
May male -	man day	-	-	-	-	-	-	2	2	2	2
Jun male -	man day	10	10	10	10	10	16	14	14	14	11
Jul male -	man day	10	10	10	10	10	13	15	15	15	12
Aug male -	man day	10	10	10	10	10	21	23	23	25	22
Sept male -	man day	10	10	10	10	10	12	13	13	13	11
Oct male -	man day	10	10	10	10	10	12	12	12	12	9
Nov male -	man day	25	25	25	25	25	28	30	32	32	28
Dec male -	man day	-	-	-	-	-	7	7	7	7	9
Jan female -	woman day	-	-	-	-	-	3	3	3	3	2
Feb female -	woman day	-	-	-	-	-	3	3	3	3	3
Mar female -	woman day	-	-	-	-	-	8	9	9	10	11
Apr female -	woman day	21	21	21	21	21	28	26	26	26	23
May female -	woman day	-	-	-	-	-	-	2	2	2	2
Jun female -	woman day	8	8	8	8	8	14	12	12	12	10
Jul female -	woman day	10	10	10	10	10	13	15	15	15	12
Aug female -	woman day	10	10	10	10	10	20	23	23	25	22
Sep female -	woman day	10	10	10	10	10	11	13	13	13	11
Oct female -	woman day	10	10	10	10	10	12	12	12	12	9
Nov female -	woman day	24	24	24	24	24	28	30	32	32	27
Dec female -	woman day	-	-	-	-	-	7	7	7	7	9

## Appendix 2 Table 23 - Rainfed Paddy and Upland Household - Financial Budget

Lao PDR  
 PICSA

Model B: Rainfed Paddy and Upland Household

### FINANCIAL BUDGET (DETAILED)

(In LAK '000) /a

	Without Project					With Project				
	1	2	3	4	5	1	2	3	4	5
<b>Main Production</b>										
Rainfed paddy local	6,000	6,000	6,000	6,000	6,000	-	-	-	-	-
Rainfed paddy improved	-	-	-	-	-	6,000	6,126	6,500	6,876	7,000
Maize	4,800	3,600	2,400	4,800	3,600	3,600	4,200	5,400	5,400	2,700
Peanut pods	-	-	-	-	-	1,200	1,350	1,800	2,250	2,400
Watermelon	-	-	-	-	-	2,500	2,750	3,000	3,250	3,500
Oranges	-	-	-	-	-	-	-	-	-	10,000
<b>Sub-total Main Production</b>	<b>10,800</b>	<b>9,600</b>	<b>8,400</b>	<b>10,800</b>	<b>9,600</b>	<b>13,300</b>	<b>14,426</b>	<b>16,700</b>	<b>17,776</b>	<b>25,600</b>
<b>On-Farm Use</b>										
Rainfed paddy local	120	120	120	120	120	-	-	-	-	-
Rainfed paddy improved	-	-	-	-	-	-	120	120	120	-
<b>Sub-Total On-Farm Use</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>-</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>-</b>
<b>On-Farm Consumption</b>										
Rainfed paddy local	3,000	3,000	3,000	3,000	3,000	-	-	-	-	-
Rainfed paddy improved	-	-	-	-	-	3,000	3,000	3,000	3,000	3,000
<b>Sub-Total On-Farm Consumption</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>
<b>Net Value Of Production</b>	<b>7,680</b>	<b>6,480</b>	<b>5,280</b>	<b>7,680</b>	<b>6,480</b>	<b>10,300</b>	<b>11,306</b>	<b>13,580</b>	<b>14,656</b>	<b>22,600</b>
<b>Production Cost</b>										
<b>Investment</b>										
PICSA production package	-	-	-	-	-	3,230	-	-	-	-
PICSA investment package	-	-	-	-	-	3,145	-	-	-	-
PICSA capacity building package	-	-	-	-	-	255	-	-	-	-
Maintenance production assets	-	-	-	-	-	-	315	315	315	315
<b>Sub-total Investment Costs</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6,630</b>	<b>315</b>	<b>315</b>	<b>315</b>	<b>315</b>
<b>Operating</b>										
<b>Purchased Inputs</b>										
Rainfed paddy seed - improved	-	-	-	-	-	-	-	-	-	300
Maize seed	23	23	23	23	23	-	-	-	-	-
Improved maize seed	-	-	-	-	-	40	40	40	40	20
Watermelon seeds	-	-	-	-	-	125	125	125	125	125
Groundnut seeds	-	-	-	-	-	240	240	240	240	240
Farm yard manure	200	200	200	200	200	300	300	300	300	300
Fertiliser 16.20.0	-	-	-	-	-	105	315	315	315	315
Plant protection chemicals	-	-	-	-	-	75	113	150	150	150
Compost	-	-	-	-	-	336	378	420	420	420
Fencing materials	-	-	-	-	-	1,000	-	-	1,000	-
Sacks	80	80	80	80	80	180	203	230	258	190
Capacity building	-	-	-	-	-	-	255	255	255	255
Orange saplings	-	-	-	-	-	600	-	-	-	-
Lime	-	-	-	-	-	12	12	12	12	12
<b>Sub-Total Purchased Inputs</b>	<b>303</b>	<b>303</b>	<b>303</b>	<b>303</b>	<b>303</b>	<b>3,013</b>	<b>1,980</b>	<b>2,087</b>	<b>3,115</b>	<b>2,327</b>
<b>Labor</b>										
Apr male -	45	45	45	45	45	394	281	281	281	-
Nov male -	-	-	-	-	-	56	146	236	236	34
Apr female -	135	135	135	135	135	461	371	371	371	236
Aug female -	-	-	-	-	-	45	158	191	248	135
Nov female -	270	270	270	270	270	461	551	641	641	416
<b>Sub-Total Hired Labor</b>	<b>450</b>	<b>450</b>	<b>450</b>	<b>450</b>	<b>450</b>	<b>1,418</b>	<b>1,508</b>	<b>1,721</b>	<b>1,778</b>	<b>821</b>
<b>Sub-total Operating Costs</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>4,431</b>	<b>3,488</b>	<b>3,808</b>	<b>4,892</b>	<b>3,148</b>
<b>Sub-Total Production Cost</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>11,061</b>	<b>3,802</b>	<b>4,123</b>	<b>5,207</b>	<b>3,463</b>
<b>Taxes</b>										
Land tax - paddy	25	25	25	25	25	25	25	25	25	25
Land tax - upland	70	70	70	70	70	70	70	70	70	70
<b>Sub-Total Taxes</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>
<b>OUTFLOWS</b>										
<b>Cash Flow Before Financing</b>	<b>848</b>	<b>848</b>	<b>848</b>	<b>848</b>	<b>848</b>	<b>11,156</b>	<b>3,897</b>	<b>4,218</b>	<b>5,302</b>	<b>3,558</b>
<b>Farm Family Benefits Before Financing</b>	<b>6,833</b>	<b>5,633</b>	<b>4,433</b>	<b>6,833</b>	<b>5,633</b>	<b>-856</b>	<b>7,409</b>	<b>9,362</b>	<b>9,355</b>	<b>19,042</b>
<b>Financial Inflows</b>	<b>9,833</b>	<b>8,633</b>	<b>7,433</b>	<b>9,833</b>	<b>8,633</b>	<b>2,145</b>	<b>10,409</b>	<b>12,362</b>	<b>12,355</b>	<b>22,042</b>
Disbursements on Short Term Loan										
753	753	753	753	753	753	4,431	3,488	3,808	4,892	3,148
Transfer from Previous Period	-	-	-	-	-	-	315	315	315	315
Contribution from own savings	-	-	-	-	-	3,239	-	-	-	-
<b>Grants</b>										
Production package grant	-	-	-	-	-	1,615	-	-	-	-
Investment package grant	-	-	-	-	-	1,573	-	-	-	-
Capacity building grants	-	-	-	-	-	204	-	-	-	-
<b>Sub-Total Grants</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3,392</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Sub-Total Financial Inflows</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>753</b>	<b>11,061</b>	<b>3,802</b>	<b>4,123</b>	<b>5,207</b>	<b>3,463</b>
<b>Financial Outflows</b>										
Short Term Principal	753	753	753	753	753	4,431	3,488	3,808	4,892	3,148
Short Term Interest	45	45	45	45	45	266	209	228	294	189
Transfer to Next Period	-	-	-	-	-	315	315	315	315	315
<b>Sub-Total Financial Outflows</b>	<b>798</b>	<b>798</b>	<b>798</b>	<b>798</b>	<b>798</b>	<b>5,011</b>	<b>4,011</b>	<b>4,351</b>	<b>5,500</b>	<b>3,652</b>
<b>Net Financing</b>	<b>-45</b>	<b>-45</b>	<b>-45</b>	<b>-45</b>	<b>-45</b>	<b>6,050</b>	<b>-209</b>	<b>-228</b>	<b>-294</b>	<b>-189</b>
<b>Cash Flow After Financing</b>	<b>6,787</b>	<b>5,587</b>	<b>4,387</b>	<b>6,787</b>	<b>5,587</b>	<b>5,194</b>	<b>7,200</b>	<b>9,134</b>	<b>9,061</b>	<b>18,853</b>
<b>Change in Net Worth</b>										
Contribution from own savings	-	-	-	-	-	3,239	-	-	-	-
Residual value of	-	-	-	-	-	-	-	-	-	-
Transfer to Next Period	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Change in Net Worth</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-3,239</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Farm Family Benefits After Financing</b>	<b>9,787</b>	<b>8,587</b>	<b>7,387</b>	<b>9,787</b>	<b>8,587</b>	<b>4,956</b>	<b>10,200</b>	<b>12,134</b>	<b>12,061</b>	<b>21,853</b>
<b>Returns per Family-Day of Labor</b>	<b>50</b>	<b>44</b>	<b>38</b>	<b>50</b>	<b>44</b>	<b>17</b>	<b>34</b>	<b>40</b>	<b>40</b>	<b>79</b>
<b>Incremental Returns per Incremental Family-Day of Labor</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>16</b>	<b>46</b>	<b>21</b>	<b>163</b>

Appendix 2 Table 24 - Irrigated Paddy Household - Production and Inputs

Lao PDR PICSA Model C: Irrigated Paddy Only Household <b>PRODUCTION AND INPUTS (Detailed)</b> (In Units)	Unit	Without Project					With Project	
		1 to 5	1	2	3	4	5	
<b>Main Production</b>								
Irrigated paddy - local	kg	4,500	-	-	-	-	-	-
Irrigated paddy - improved	kg	-	3,000	3,063	3,250	3,438	3,500	
Peanut pods	kg	-	600	675	900	1,125	1,200	
Garlic	kg	-	800	950	1,400	1,850	2,000	
<b>On-Farm Use</b>								
Irrigated paddy - local	kg	90	-	-	-	-	-	-
Irrigated paddy - improved	kg	-	-	60	60	60	60	-
<b>On-Farm Consumption</b>								
Rainfed paddy local	kg	1,500	-	-	-	-	-	-
Rainfed paddy improved	kg	-	1,500	1,500	1,500	1,500	1,500	1,500
<b>Sales</b>								
Irrigated paddy - local	kg	4,410	-	-	-	-	-	-
Irrigated paddy - improved	kg	-	3,000	3,003	3,190	3,378	3,500	
Peanut pods	kg	-	600	675	900	1,125	1,200	
Garlic	kg	-	800	950	1,400	1,850	2,000	
<b>Investment</b>								
PICSA production package	lump sum	-	1	-	-	-	-	-
PICSA investment package	lump sum	-	1	-	-	-	-	-
PICSA capacity building package	lump sum	-	1	-	-	-	-	-
Maintenance production assets	lump sum	-	-	382,500	382,500	382,500	382,500	
Equipment (pest control and irrigation)	lump sum	-	-	-	-	-	445,000	
<b>Operating</b>								
<b>Purchased Inputs</b>								
Irrigated paddy seed - improved	kg	-	-	-	-	-	-	60
Groundnut seeds	kg	-	120	120	120	120	120	120
Garlic seeds	kg	-	120	120	120	120	120	120
Farm yard manure	kg	1,500	1,000	1,000	1,000	1,000	1,000	1,000
Fertiliser 16:20:0	bag	-	2	4	4	4	4	4
Sacks	unit	-	20	23	30	38	40	
Capacity building	lump sum	-	-	255,000	255,000	255,000	255,000	
Land preparation (furrowing)	lump sum	-	-	550,000	550,000	550,000	550,000	
Cash crop imported inputs	lump sum	-	-	300,000	300,000	300,000	300,000	
<b>Labor</b>								
Jan male -	man day	-	5	5	5	5	5	5
Feb male -	man day	-	20	20	20	20	20	20
Apr male -	man day	23	23	23	23	23	23	23
Jun male -	man day	8	9	9	9	9	9	9
Jul male -	man day	8	8	8	8	8	8	8
Aug male -	man day	8	23	24	26	28	28	28
Sept male -	man day	8	5	5	5	5	5	5
Oct male -	man day	8	5	5	5	5	5	5
Nov male -	man day	24	38	38	38	38	38	38
Dec male -	man day	-	5	5	5	5	5	5
Jan female -	woman day	-	5	5	5	5	5	5
Feb female -	woman day	-	10	10	10	10	10	10
Apr female -	woman day	23	23	23	23	23	23	23
Jun female -	woman day	8	9	9	9	9	9	9
Jul female -	woman day	8	8	8	8	8	8	8
Aug female -	woman day	8	23	24	26	28	28	28
Sep female -	woman day	8	5	5	5	5	5	5
Oct female -	woman day	8	5	5	5	5	5	5
Nov female -	woman day	24	38	38	38	38	38	38
Dec female -	woman day	-	5	5	5	5	5	5

**Appendix 2 Table 25 - Irrigated Paddy Household - Financial Budget**

Lao PDR  
 PICSA  
 Model C: Irrigated Paddy Only Household  
**FINANCIAL BUDGET (DETAILED)**  
 (In LAK '000)

	Without Project					
	With Project					
	1 to 5	1	2	3	4	5
<b>Main Production</b>						
Irrigated paddy - local	9,000	-	-	-	-	-
Irrigated paddy - improved	-	6,000	6,126	6,500	6,876	7,000
Peanut pods	-	2,400	2,700	3,600	4,500	4,800
Garlic	-	5,200	6,175	9,100	12,025	13,000
<b>Sub-total Main Production</b>	9,000	13,600	15,001	19,200	23,401	24,800
<b>On-Farm Use</b>						
Irrigated paddy - local	180	-	-	-	-	-
Irrigated paddy - improved	-	-	120	120	120	-
<b>Sub-Total On-Farm Use</b>	180	-	120	120	120	-
<b>On-Farm Consumption</b>						
Rainfed paddy local	3,000	-	-	-	-	-
Rainfed paddy improved	-	3,000	3,000	3,000	3,000	3,000
<b>Sub-Total On-Farm Consumption</b>	3,000	3,000	3,000	3,000	3,000	3,000
<b>Net Value Of Production</b>	5,820	10,600	11,881	16,080	20,281	21,800
<b>Production Cost</b>						
<b>Investment</b>						
PICSA production package	-	2,805	-	-	-	-
PICSA investment package	-	2,550	-	-	-	-
PICSA capacity building package	-	255	-	-	-	-
Maintenance production assets	-	-	383	383	383	383
Equipment (pest control and irrigation)	-	-	-	-	-	445
<b>Sub-total Investment Costs</b>	-	5,610	383	383	383	828
<b>Operating</b>						
<b>Purchased Inputs</b>						
Irrigated paddy seed - improved	-	-	-	-	-	420
Groundnut seeds	-	480	480	480	480	480
Garlic seeds	-	3,000	3,000	3,000	3,000	3,000
Farm yard manure	300	200	200	200	200	200
Fertiliser 16:20:0	-	210	420	420	420	420
Sacks	-	40	45	60	75	80
Capacity building	-	-	255	255	255	255
Land preparation (furrowing)	-	-	550	550	550	550
Cash crop imported inputs	-	-	300	300	300	300
<b>Sub-Total Purchased Inputs</b>	300	3,930	5,250	5,265	5,280	5,705
<b>Labor</b>						
Nov male -	-	495	495	495	495	495
Apr female -	203	203	203	203	203	203
Aug female -	-	180	225	293	405	405
Nov female -	270	900	900	900	900	900
<b>Sub-Total Hired Labor</b>	473	1,778	1,823	1,890	2,003	2,003
<b>Sub-total Operating Costs</b>	773	5,708	7,073	7,155	7,283	7,708
<b>Sub-Total Production Cost</b>	773	11,318	7,455	7,538	7,665	8,535
<b>Other Costs</b>						
WUG annual fees	-	-	500	500	500	500
<b>Taxes</b>						
Land tax - paddy	25	25	25	25	25	25
<b>OUTFLOWS</b>	798	11,343	7,980	8,063	8,190	9,060
<b>Cash Flow Before Financing</b>	5,023	-743	3,901	8,018	12,091	12,740
<b>Farm Family Benefits Before Financing</b>	8,023	2,258	6,901	11,018	15,091	15,740
<b>Financial Inflows</b>						
Disbursements on Short Term Loan	773	5,708	7,073	7,155	7,283	7,708
Transfer from Previous Period	-	-	383	383	383	828
Contribution from own savings	-	2,729	-	-	-	-
<b>Grants</b>						
Production package grant	-	1,403	-	-	-	-
Investment package grant	-	1,275	-	-	-	-
Capacity building grants	-	204	-	-	-	-
<b>Sub-Total Grants</b>	-	2,882	-	-	-	-
<b>Sub-Total Financial Inflows</b>	773	11,318	7,455	7,538	7,665	8,535
<b>Financial Outflows</b>						
Short Term Principal	773	5,708	7,073	7,155	7,283	7,708
Short Term Interest	46	342	424	429	437	462
Transfer to Next Period	-	383	383	383	828	383
<b>Sub-Total Financial Outflows</b>	819	6,432	7,879	7,967	8,547	8,552
<b>Net Financing</b>	-46	4,885	-424	-429	-882	-17
<b>Cash Flow After Financing</b>	4,976	4,143	3,477	7,588	11,209	12,723
<b>Change in Net Worth</b>						
Contribution from own savings	-	2,729	-	-	-	-
Residual value of	-	-	-	-	-	-
Transfer to Next Period	-	-	-	-	-	-
<b>Sub-Total Change in Net Worth</b>	-	-2,729	-	-	-	-
<b>Farm Family Benefits After Financing</b>	7,976	4,414	6,477	10,588	14,209	15,723
<b>Returns per Family-Day of Labor</b>	51	19	28	45	60	66
<b>Incremental Returns per Incremental Family-Day of Labor</b>	-	-	-	34	79	98

**Appendix 2 Table 26 - Irrigated Paddy & Upland Household - Production & Inputs**

Lao PDR  
 PICSA  
 Model D: Irrigated Paddy and Upland Household  
**PRODUCTION AND INPUTS (Detailed)**  
 (In Units) /a

Unit	Without Project					With Project				
	1	2	3	4	5	1	2	3	4	5
<b>Main Production</b>										
Irrigated paddy - local	kg	4,500	4,500	4,500	4,500	4,500	-	-	-	-
Irrigated paddy - improved	kg	-	-	-	-	-	3,000	3,063	3,250	3,438
Maize	kg	4,000	3,000	2,000	4,000	3,000	3,000	3,500	4,500	4,500
Peanut pods	kg	-	-	-	-	-	600	675	900	1,125
Watermelon	kg	-	-	-	-	-	1,250	1,375	1,500	1,625
Garlic	kg	-	-	-	-	-	800	950	1,400	1,850
Oranges	kg	-	-	-	-	-	-	-	-	2,000
<b>On-Farm Use</b>										
Irrigated paddy - local	kg	90	90	90	90	90	-	-	-	-
Irrigated paddy - improved	kg	-	-	-	-	-	60	60	60	-
<b>On-Farm Consumption</b>										
Rainfed paddy local	kg	1,500	1,500	1,500	1,500	1,500	-	-	-	-
Rainfed paddy improved	kg	-	-	-	-	-	1,500	1,500	1,500	1,500
<b>Sales</b>										
Irrigated paddy - local	kg	4,410	4,410	4,410	4,410	4,410	-	-	-	-
Irrigated paddy - improved	kg	-	-	-	-	-	3,000	3,003	3,190	3,378
Maize	kg	4,000	3,000	2,000	4,000	3,000	3,000	3,500	4,500	4,500
Peanut pods	kg	-	-	-	-	-	600	675	900	1,125
Watermelon	kg	-	-	-	-	-	1,250	1,375	1,500	1,625
Garlic	kg	-	-	-	-	-	800	950	1,400	1,850
Oranges	kg	-	-	-	-	-	-	-	-	2,000
<b>Investment</b>										
PICSA production package	lump sum	-	-	-	-	-	1	-	-	-
PICSA investment package	lump sum	-	-	-	-	-	1	-	-	-
PICSA capacity building package	lump sum	-	-	-	-	-	1	-	-	-
Maintenance production assets	lump sum	-	-	-	-	-	637,500	637,500	637,500	637,500
<b>Operating</b>										
<b>Purchased Inputs</b>										
Irrigated paddy seed - improved	kg	-	-	-	-	-	-	-	-	60
Maize seed	kg	15	15	15	15	15	-	-	-	-
Improved maize seed	kg	-	-	-	-	-	20	20	20	20
Watermelon seeds	kg	-	-	-	-	-	0	0	0	0
Groundnut seeds	kg	-	-	-	-	-	120	120	120	120
Garlic seeds	kg	-	-	-	-	-	120	120	120	120
Farm yard manure	kg	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Fertiliser 16:20:0	bag	-	-	-	-	-	2	4	4	4
Plant protection chemicals	litre	-	-	-	-	-	1	2	2	2
Compost	tonne	-	-	-	-	-	2	2	3	3
Fencing materials	ha	-	-	-	-	-	1	-	-	1
Sacks	unit	40	40	40	40	40	100	113	130	148
Capacity building	lump sum	-	-	-	-	-	255,000	255,000	255,000	255,000
Land preparation (furrowing)	lump sum	-	-	-	-	-	550,000	550,000	550,000	550,000
Cash crop improved inputs	lump sum	-	-	-	-	-	300,000	300,000	300,000	300,000
Orange saplings	each	-	-	-	-	-	200	-	-	-
Lime	kg	-	-	-	-	-	6	6	6	6
<b>Labor</b>										
Jan male -	man day	-	-	-	-	-	8	8	8	7
Feb male -	man day	10	10	10	10	10	33	35	35	29
Mar male -	man day	-	-	-	-	-	8	9	9	11
Apr male -	man day	36	36	36	36	36	40	37	37	31
May male -	man day	-	-	-	-	-	2	2	2	2
Jun male -	man day	13	13	13	13	13	18	16	16	13
Jul male -	man day	13	13	13	13	13	15	16	16	14
Aug male -	man day	13	13	13	13	13	30	32	34	34
Sept male -	man day	13	13	13	13	13	12	13	13	11
Oct male -	man day	13	13	13	13	13	12	12	12	9
Nov male -	man day	33	33	33	33	33	50	52	54	50
Dec male -	man day	-	-	-	-	-	12	12	12	14
Jan female -	woman day	-	-	-	-	-	8	8	8	7
Feb female -	woman day	-	-	-	-	-	13	13	13	13
Mar female -	woman day	-	-	-	-	-	8	9	9	11
Apr female -	woman day	29	29	29	29	29	32	30	30	27
May female -	woman day	-	-	-	-	-	2	2	2	2
Jun female -	woman day	11	11	11	11	11	16	14	14	12
Jul female -	woman day	13	13	13	13	13	14	16	16	14
Aug female -	woman day	13	13	13	13	13	29	32	34	34
Sep female -	woman day	13	13	13	13	13	11	13	13	11
Oct female -	woman day	13	13	13	13	13	12	12	12	9
Nov female -	woman day	32	32	32	32	32	50	52	54	49
Dec female -	woman day	-	-	-	-	-	12	12	12	14

**Appendix 2 Table 27 - Irrigated Paddy and Upland Household - Financial Budget**

FINANCIAL BUDGET (DETAILED)											
(In LAK '000) /a											
	Without Project					With Project					
	1	2	3	4	5	1	2	3	4	5	
<b>Main Production</b>											
Irrigated paddy - local	9,000	9,000	9,000	9,000	9,000	-	-	-	-	-	-
Irrigated paddy - improved	-	-	-	-	-	6,000	6,126	6,500	6,876	7,000	
Maize	4,800	3,600	2,400	4,800	3,600	3,600	4,200	5,400	5,400	2,700	
Peanut pods	-	-	-	-	-	2,400	2,700	3,600	4,500	4,800	
Watermelon	-	-	-	-	-	2,500	2,750	3,000	3,250	3,500	
Garlic	-	-	-	-	-	5,200	6,175	9,100	12,025	13,000	
Oranges	-	-	-	-	-	-	-	-	-	10,000	
<b>Sub-total Main Production</b>	13,800	12,600	11,400	13,800	12,600	19,700	21,951	27,600	32,051	41,000	
<b>On-Farm Use</b>											
Irrigated paddy - local	180	180	180	180	180	-	-	-	-	-	-
Irrigated paddy - improved	-	-	-	-	-	-	120	120	120	120	-
<b>Sub-Total On-Farm Use</b>	180	180	180	180	180	-	120	120	120	120	-
<b>On-Farm Consumption</b>											
Rainfed paddy local	3,000	3,000	3,000	3,000	3,000	-	-	-	-	-	-
Rainfed paddy improved	-	-	-	-	-	3,000	3,000	3,000	3,000	3,000	
<b>Sub-Total On-Farm Consumption</b>	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	
<b>Net Value Of Production</b>	10,620	9,420	8,220	10,620	9,420	16,700	18,831	24,480	28,931	38,000	
<b>Production Cost</b>											
<b>Investment</b>											
PICSA production package	-	-	-	-	-	5,100	-	-	-	-	-
PICSA investment package	-	-	-	-	-	4,250	-	-	-	-	-
PICSA capacity building package	-	-	-	-	-	255	-	-	-	-	-
Maintenance production assets	-	-	-	-	-	638	638	638	638	638	
<b>Sub-total Investment Costs</b>	-	-	-	-	-	10,243	638	638	638	638	
<b>Operating</b>											
<b>Purchased Inputs</b>											
Irrigated paddy seed - improved	-	-	-	-	-	-	-	-	-	420	
Maize seed	23	23	23	23	23	-	-	-	-	-	-
Improved maize seed	-	-	-	-	-	40	40	40	40	40	20
Watermelon seeds	-	-	-	-	-	125	125	125	125	125	
Groundnut seeds	-	-	-	-	-	480	480	480	480	480	
Garlic seeds	-	-	-	-	-	3,000	3,000	3,000	3,000	3,000	
Farm yard manure	300	300	300	300	300	300	300	300	300	300	
Fertiliser 16:20:0	-	-	-	-	-	210	420	420	420	420	
Plant protection chemicals	-	-	-	-	-	75	113	150	150	150	
Compost	-	-	-	-	-	336	378	420	420	420	
Fencing materials	-	-	-	-	-	1,000	-	-	1,000	-	
Sacks	80	80	80	80	80	200	225	260	295	230	
Capacity building	-	-	-	-	-	-	255	255	255	255	
Land preparation (furrowing)	-	-	-	-	-	-	550	550	550	550	
Cash crop improved inputs	-	-	-	-	-	-	300	300	300	300	
Orange saplings	-	-	-	-	-	600	-	-	-	-	
Lime	-	-	-	-	-	12	12	12	12	12	
<b>Sub-Total Purchased Inputs</b>	403	403	403	403	403	6,378	6,198	6,312	7,347	6,682	
<b>Labor</b>											
Feb male -	-	-	-	-	-	363	453	453	453	183	
Apr male -	383	383	383	383	383	563	450	450	450	158	
Aug male -	-	-	-	-	-	68	180	248	360	248	
Nov male -	270	270	270	270	270	1,046	1,136	1,226	1,226	1,024	
Apr female -	473	473	473	473	473	630	540	540	540	405	
Aug female -	-	-	-	-	-	450	585	653	765	653	
Nov female -	630	630	630	630	630	1,451	1,541	1,631	1,631	1,406	
<b>Sub-Total Hired Labor</b>	1,755	1,755	1,755	1,755	1,755	4,570	4,885	5,200	5,425	4,075	
<b>Sub-total Operating Costs</b>	2,158	2,158	2,158	2,158	2,158	10,948	11,083	11,512	12,772	10,757	
<b>Sub-Total Production Cost</b>	2,158	2,158	2,158	2,158	2,158	21,191	11,720	12,150	13,410	11,395	
<b>Other Costs</b>											
WUG annual fees	-	-	-	-	-	-	500	500	500	500	
<b>Taxes</b>											
Land tax - paddy	25	25	25	25	25	25	25	25	25	25	
Land tax - upland	70	70	70	70	70	70	70	70	70	70	
<b>Sub-Total Taxes</b>	95	95	95	95	95	95	95	95	95	95	
<b>OUTFLOWS</b>											
<b>Cash Flow Before Financing</b>	2,253	2,253	2,253	2,253	2,253	21,286	12,315	12,745	14,005	11,990	
<b>Farm Family Benefits Before Financing</b>	8,368	7,168	5,968	8,368	7,168	-4,586	6,516	11,735	14,926	26,010	
<b>Financial Inflows</b>											
Disbursements on Short Term Loan	2,158	2,158	2,158	2,158	2,158	10,948	11,083	11,512	12,772	10,757	
Transfer from Previous Period	-	-	-	-	-	-	638	638	638	638	
Contribution from own savings	-	-	-	-	-	5,364	-	-	-	-	
<b>Grants</b>											
Production package grant	-	-	-	-	-	2,550	-	-	-	-	
Investment package grant	-	-	-	-	-	2,125	-	-	-	-	
Capacity building grants	-	-	-	-	-	204	-	-	-	-	
<b>Sub-Total Grants</b>	-	-	-	-	-	4,879	-	-	-	-	
<b>Sub-Total Financial Inflows</b>	2,158	2,158	2,158	2,158	2,158	21,191	11,720	12,150	13,410	11,395	
<b>Financial Outflows</b>											
Short Term Principal	2,158	2,158	2,158	2,158	2,158	10,948	11,083	11,512	12,772	10,757	
Short Term Interest	129	129	129	129	129	657	665	691	766	645	
Transfer to Next Period	-	-	-	-	-	-	638	638	638	638	
<b>Sub-Total Financial Outflows</b>	2,287	2,287	2,287	2,287	2,287	12,243	12,385	12,841	14,176	12,040	
<b>Net Financing</b>	-129	-129	-129	-129	-129	8,948	-665	-691	-766	-645	
<b>Cash Flow After Financing</b>	8,238	7,038	5,838	8,238	7,038	4,362	5,851	11,044	14,160	25,365	
<b>Contribution from own savings</b>	-	-	-	-	-	-5,364	-	-	-	-	
<b>Farm Family Benefits After Financing</b>	11,238	10,038	8,838	11,238	10,038	1,999	8,851	14,044	17,160	28,365	
<b>Returns per Family-Day of Labor</b>	50	45	40	50	45	6	26	41	49	86	
<b>Incremental Returns per Incremental Family-Day of Labor</b>	-	-	-	-	-	-	42	47	47	169	

Appendix 2 Table 28 – Benefits Arising from Rural Access Development

Benefits	Resulting from
Changed patterns of production/increased area	Introduction/expansion of higher value crops which become financially viable due to improved market access and reduced losses
Increased agricultural productivity	Increased availability and reduced cost of inputs.
	Increased access to support services, including extension.
Increased marketed output	Better access to markets due to improved accessibility throughout the year.
Increased producer prices	(i) Reduced transport costs; and (ii) higher quality of produce due to timely transportation and reduced losses during transport.
Reduced losses (on-farm before transport and during transport)	Reduced transport time and accessibility throughout the year.
Increased profits for vehicle operators	Reduction in vehicle operation and maintenance costs. Time savings. Opportunities for increased business (volumes transported).
Social benefits	Increased access to health and other social services, and information.

Appendix 2 Table 29 – Cost Benefit Analysis - Cashflows and Indicators

LAK million

Selected years	Incremental benefits	Invest	Recurrent	Farm investment <sup>\1</sup>	Post AE Recurrent <sup>\2</sup>	Post Rural Access <sup>\3</sup>	Total incremental costs	Net incremental benefits
1	(10,385)	22,887	(33,272)	(10,385)	22,887	(33,272)	(10,385)	22,887
2	(19,622)	38,875	(58,497)	(19,622)	38,875	(58,497)	(19,622)	38,875
3	(22,999)	38,482	(61,481)	(22,999)	38,482	(61,481)	(22,999)	38,482
4	(23,196)	25,800	(48,996)	(23,196)	25,800	(48,996)	(23,196)	25,800
5	(5,032)	23,777	(28,809)	(5,032)	23,777	(28,809)	(5,032)	23,777
6	17,753	15,755	1,998	17,753	15,755	1,998	17,753	15,755
7	41,187	6,830	34,357	41,187	6,830	34,357	41,187	6,830
8	60,241	6,830	53,411	60,241	6,830	53,411	60,241	6,830
9	74,122	6,830	67,292	74,122	6,830	67,292	74,122	6,830
10...	74,268	6,830	67,438	74,268	6,830	67,438	74,268	6,830
15...	84,277	6,830	77,447	84,277	6,830	77,447	84,277	6,830
20...	83,797	6,830	76,967	83,797	6,830	76,967	83,797	6,830
25	85,506	6,830	78,676	85,506	6,830	78,676	85,506	6,830
							<b>ENPV @ 9% LAK million</b>	<b>183,059</b>
							<b>ENPV @ 9% USD million</b>	<b>21.00</b>
							<b>EIRR</b>	<b>16.4%</b>
							<b>BCR</b>	<b>2.12</b>
							<b>Switching value benefits</b>	<b>(53%)</b>
							<b>Switching value costs</b>	<b>112%</b>

<sup>\1</sup> Adjustment for Farmer Investment Packages accounted for in farm models to avoid double counting.

<sup>\2</sup> Provision for ongoing recurrent expenditures post agro-enterprise investment

<sup>\3</sup> Provision to account for ongoing rural access maintenance.



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 5: Social Environment and Climate Assessment (SECAP) Review Note**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department





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Lao People's Democratic Republic

Partnerships for Irrigation and Smallholders Commercial Agriculture  
(PICSA)

SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES  
Review note

Draft- December 2018

Asia Pacific Region (APR)  
Programme Management Department

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## ACRONYMS

ADB	Asian Development Bank
DAFO	District Agriculture and Forest Office
DALAM	Department of Agricultural Land Management
DNC	District Nutrition Committee
DNT	District Nutrition Team
DOI	Department of Irrigation
DOPF	Department of Planning and Finance
DRRF	Disaster Risk Reduction Fund
EA	Executing agency
FM	financial management
GCF	Green Climate Fund
Gol	Government of Lao
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German International Cooperation Agency)
Ha	Hectares
IA	Implementing Agency
IEE	initial environmental examination
IFAD	International Fund Agricultural Development
ISF	irrigation service fee
IWMI	International Water Management Institute
LIC	loan implementation consultants
LWU	Lao Woman's Union
MAF	Ministry Agriculture and Forests
Mof	Ministry of Finance
MONRE	Ministry of Natural Resources and Environment
MOU	Memorandum of Understanding
MTR	Mid Term Review
NGO	Non-Government Organization
ODA	overseas development assistance
PAFO	Provincial Agriculture and Forestry Office
PAM	Project Administration Manual
PGT	project governance team
PICSA	Partnerships for Commercial Smallholders' Agriculture
PIS	Provincial Irrigation Section PAFO
PLUP	participatory land use planning
PONRE	Provincial Office Natural Resources and Environment
PPC	Provincial Procurement Committee
PPMS	Project Performance Management System
PSC	Provincial Steering Committee
PWDT	Provincial Public Works and Transport Department
SRIWSM	Sustainable Rural Infrastructure Watershed Management Project
SBCC	social and behavior change communication
TRA	transaction technical assistance
UXO	unexploded ordinance
UXO-NRA	unexploded ordinance – national regulatory authority
WUG	water user group
WUA	water user association

## I. Executive summary

The PICSA project will be implemented in the twelve northern target districts selected for the ADB funded SRIWM-SP. These districts are mainly mountainous, with altitude ranging from 200m to more than 1000 m. The project area encompasses three main climatic zones: subtropical in the north-east (Houaphan province and the north part of Xieng Khouang province), corresponding to the northern Indochina subtropical forest eco-region. Water resources for irrigation are abundant but cold climate limit potential for dry season cropping. Luang Prabang and Sayaboury provinces, under tropical savannah climate, have more favorable farming environment, but surface water resources are less abundant and dry season is more marked as witnessed by the deciduous forest type. The southern provinces are under tropical savannah climate in the western part in the Mekong plain and Tropical monsoon climate in the Annamitic mountain in the eastern part.

The rural population in these ecoregions rely mainly on agriculture and livestock to sustain diversified livelihoods that combine staple crops (lowland and upland rice), cash crops (job's tears, maize, watermelon, vegetables) as well as livestock. A non-negligible part of the food source and cash income derive from collection- and in some cases domestication- of a wide variety of non-timber forest products.

PICSA beneficiary households in the target districts are predominantly living in rural villages with road access. Poverty incidence in the target district is estimated to be around 22% but varies greatly from one district to another, ranging from 12 to 37%. Poverty is correlated to ethnicity and remoteness: ethnic groups, living further from the district center town are more likely to be poor even where they have lowland paddy areas.

Most of the farmers are engaged in some form of commercial agriculture driven by market demand, both domestic (for vegetables for instance) and for export to neighboring Vietnam and China markets (animal feed maize, job's tears, etc.). Thanks to the diversified nature of livelihoods, rural households are relatively resilient but remain however vulnerable to market fluctuation or climate shocks. Climate related risks are: extreme weather events (mainly storms and heavy rain episodes), cold snaps in the higher altitudes, droughts and dry spells during the rainy season. Uncertainties over food security, nutrition and cash income are therefore the main constraints to farmers' livelihoods in the uplands.

In this context, the PICSA project approach is to mitigate uncertainties by: (i) providing better access to water to offset risk of drought both in lowland paddy and upland areas with moderate slope gradients (ii) making market linkages more reliable by supporting entrepreneurship in agriculture, both on the input and output sides and (iii) addressing malnutrition. Therefore, the project is articulated around two outputs: Component 1 – Profitable smallholder irrigated agriculture, will provide capacity building support, improved extension services, support to private sector involvement as well as investment in irrigation and "last mile" access tracks. Component 2- Integrated homestead food production will focus on nutrition.

Interventions will target two main agroecological zones:

- Lowland paddy areas irrigated or rainfed, located in the wider valley floors and flat land along rivers.
- Upland areas with moderate slopes (less than 25%) where permanent agriculture can be supported by pipe irrigation systems. These two agroecological zones are not

geographically disconnected. The project entry point is lowland paddy areas (both irrigated and rainfed) and the adjacent upland fields will be targeted

PICSA interventions will directly contribute to enhance all elements of rural household's resilience: participation in planning, membership of social networks, capacity building, access to knowledge, diversified livelihood and income streams, access to credit, climatic risk hazard reduction through infrastructure and better soil and water management and water saving techniques.

Identified risks related to project interventions are related to improvement of irrigation schemes, rural tracks, and intensification of agricultural production.

The screening of social and environment risks (Annex 3) indicates that the impacts will be minor to moderate and are manageable provided that the project implements adequate measures. PICSA may have some adverse environmental and social impacts but they will be less adverse than those for category A; site specific and few will be irreversible in nature; and can be readily remedied by appropriate preventive actions and/or mitigation measures. The project is classified as category B.

Based on climate screening (Annex 4), PICSA is expected to be moderately sensitive to climate risks and is therefore category 2 (moderate climate risk). Climate issues have been assessed and the design includes adequate adjustments to reduce losses and damages from climate hazards. Climate proofing of infrastructures (irrigation, access tracks) will be enhanced by the local planning approach and the matching grant facilities that will offer more flexibility than a blue printed centralized approach such as design standards or building codes. Such an approach is preferred when variability of risks and hazards is high, as it is the case in the northern uplands of Laos. In addition, the decentralized planning and capacity building programme will enhance local risk-management and adaptation capacities on the long term.

An environmental and social analysis has been included in the present SECAP review note and a draft Environmental and Social Management Plan (ESMP) has been developed. The key features of the ESMP intend to ensure that all adverse impacts are either avoided or adequately addressed through mitigation measures. Sustainable agriculture will be promoted to ensure that the expected changes in farming practices do not induce significant negative impacts such as increased use of agrochemicals or soil erosion for instance.

In the 15 selected irrigation schemes where interventions will be co-financed with ADB, management of social and environmental impacts will be aligned with the ADB safeguards document approved at appraisal mission. Therefore, an environmental and social analysis has been included in the present SECAP review note and a draft Environmental and Social Management Plan (ESMP) has been developed. The key features of the ESMP intend to ensure that all adverse impacts are either avoided or adequately addressed through mitigation measures.

Where PICSA will be implemented as a stand-alone project, management of social and environmental impacts will follow the provisions made in the ESMP. Consultations and participation will be a key feature of the project approach: Adequate measures for Prior Informed Consent and Grievance Redress Mechanisms have also been included.

Additional information is required to identify PICSA target villages and irrigation schemes in concertation with local stakeholders.

## II. Background

Under IFAD SECAP guideline (2017 edition), the preliminary screening exercise of each project is conducted by the design team at the project concept stage. The screening is based on a literature review (and in some cases field visits) and the analysis resulting from such screening exercise is reflected in the relevant section of the SECAP review note for the proposed Partnerships for Irrigation and Commercial Smallholder Agriculture (PICSA)

### Objective of the project

The Goal to which PICSA aims to contribute is: "enhanced livelihood resilience and sustainability within the Project intervention area". The income and nutrition status of households provide an indicator of the degree to which this Goal is achieved.

The Project Development Objective (PDO) – to be attained by the beneficiary households using the outputs provided by the Project – is sustainable and inclusive local economic development. Criteria to assess this include occurrence of reliable market relationships; enhanced (irrigated) agricultural productivity and profitability; improved dietary diversity and an increasing number of households in low and middle wealth categories deriving better incomes from irrigated agriculture.

The Project will have two main components: Component 1 – Profitable smallholder irrigated agriculture. This component combines interventions in the area of market linkages with interventions to enhance the productive use of water resources; and Component 2 – Improved dietary intake

### Target areas

The Programme will be implemented in two main regions of Lao PDR: (i) in the Northern region, in the four target provinces already identified by the NRI-AF2, namely Sayaboury, Luang Prabang, XiengKhouang and Houaphan Provinces. A total of 12 districts have been selected, three in each province<sup>1</sup>, and (ii) in the Southern Region, in the two target provinces of the GMS EWEC Agriculture Infrastructure Sector Project, namely Savannakhet and Saravan Provinces.

In the Northern region, PICSA will co-finance the Sustainable Rural Infrastructure and Watershed Management Sector Project (SRIWM-SP) to be implemented by the Ministry of Agriculture and Forestry (MAF) and funded by an ADB Loan of \$34.7 million, complemented by a grant from the Green Climate Fund and the EU for nutrition aspects (Grant of \$4.5 million). This investment is currently under preparation, the TRTA<sup>2</sup> having completed the draft final report in November 2018. It is to be implemented in 12 districts in four northern provinces: Houaphan, Luang Prabang, Xayaboury, and Xiengkhouang. It is expected that SRIWMP rehabilitates infrastructures in 15 irrigation subprojects, all of them relying on gravity systems.

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<sup>1</sup> Houaphan: Xamneua, Viengxay and Sopbao Districts; Xieng Khouang: Paek, Khouan and Kham Districts; Louang Prabang: Nan, Nguen and Louang Prabang Districts; Xayaboury: Xayaboury, Phieng and Paklai Districts.

<sup>2</sup> ADB TRTA 9323 – LAO: Transaction Technical Assistance provided by consortium composed of: Fraser Thomas Partners, EGIS, CES and Lindis NZ Ltd

Table 1: Target provinces and districts (SRI WMP and PICSA)

<b>Province</b>	<b>District</b>
Houaphan	1. Xam Neua 2. Vengxiay 3. SopBao
XiengKhouan	1. Pek 2. Khoun 3. Kham
Louang Prabang	1. Nan 2. Nguen 3. Louang Prabang
Xayaboury	4. Xayaboury 5. Phiang 6. Paklay
Savannakhet	7. Xaybouly 8. Phalanxay 9. Vilabouly
Salavan	10. Salavan 11. Vapy 12. Khongxedone
<b>6 provinces</b>	<b>12 districts</b>

Currently there are two IFAD funded investment projects in Northern Lao: The Agriculture for Nutrition project (AFN), which has two provinces in common with PICSA: Houaphan (different target districts) and Xieng Khouang (with one common target district: Meuang Kham); and the Northern Smallholder Livestock Commercialization Project - Rural Financial Service Programme (NSLCP-RFSP) co-financed with ADB.

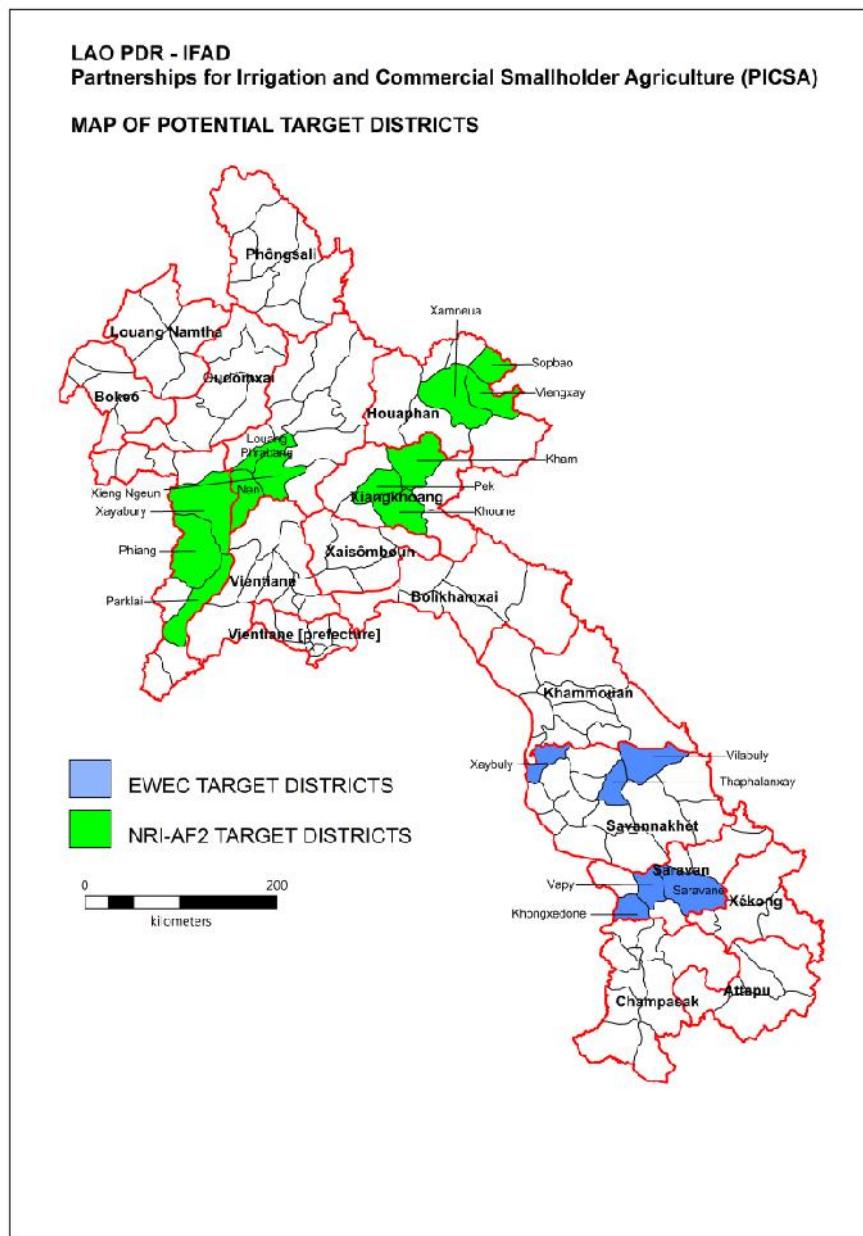
In the Southern Region, The Greater Mekong Subregion East-West Economic Corridor Agriculture Infrastructure Sector Project<sup>3</sup> (GMS-EWEC AISP), implemented by the Ministry of Agriculture and Forestry with an ADB Loan of \$60 million. It is an on-going project made effective in November 2013 and expected to be completed in June 2022. It is implemented in Savannakhet and Salavan Provinces. It is expected that EWEC rehabilitates a total of 17 irrigation schemes, most of them relying on pumping systems.

Table 2: Target provinces and district of the GMS-EWEC AISP project

<b>Province</b>	<b>Selected District</b>
Savannakhet	1. Xaybouly 2. Thaphalanxay 3. Vilabouly
Salavan	4. Salavan 5. Vapy 6. Khongxedone
<b>2 provinces</b>	<b>6 districts</b>

<sup>3</sup> <https://www.adb.org/projects/44138-022/main>

Figure 1: Map of potential target districts



## PICSA target stakeholders

Based on the PICSA concept note, identified project participants and beneficiaries will be:

Irrigator communities. Farmers with access to lowland paddy land are generally the better off as compared to upland farmers. In irrigated areas, comparative advantages are even more important: rural communities benefit from easy access, electricity, water supply and other facilities. The TRTA socio-economic study in the four pilot subprojects concluded that poverty rate is between 5 and 13%.

Rural households living within and around the irrigated areas. Here poverty rates can reach 50% or more depending on remoteness, ethnicity, village history and other social factors. Malnutrition is also generally more critical, in particular in multiethnic or ethnic group villages.

Small and medium enterprises / family businesses upstream of the value chains: input suppliers (fertilizers, chemicals) input producers (seedlings, fingerlings, chicks, etc.), agricultural equipment and machinery suppliers. These businesses are generally established at the district center or along the main roads. They retail a limited range of products (generally 3 types of granular formula of composed fertilizers, pesticides and basic farm implements (hoes, sprayers, spare parts for hand-tractors, etc.)

Rural entrepreneurs based in the province or district, either existing or willing to establish as service provider business. They could be college graduates with relevant skills in agriculture and agri-business and/or junior professionals with prior project experience and willing to invest to develop a service business

Buyers of agricultural products: typically, small traders running a family business, using a light truck to aggregate produce from farmers and deliver to wholesalers or processors. They generally have a "buy everything" strategy and stay in at the limit of the informal sector, avoiding scrutiny and taxes.

## PICSA main interventions

"Partnerships for Irrigation and Smallholders Commercial Agriculture" (PICSA), as a programme focusing on (i) providing support to farmers' groups, (ii) facilitating extension service delivery to farmers, (iii) access to credit / capital fund for investment and (iv) facilitating partnerships with the private sector in the agricultural value chains. PICSA is conceived as being complementary to the ADB project investments focusing on upgrading or modernizing irrigation infrastructures. PICSA does not intend to construct or rehabilitate medium or large-scale irrigation systems. It intends to bring improvements to existing infrastructures to promote an efficient use of water for diversified dry season crops production.

PICSA does not intend to pre-determine value chains or commodities. The approach is to identify "production pockets" where there is proven potential for one or several produces. A local planning process is to identify and validate the key produces with representatives from several villages in a coherent geographic unit, the district authorities and representatives from the private sector. The "business cluster approach" demonstrated in Nepal and further applied in Cambodia could be introduced in Laos with support from PICSA.

## Review note: SOCIAL, ENVIRONMENTAL AND CLIMATE ASSESSMENT PROCEDURES

### III. Major landscape characteristics and issues (social, health, environmental and climate change)

#### 3.1 Sociocultural context

##### Demography and livelihoods

The latest population census dates to 2015 and estimated the total population at 6.9 million, living in 8,500 villages (148 districts, 18 provinces). The average household size is 4.7 members. Nationwide, one third of the population lives in urban areas and two third in rural areas, out of which 86% have road access.

As other agrarian countries in South-East Asian, Laos has undergone a recent shift in rural livelihoods:

- before the mid 1990's "subsistence agriculture" living in mountain areas practiced "subsistence agriculture" with no or very limited surplus and a fairly "sustainable" slash and burn production system dominated by long forest rotation
- Starting from the mid 1990's, commercial agriculture appeared and
- In the 2000's the pace of cash crops boom-and-burst has accelerated: animal feed maize, cassava, jobs' tears, sugar cane and then rubber and now banana, water melon, etc.
- In the more recent years, in absence of regular market outlet, some farmers have replaced tree crops (coffee, rubber, candle nut, etc.) to make way for annual cash crops under the assumption that it would be a better bet on the short term

"Diets of ethnic communities have typically been diverse and collected or grown in and around the forest. Nowadays the collection of wild foods is being replaced by buying less nutritious food with cash"-

European External Action Service

Scaling Up convergent Programme Approaches to improve food and nutrition security in the northern uplands (SUPA) 27/6/2018

The key components of the rural livelihoods remain. They are rice production (either upland paddy fields on valley floors or upland rice under shifting cultivation), cash crops and livestock, and off-farm activities. The livelihoods are geared towards: (i) providing enough staple food and possibly other food such as vegetable, (ii) cash crop earning between 14 and 30 million kip in cash return, necessary to cover for education-related expenses, fuel and consumption goods (iii) off farm activities.

"Most upland farmers are ready to grow anything provided there is a market for it.

It is therefore essential to strike a balance between the volume of standard quality product farmers have to deliver to meet market and traders' requirements [...] with the diversity they need to maintain in their farming systems to keep it resilient to ecological et economic shocks"

Lao Upland Initiatives [website](#)

The reality is complex because of the extreme spatial and temporal variabilities. Because of the mountainous nature of the landscape, constraints and opportunities vary greatly over

small distances. Opportunities for income generation suddenly arise and fade away quickly, prompting rural households to adopt an opportunity-seeking behavior as opposed to rent-seeking behavior or business mindsets.

Rural households have gained the ability to shift quickly from one production to another and therefore can also go out from poverty and get back in poverty as a pattern. They can also experience food shortage one year and surplus the next year.

Two main lessons can be drawn to define principle for interventions:

- 1- Adapted options: provide the tools and support to accompany current trends while off-setting risks and unfavorable impacts
- 2- Adaptive options: interventions geared towards long-term benefits (infrastructures for instance) should not obliterate the capacity to grasp opportunities that may arise in the short or the medium term

#### Food Security in the Northern Uplands

Aim: To understand the causes of food insecurity in the Northern Uplands of Lao PDR and propose solutions to its alleviation.

Funded by: the Australian Centre for International Agricultural Research (ACIAR)

<http://www.fsnu.info/events---publications.html>

#### Indigenous people / Ethnicity

There are several hundred ethnic groups in Laos but a complete classification has never been completed. Officially there are 49 groups in four main ethno-linguistic origin: Tai-kadai (Lao Tai), Mon-Khmer, Hmong-Mien, Sino Tibetan.

Table 3: Ethnic diversity of the population (1995-2015)

Ethno-linguistic family	% of pop. 1995	% of pop. 2005	% of pop. 2015
Lao-Tai	66%	65%	62.4%
Mon-Khmer	23%	23%	23.7%
Hmong-Mien	7%	9%	9.7%
Chinese-Tibetan	3%	3%	2.9%

Source: Housing and Population census (2015)

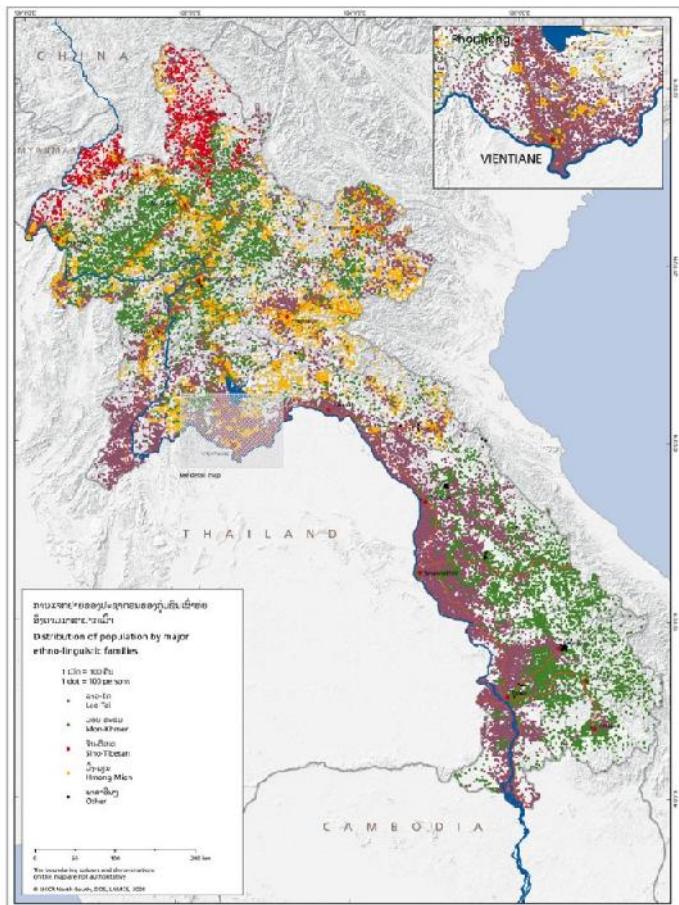
The Tai Kadai (Lao ioum) migrated to Laos from the north about one millennium ago. They established in lowland valley areas and their agricultural production is based on rainfed paddy rice. Languages the Tai-Kadai family include Lao as well as Lue, Tai Dam (Black Tai), and Tai Deng (Red Tai) in the northern parts of Laos.

The Mon-Khmer (Lao theung) are of austro-asiatic origin and migrated northward in prehistoric times. The cultural and linguistic differences among Mon-Khmer ethnic groups are greater than those among the Tai-Kadai and Hmong-Mien groups. The groups of the Mon-khmer ethno-linguistic family are Khmu (mainly in the north) and Lamet, Kriang, Brao, etc in the south. The Mon-Khmer practice both lowland paddy rice production and upland slash and burn agriculture. They generally have good knowledge of the forest environment

ecology and traditionally used to produce high value crops and to collect forest products to be bartered or sold to traders established in the valleys.

The tibeto-burmese ethno-linguistic family (Lao soung, Hmong-Mien) migrated more recently (19<sup>th</sup> century) from the Tibetan plateau and based their livelihoods on corn and non-glutinous rice produced on swidden fields. Among the groups of this family (Akha, Yao), the Hmong is the largest ethnic group in northern Laos.

Figure 2: distribution of population by major ethno-linguistic families



Source: <http://www.laoatlas.net/>

The PICSA target districts are ethnically diverse and all the ethno-linguistic families are all represented, but statistics are not downscaled to district level in the population census. Integration of ethnic groups in the Lao society is a priority of the government policy. However, access to education and level of literacy of ethnic groups is significantly lower, in particular for women. To address constraints related to literacy and Lao language ability, ethnic groups communities and individuals need assistance to understand and participate in discussions and decisions.

Village reorganization started in the 1990's through creation of village clusters (kumban) and access to electricity, water and public services in rural areas improved significantly. The village reorganizations also involved grouping small hamlets into new villages or merging neighboring villages, resulting in bigger villages sometimes with several different ethnic groups.

## Vulnerable people

Vulnerable people may be members of households with limited labour capacity, farmers with very little landholding and no access to productive land, illiterate adults, women headed households, disabled people, marginalised ethnic groups members, etc.

## Employment and migration

A recent study by the Lao Statistics Bureau<sup>4</sup> indicates that of the 6.9 million total population, 69 per cent were of working age (15 years and above). The share of working age population in urban area was 75.4% and 66% in rural areas where a large part of the population is under 15 y.o. and not included in the work force.

The agriculture sector used to employ more than 80% of the work force, but the current trend is a transfer of workers towards other sectors of the economy are developing: construction, industry (garment, vehicle assembly, etc.)

Rural migration is a common feature of developing economies and Laos is not an exception. In the early 2000, rural households were allowed to move to the main towns and Vientiane capital in particular, mainly to be employed in the emerging garment industry. A recent study<sup>5</sup> conducted by the Bureau of Statistics confirms there were 539 thousand persons in the total population who currently lived in a different place than their home province. More than half of the people who migrated, moved to Vientiane Capital and Vientiane province. The main migration suppliers are the northern highland provinces such as Huaphanh, Xiengkhuang, Luanprabang and Phonsaly. Among members of ethnic groups Khamu (Mon-Khmer) and Thai Deng (Tai-Kadai) are the most likely to migrate to Vientiane. Men generally migrate for employment while the main reason why women migrate is related to family and marriage.

## Poverty

Poverty in Lao PDR declined from 33.5% to 23.2% in the last decade lifting half a million people out of poverty. The country has met the Millennium Development Goals (MDGs) target of halving extreme poverty (World Bank, 2018). It is estimated that there were 1.5 million people living under the poverty line in 2012.

Table 4: National poverty indicators

Indicators	% population under poverty line
Population living under national poverty line	23.4%
Population living under international poverty line	22.7%
Rural population living under poverty line	28%
Urban population living under poverty line	10%
Population above 16 y.o without education	34%
Population above 16 y.o with primary education	22%

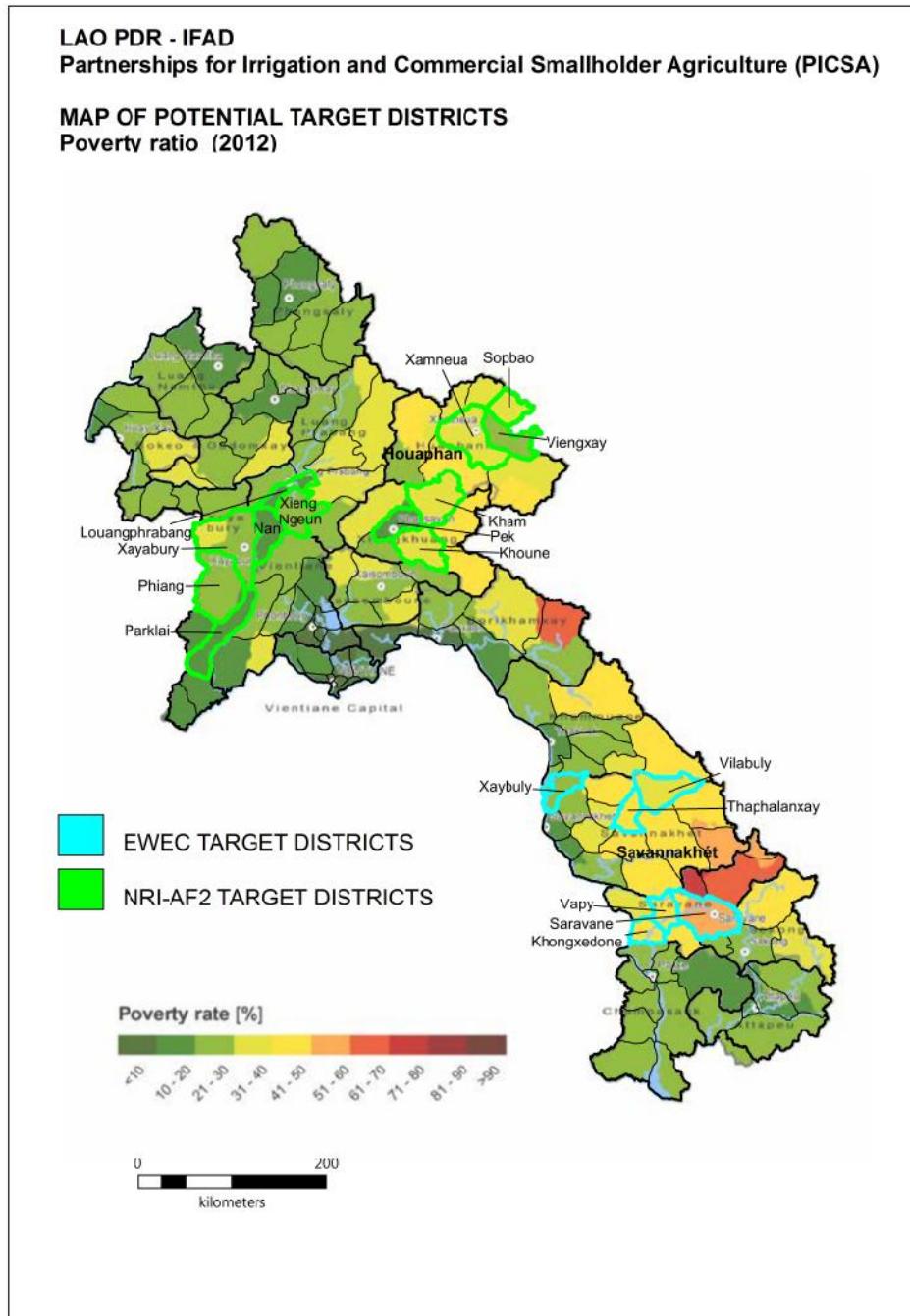
The above figures are calculated in monetary terms, by applying a single income threshold value (poverty line) set for rural areas at 180,000 LAK (in 2010) and 253,000 LAK (in 2013) per person and per month. This approach of poverty assessment is debatable, as it does not take in account other elements of the livelihoods in the approach to assess poverty.

<sup>4</sup> LAO PDR LABOUR FORCE SURVEY 2017 (LSD, June 2018)

<sup>5</sup> Ibid.

Inequality level is comparable to other countries in the Mekong Region as indicated by a Gini index of about 36.4 for Laos, 30.6 in Cambodia and 39.3 in Thailand in 2012. People living in rural areas and people with less education are more likely to be poor. Poverty incidence among people without education is of 34% and 22% for people with primary education. It is also reflected in decisions of many rural households to invest more in education of children and youth.

Figure 3: Poverty rate per district



Source: Coulomb et al 2016, based on 2012/13 LECS-5 and 2015 Lao PDR Census

When downscaling to district level, the poverty rates for the intended target districts is as follow:

Table 5: Poverty rates in selected districts

Province	District	Poverty rate in %	Population	Poor individuals
Houaphan	Xam Neua	30.8	54,960	16,902
	Viengxiay	27.7	31,298	8,658
	SopBao	36.7	25,326	9,300
Xieng Khouang	Pek	13.6	71,321	9,720
	Khoun	31.0	32,574	10,088
	Kham	31.2	47,256	14,749
Louang Prabang	Nan	16.3	27,992	4,566
	Xieng Nguen	22.7	31,689	7,198
	Louang Prabang	11.5	82,541	9,532
Xayaboury	Xayaboury	21.8	70,109	15,312
	Phieng	23.5	55,947	13,158
	Paklay	16.0	66,563	10,663
12 Northern districts		21.7%	597,576	129,846
Savannakhet	Xaybouly	28%	58,696	16,439
	Phalanxay	43.2%	39,108	16,882
	Vilabouly	32.1%	37,481	12,041
Salavan	Salavan	50.3%	98,145	49,348
	Vapy	42.9%	37,102	15,925
	Khongxedone	41.5%	62,275	25,849
Total 6 Southern districts		<b>41.0%</b>	<b>332,807</b>	<b>136,484</b>

Source: Coulombe H. et al, Where are the poor ? Lao PDR 2015 Census-Based Poverty Map – June 2016

The poverty rate in the twelve northern target districts is 21.7%, slightly below the national average (23.4%). In four out of 12 target districts, the number of poor individuals represent less than 20% of the total population. The target districts of Houaphan province have the highest poverty rate (31%), while it is 23% in target districts of Xieng Khouang, 20% in Xayabury and 15% in Luang Prabang.

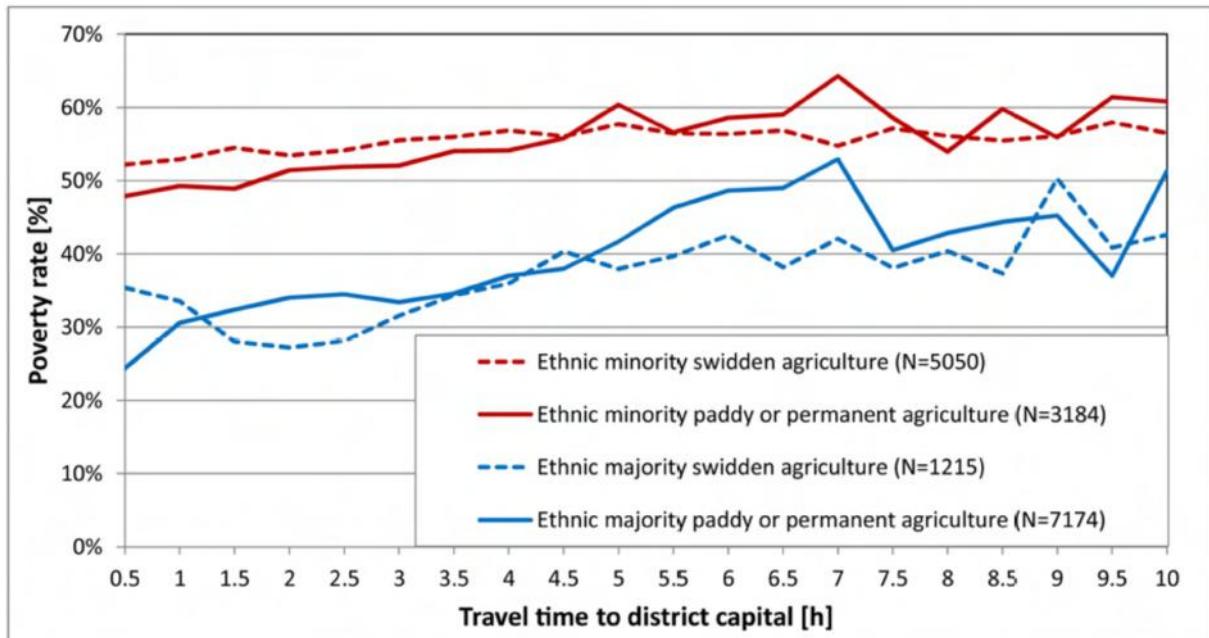
In the southern provinces, the poverty rates are significantly higher: 34% in the 3 districts of Savannakhet and 46% in the 3 districts of Salavan (41% over the 6 districts). As a general pattern, poverty incidence is higher in the districts located further from the Mekong valley and closer to the annamites mountain.

It may seem intuitive to assume that in rural areas, poor people would be households mainly relying on slash and burn agriculture. This assumption was discussed in a recent paper<sup>6</sup> and it showed that ethnicity and remoteness (expressed in travel time to district center) influences poverty more than farming systems: permanent cropping vs slash and burn agriculture.

Also, at equal distance to the district center, ethnic groups tend to be poorer than ethnic majority, regardless of the type of farming system.

<sup>6</sup> Messerli P, Bader C, Hett C, Epprecht M, Heinemann A (2015) Towards a Spatial Understanding of Trade-Offs in Sustainable Development: A Meso-Scale Analysis of the Nexus between Land Use, Poverty, and Environment in the Lao PDR. PLoS ONE 10(7): e0133418. doi:10.1371/journal.pone.0133418

Figure 4: Remoteness and ethnicity as factors of poverty



Source: Messerli et al (2015)

The study concluded that: "poverty and environment outcomes could be more effectively influenced if bundles of external influences—such as foreign direct investments, market opportunities, development assistance, or public policies—can be combined to respond to the diverse endogenous development potentials of different local contexts. Strategically, this would imply not only an improved cross-sectoral coordination of development interventions, but also spatially differentiated and hence decentralized development approaches"

### 3.2 Natural resources and their management

The project area is not completely defined, but two main target areas are distinguished:

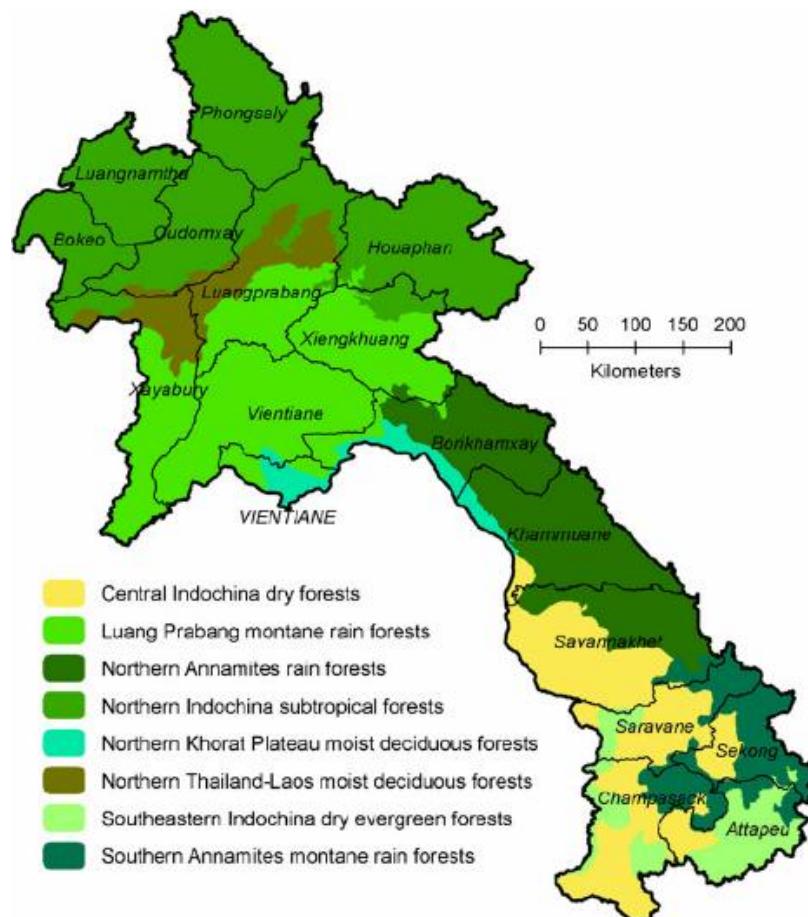
- Northern Uplands in the provinces of Sayaboury, Luang Prabang, Xieng Khouang and Houaphan
- Southern areas in the province of Savannakhet and Salavan

The project area spans a wide variety of ecosystems<sup>7</sup>. There are three distinct ecoregions in northern Laos.

Northern Indochina subtropical forests [IM0137], Eco ID 256; covering the Northern tip of the country, including Northern Luang Prabang province, all Houaphan province and northern Xieng Khouang province. This eco-region is at the transition between the South Asian and the east Asian floras. It has remarkable biodiversity, ranking 1<sup>st</sup> in species richness for bird and 3<sup>rd</sup> for mammal species richness in the Indo-pacific region. This eco-region conservation status is Vulnerable because of the land clearing for shifting cultivation, logging and hunting for food and income.

<sup>7</sup> These ecoregions are described in detail here: <https://ecoregions2017.appspot.com/>

Figure 5: Geographic distribution of ecoregions



Northern Thailand-Laos moist deciduous forests [IM0139], Eco ID 258 forming a strip from West of Sayaboury province into the east and central parts of Luang Prabang Province. Teak (*Tectona grandis*) accounts for 27% of trees and it is a co-dominant species of the moist mixed deciduous forest along with other tree species such as *Xylia xylocarpa* 11%, and *Pterocarpus macrocarpus* 10%. These species present high market value and have been cleared several decades ago for timber and other uses. Natural teak forests of Laos have mostly been destroyed. Bamboo is common and is an indicator of high human disturbance linked to shifting cultivation and regular fires. Continual erosion of the slopes turns these areas into scrubland of bamboo or other grass species. There is virtually no potential for forest regeneration. Overall, the original habitat has been heavily altered. Mammals have been extirpated from this eco-region and very little wildlife remains. This eco-region conservation status is Vulnerable.

Luang Prabang montane rain forests [IM0121], Eco ID 37: in the southern parts of Luang Prabang and Sayaboury Provinces as well as most of Xieng Khouang Province, comprises areas largely above 800 m. Montane habitats typically have 2,000-3,000 mm of annual rainfall but a long dry season. These forests include a variety of forest associations, including Fagaceae and Lauraceae forests, mixed conifer-hardwood forests, open montane forests, and open conifer forests dominated by *Pinus kesiya* on skeletal soils of clay schist or sandstone as found in Xieng Khouang province. Most of this ecoregion forests have been

converted to scrub or degraded habitat, primarily as a result of widespread shifting cultivation, and less than 30 percent of the original habitat now remains. This area is remarkable for its richness of birds' species. This eco-region conservation status is Vulnerable.

In the South provinces of Salavan and Savannakhet, there are two main ecoregions:

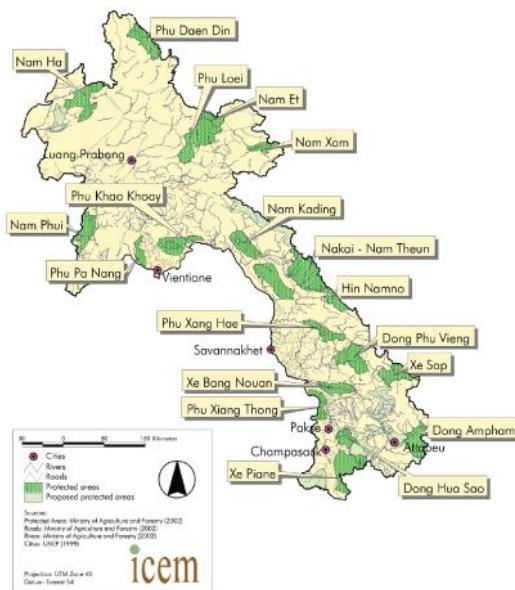
Northern Annamites rain forests [IMO136] Eco ID 255: in the eastern parts of Savannakhet province along the mountain range that forms the border with Viet Nam. Discovery of new species have been made in this eco-region recently, confirming its globally outstanding biodiversity. The major threats are development of large hydropower dams, major illegal and legal logging and local and transboundary wildlife poaching and trade (Laos into Vietnam). The presence of unexploded ordnances similarly poses a severe threat to wildlife and people. This ecoregion conservation status is Relatively Stable/Intact

Central Indochina dry forests [IMO202] Eco ID 291: broadly located between the Mekong and the Annamites mountain. In this region, deciduous dipterocarp forest, forms an open forest or woodland community dominated by deciduous trees. Ground fires burning through the herbaceous understory of deciduous dipterocarp forests are a regular aspect of the environment. Most of the ecoregion lies in densely populated areas, where the natural habitat has long been converted to agriculture and settlement. This ecoregion conservation status is vulnerable.

#### Protected areas

Laos has established an impressive network of protected areas over the country diverse eco-systems and covering 3.3 million ha or more than 13% of the national territory.

Figure 6: Map of National Biodiversity Conservation Areas (NBCA)



#### National Biodiversity conservation areas

Laos established 21 protected covering 13% of the national territory. As elsewhere in South East Asia, these protected areas are under threat of encroachment for illegal logging, roads and dam development and expansion of agriculture and livestock.

PICSA will ensure that all activities are located outside the NBCA including buffer zones.

Besides National Biodiversity Conservations areas, other types of protected areas are provincial and district conservation forests and protected forests and corridors 2.2 million ha. The combined areas under protection status is of more than 5 million hectares or 22% of the country territory.

## Soils

The soil in the project areas can be divided in the following main types:

- (i) In the northern uplands, land formation results from tectonic subsidence follow by erosion and sedimentation. Under forest cover, soils are protected from run-off erosion and can accumulate organic matter. When forest is cleared, soil become very sensitive to the impact of rain and can erode within the first rainy season. Traditional slash and burn agricultural practices prevented this problem by
- (ii) In the southern area, under the dry-dipterocarp forest environment, soils contain less organic matter, are more sandy and therefore low water retention capacity. Once cleared, these soils have relatively low agronomic quality. They are suitable for highly tolerant tree species such as eucalyptus planted for wood pulp production.

Figure 7: Soil classes

Soil class	Area (Ha)	In %
Arenosols	233,154 ha	1.4%
Fluvisols	104,650 ha	0.5%
Greysols	127,189 ha	0.5%
Leptosols	442,497 ha	2%
Regosols	515,279 ha	1%
Cambisols	2,353,227 ha	10%
Solonchacks	7,503 ha	-
Solonnetz	5,945 ha	-
Alisols	444,4215 ha	19%
Acrisols	11,579,913 ha	49%
Lixisols	391,495 ha	1.6%
Luvisols	2,999,305 ha	13%

Source: Soil Research Centre, NAFRI 2001

As shown in the table above, soils are in majority acrisols. They are typically formed on undulating topography and under humid tropical climate. Extensive leaching of acrisols induce excess aluminum and loss of nutrients due to their high erodibility. They have an acidic pH of 5.5 or lower. Acrisols are typical soils of lowland rice areas. Associated cambisols are also common in paddy fields of southern Laos, although they are less weathered and relatively more fertile. Adequate soil management options have been discussed by J/M. Schiller et al (ed. Rice in Laos, 2001), indicating that "the application of organic materials is highly recommended for the lowlands of Laos to avoid soil nutrient depletion, especially with respect to K and micronutrients"

Initiatives to map soils of Northern Uplands and their suitability are being undertaken, with a notable current mapping effort being undertaken by the Food security in northern uplands research project funded by ACIAR ([http://www.fsnu.info/assets/2\\_soil\\_maps.pdf](http://www.fsnu.info/assets/2_soil_maps.pdf))

Main threat to soil resources are:

- (i) deforestation and transition to permanent grassland where forest regeneration is suppressed. This is notably the case when rural communities tend to favor species such as broom grass that have been in high demand for production of brooms
- (ii) soil disturbances due to opening of new access tracks, electric power lines, dams, plantations and other investments in remote areas. Generally, opening of new

alignments has direct negative impact on the served area with more pressure on deforestation through logging and clearing of new agricultural plots

(iii) intensive agriculture on sloping land that involves mechanical ploughing and chemical weed control: case of maize in Sayaboury and other cash crops on the slopes. Yield can be profitable in the first year but decrease sharply thereafter. Attempts to introduce and disseminate zero-tilling, mulching crop association and other conservation agriculture techniques have been supported by research and extension programs (PRONAE, PASS, CADF) funded by the French government since the late 1990's

(iv) use of chemical that induce soil pollution and conduct to decreased or eliminated soil fauna and flora. This hampers the ability of the soil regeneration and affect soil resources on the medium term

(v) lack of on-farm investment to conserve and restore soil resources

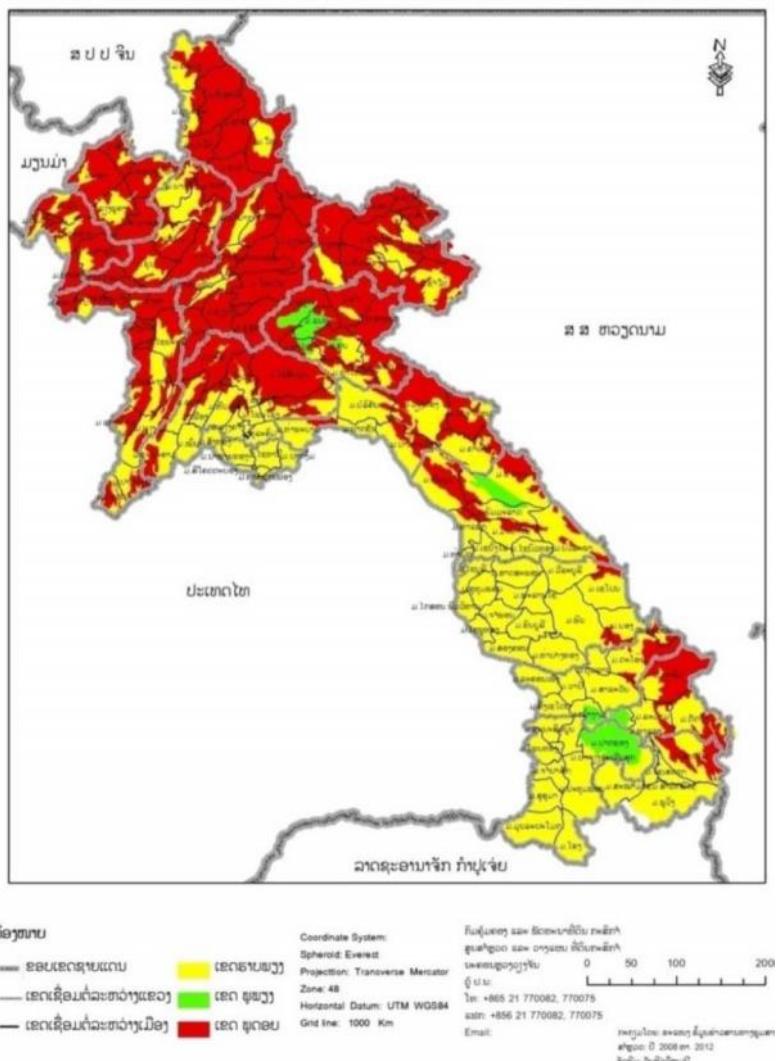
#### Agricultural land use pattern

Lao PDR encompasses a total area of 236,800 square kilometres including 6,000 sq.km of water, mainly hydropower dam reservoirs. Land form is broadly classified in three agro-ecological zones: mountains, plateaus, and plains. Mountains and plateaus make up three-quarters of the total area. The plains are further categorized as: 7 Major Plains along the Mekong and its main tributaries, 16 intermediate Plain and 12 small plains in mountains areas (valley floors). The plains are represented in yellow in the map below.

#### Conservation agriculture

The cropping systems experimented and disseminated by the PRONAE and PASS projects and the CADF are all gathered under the broad concept of Direct seeding Mulch-based Cropping (DMC) systems. DMC systems are cropping systems that involve no tillage and a permanent plant cover of the soil. The expression 'plant cover' further refers to dead mulch (crop residue, cover plants or dead weeds) or live mulch associated with the crop.

Figure 8: Agro-ecological land form classification: mountains, plateaus and plains



In the map above, mountains are indicated in red, plains in yellow and plateaus in green. Note the occurrence of relatively large plains (yellow patches) within the mountainous areas of Northern Laos.

The country forest cover data is subject to debate depending on which vegetation form is considered as forest. The latest official statistics estimate that forest cover about 70% of the country area. Agricultural land is under management responsibility of the Department of Agricultural Land Management (DALaM), established in 2012. DALaM estimated that agricultural land covers 4.5 million ha (about 19% of the total area)

Agricultural land use types can broadly be classified as:

- (i) Lowland paddy in plains, some irrigated

This land use type is very common in the main plains along the Mekong valley and secondary plains along the Nam Ngum, Sebang Fai, Sebang Hiang and other main Mekong tributaries. Improved rice seed varieties commonly used, chemical

- fertilisation combined with animal manure in some cases. In the case of irrigation schemes, actual cropped areas in dry season can be as low as 20% of the command area, indicating underutilized irrigation infrastructures / assets
- (ii) Lowland paddy in mountain areas (valley floors), some irrigated  
 Occur in large valley floors in the northern provinces such as in Phieng District (Sayaboury Province) and in Nan district (Luang Prabang province). Current paddy yields can reach 4 t/ha. Paddy fields are fertilised mainly by sediments brought by run-off water in rainy season, as well as animal manure. In some areas, banana plantations have been established in mountain paddy land, effectively converting rice production areas into permanent intensive commercial agriculture
- (iii) Short forest fallow with upland rotational cropping every 2 to 4 years
- (iv) Upland fixed cropping for commercial purpose: maize, job's tears, etc
- (v) Plantations: rubber, coffee, teak, fruit trees for instance. In some instance, banana plantations have been developed in lowland paddy area, notably in the north-eastern part of the country (outside the project area)

Figure 9: Typical cropping patterns

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainy Season												
Wet season lowland paddy												
Nurseries												
Transplanting												
Crop maintenance												
Harvesting												
Dry season lowland paddy												
Nurseries												
Transplanting												
Harvesting												
Irrigated dry season crops												
1 <sup>st</sup> 3-month crop cycle (potential)												
2 <sup>nd</sup> 3-month crop cycle												
Upland crops (rice, others)												
Forest / bush clearing												
Burning												
Sowing: upland rice / others												
Weeding												
Harvesting												
Plantations												
Transplanting seedlings												
Watering required (3 first years)												

The main threats to agricultural land use are:

- (i) Land conversion: agricultural land converted in building area
- (ii) Large land concessions:
- (iii) Large investment projects such as hydropower reservoirs, powerlines, mining, etc

#### Hydrology and Water resources

Water resources are deemed plentiful in Laos. Any observer will notice the numerous waterways, rivers, streams, ponds that crisscross the rugged and hilly landscape.

Irrigation and livestock account for most of the water use in the country. It is estimated that around 3960 million cu.m of water is drawn for irrigation and livestock, representing 93% of all water withdrawal (FAO, Aquastat)

Ponds and wet lands have a valuable role to play in providing ecological services, as they are generally biodiversity rich. They also serve as fish refuge in dry season if managed properly, as demonstrated in Cambodia by Worldfish. Ponds and wetlands are to be further protected and managed by the communities. The PICSA project is also to support the creation of ponds and small water reservoirs. Using the "key line approach" in the uplands would be a beneficial and rather innovative approach.

Ground water resources are un untapped potential for agriculture. It is estimated that less than 2% of the water used in agriculture is drawn from ground water, while 98% is drawn from surface water. Ground water can be accessed by promoting dug well and borehole, feasible as long as there is not hard bed rock (See Mathieu Viossange et al Regional Mapping of Groundwater Resources in Data-Scarce Regions: The Case of Laos, 2017)

### Irrigation

The Government of Lao PDR has heavily invested in irrigation infrastructures in the mid 90's and early 2000's, in particular in pump irrigation for paddy production in the main Mekong Plains . As a result, irrigated areas covered about 420,000 ha in 2015, although falling short of attaining the ambitious 800,000 ha target set in the 5-year plan for 2011-2015. In 2014, the Department of Irrigation indicated that that there are more than 15,000 irrigation schemes nationwide: a total of 1,750 gravity weirs, 329 catchment reservoirs, 566 pump-fed schemes, 197 gabion weirs, 264 water gates and 11,415 "traditional weirs" built and managed by communities.

Public investments had almost immediate impact on increased paddy production, and the objective of self-sufficiency was attained in the early 2000s'. The national paddy output increased from 3 million tons in 2011 to more than 4 million tons in 2015, with dry season irrigated paddy production contributing about 13% to the national output. With distribution canal networks mainly designed for dry season paddy production, the farmers faced difficulties producing more profitable diversified crops. However, sustained market demand for vegetables and pulses (soybean and groundnuts for instance) has provided incentives for dry season diversification in modernized irrigation systems in the recent years.

Irrigation Operation and maintenance responsibilities have been assigned to water users groups in a systematic process of Irrigation Management Transfer (IMT). Farmers groups established as Water User Groups and Associations (WUG/WUA) lacked management and financial capacity to operate and maintain infrastructures. The engineer-led design and construction process has generally hampered local participation and genuine involvement of water users in the management of the schemes. There are an estimated 2,533 groups nationwide, assessed as 66 formal Associations with strong management capacity, 1,627 groups with medium capacity and 840 groups with low management capacity (DoI, 2014)

After two decades, irrigation infrastructures are generally in state of disrepair and operate at below design capacity. In addition, paddy production in dry season provides low return to farmers' labor and irrigated areas are not fully put in production. As costs of operation and maintenance are generally not covered by irrigation service fees, the State reinvests public budget on a regular basis to repair and upgrade infrastructures in order to maintain paddy production capacity and reach production objectives. Overall the Irrigation Management

Transfer policy, as applied since the turn of the century, has not set the required conditions to establish a sustainable and self-financing irrigated agriculture sector.

In this context, the recent Law on Irrigation issued in 2013 aims at promoting further investments in irrigation and irrigated agriculture with expected contribution from the private sector. It also maintains the existing approach of transferring operation and maintenance to Water Users Associations. The Irrigation Law has not been supported by application decrees and guidelines and previous decrees still apply, maintaining uncertainty on mandates and sharing of responsibilities for O&M management, financing of maintenance and repairs and recouping of infrastructure investment costs.

### 3.3 Climate

Based on the updated world Koppen-Geiger climate classification<sup>8</sup>, Laos features three main climates, from south to north:

Tropical monsoon climate (Am) along the annamites mountain chain. Temperature of the coldest month above 18°C and tends to either see more rainfall than a tropical savanna climate or have less pronounced dry seasons. There are four southern districts under this climate.

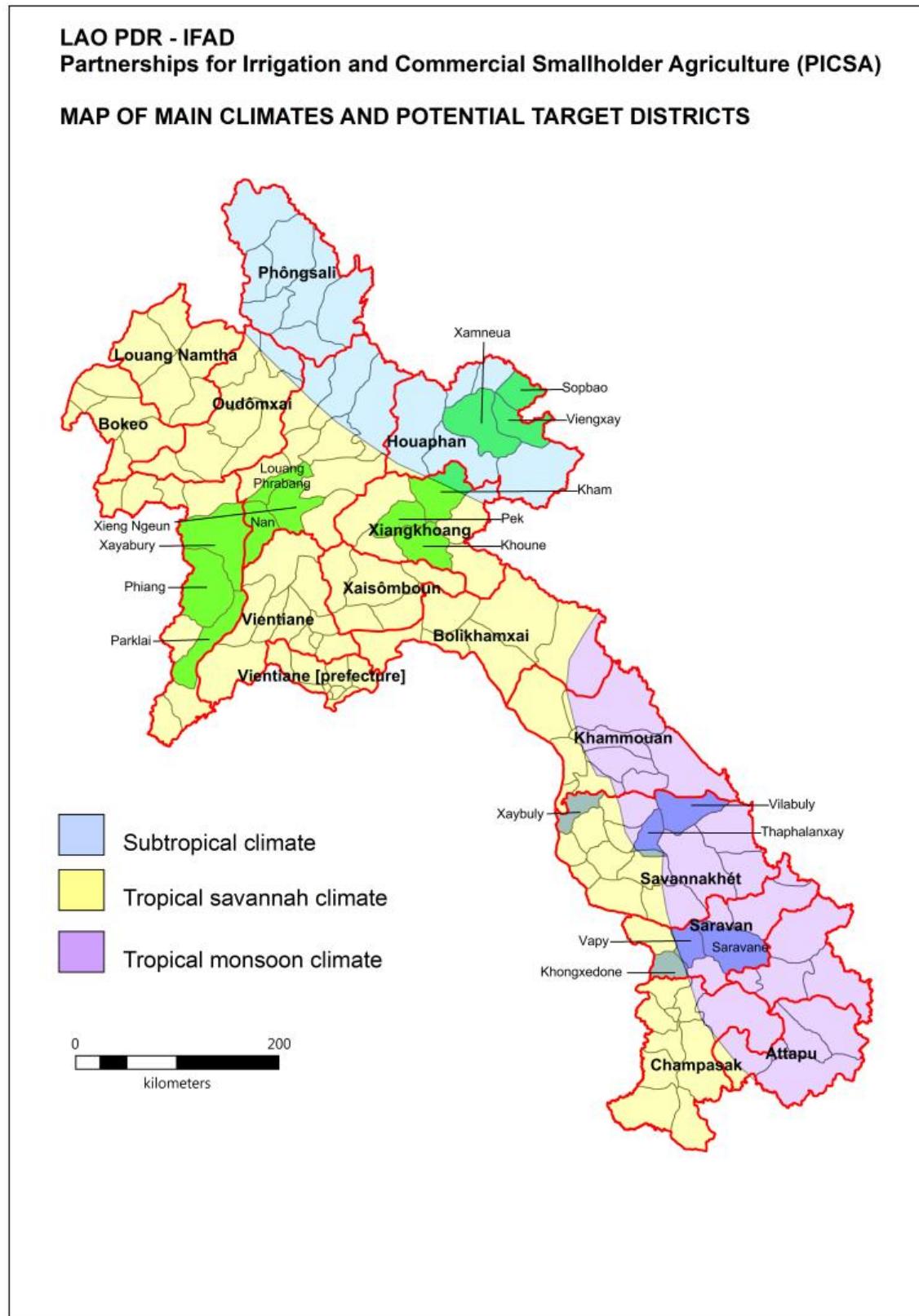
Tropical savannah climate (Aw): spanning most of the country, from the plains along the Mekong to the mountainous region of North East into Myanmar. This climate is characterized by: temperature of the coldest month above 18°C and typically a pronounced dry season, with the driest month having less than 60 mm. Luang Prabang, Sayaboury, Xieng Khouang as well as western parts of Savannakhet and Salavan are under this climate class.

Humid subtropical climate (Cwa) in Phongsaly, North of Luang Prabang and in Houaphan province. It features significantly colder temperatures and lower precipitations, defined by temperature of the hottest month above 22°C and dry winters ( $P_{dry} < P_{swet}/10$ )

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<sup>8</sup> M. C. Peel et al.: Updated world Koppen-Geiger climate classification map, 2007

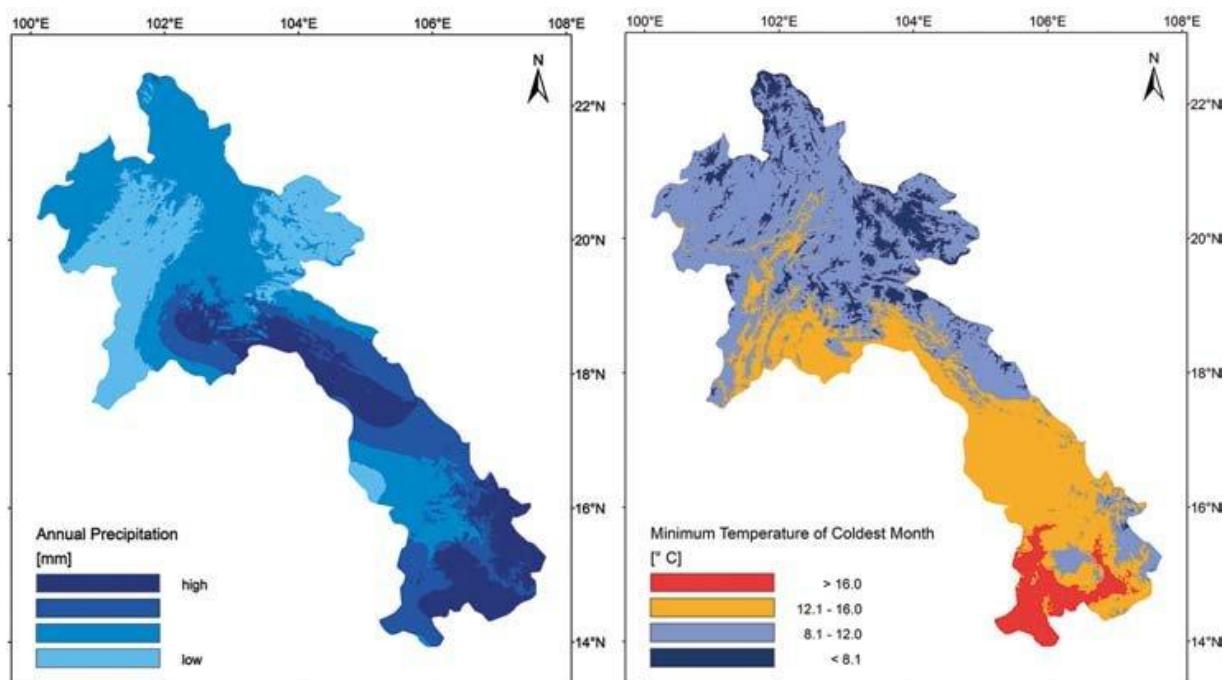
Figure 10: Updated Koppen-Geiger climate classification



Precipitations: Precipitation over the wet season (May–October) ranges from 1300 mm to 3700 mm. The highest values are found in central and southern Laos mountain ranges, where orographic effects enhance the monsoon precipitation. The current climate of Lao PDR is determined by monsoon pattern, resulting in a rainfall concentrated in 6 months (May–October) with a peak in August/September and very little precipitation the rest of the year (November – April). The 6-month dry season is one of the main constraints to agricultural production.

Temperature The northern-eastern part of Laos, at altitudes of 1,000 meter amsl and above, cold snaps occur in December and January. In the most severe cases, farmers assets are directly affected: loss of buffalo and cattle, destroyed dry season crops. These events happened in 2014 in Xieng Khouang, Houaphan and Phongsaly provinces.

[Figure 11: Key features of the climate in the target areas](#)



Observed trends show that (i) Temperatures have increased on average between 0.1 to 0.3°C per decade between 1951 and 2000(ii) Rainfall has decreased between 1961 and 1998.(iii) The number of droughts and floods over the last three decades has increased (climate risk and adaptation country profile, 2010)

During consultations at local level, it was reported that the rainy season on-set is occurring earlier, and that dry spells during the wet season are more marked.

Climate related risks are mostly linked to the rainfall pattern, inducing floods and drought. Temperatures are also a risk factor in higher elevations of Houaphan and Xieng Khouang, prone to cold temperature events in winter. High temperatures

**Floods:** The passage of tropical cyclones in the South China Sea can affect the monsoon pattern and induce intense rain events, inducing localized flash floods in Laos. These extreme events can involve more than 150 mm of precipitation in a day. The limited

number of weather stations and the relatively short data series over time, provide little insight on the long-term trends and frequency of such extreme events.

Flooding from local rainfall can occur anywhere when the rainfall exceeds 60mm/day. The mountainous watersheds in the northern region are subject to flash floods and landslides.

**Figure 12: Historical Flood Occurrences (2000-2015)**

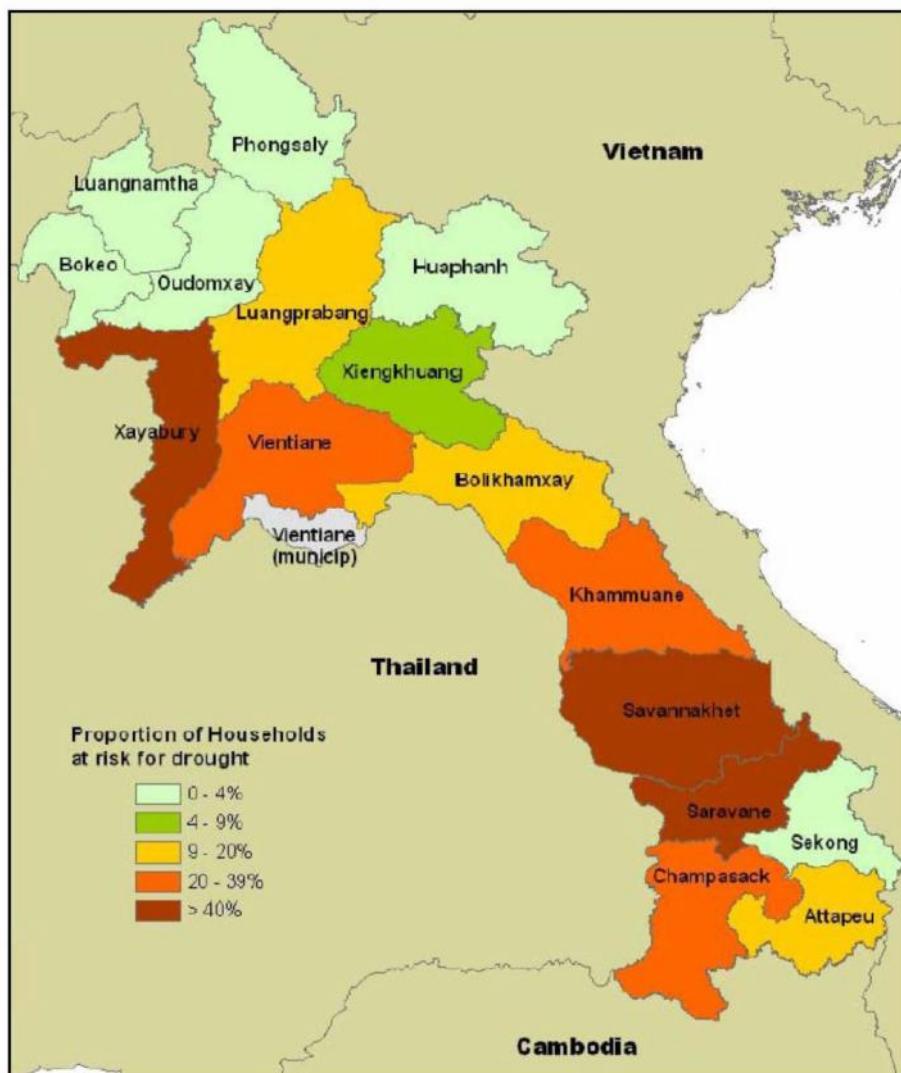
Year	Type of event	Affected region of Laos
1999	Flood	Central
2000	Flood	Central and Southern
2001	Flash flood	Central and southern
2002	Large flood, flash flood and land slide	Northern, Central, and Southern
2004	Flood	Southern
2005	Flash flood and land slide	Central and southern
2006	Flash flood and strong wind	Northern, Central and Southern
2007	Flood and drought	Central
2008	Large flood	Northern and central
2009	Flood (typhoon Ketsana)	Central and southern
2011	Flood (Haima and Nokten)	Northern and central parts
2013	Flood	Southern provinces
2014	Flood	All part of country
2015	flood	Northern province

Landslides are generally climate related, linked with extended period of rainfall, leading to soil saturation. Landslides are often localized where soil and forest cover disturbances have occurred, affecting the integrity of the slopes. This is case for roads, rural access tracks but also irrigation channels.

Droughts affecting agriculture production where water supply is not available or unreliable. A recent WFP studies has assessed the risks of households becoming food insecure because of drought showed that up to 40% of the households in Sayaboury could be affected, confirming the constraint relate to access to water in this province. The two southern provinces face similar drought related risks. The risk in Houaphan province in contrast is less severe (see map below)

Figure 13: Households at risk of becoming food insecure because of drought

**FIGURE 9.** Households in Lao PDR at risk of becoming food insecure because of droughts (excluding chronically food insecure)



Source: WFP Lao PDR, CFSVA Community Survey, 2006, in WFP, 2007.

## IV. Potential project's impacts and risks

### 4.1 Key potential impacts of the project

The project interventions will involve stakeholders from public and private sectors, but the main focus will be on rural communities and farmers' organisations such as Water Users Groups and Farmers production Groups in the target districts.

The rural communities traditional coping strategies to face minor events and variability were to rely on: crop diversification, forest and aquatic resources as sources of food, mutual help in the communities, etc. Capitalising in cattle used to provide resources to face more serious events such loss of crops or health problems.

When these strategies become ineffective or are considered by farmers and their dependents as insufficient to fulfil their needs, rural households have recourse to more drastic strategies: rapid liquidation of livestock, migration, sale of land, indebtedness, etc. Vulnerable households' face even more difficulties in meeting basic requirements: they may be households with limited labour capacity, farmers with very little landholding and no access to productive land, illiterate adults, women headed households, marginalised ethnic groups members.

In the project area, traditional livelihoods and farming systems are already affected by overarching trends: introduction of commercial agriculture, village reorganisation and rural migration, restriction on access to land and forest resources.

In this context, the assessment of project impacts is based on the assumption that the interventions will be based on choices and decision made at community / village level. The proposed local planning approach provides an adequate platform to identify and address impacts in a gradual manner:

- Impact avoidance is promoted through the local planning approach
- Reduction / minimization of impacts: In the case it appears that impact cannot be avoided then adjustments and measures are taken to reduce / minimize the impact
- Mitigation: when impact reduction is not possible or insufficient, the project will implement mitigation measures. The project will not fund activities or subproject that require compensation for negative impacts.

This gradual approach requires intense consultations and interactions based on trust.

The foreseen interventions are: support to local planning process, matching grants for farmers organisations, small scale water facilities for agricultural production, post-harvest equipment and facilities, market linkages, and nutrition support.

Investments in agricultural vegetable production (example of irrigated vegetables production). Vegetable production is generally popular because it does not require large production areas, it requires intensive (but manageable) labour input, it provides quick return, and the produces can be consumed as well as sold on the local market. It is also well adapted for nutrition related activities

Potential technical packages include plastic tunnels, mulching (plastic or crop residues), and drip or sprinkler irrigation. It is adapted to large valley floors and peri-urban areas. IFAD projects experience in Cambodia and Nepal have proven that impact on income is

significant. Intensification is visible with use of hybrid varieties, chemical inputs, use of plastic shades and irrigation.

**Table 6: irrigated vegetable production- Potential risks and impacts**

Off season vegetables	Impacts and risks	Mitigation
Social	(+) quick and regular income generation (+) market inclusion for land poor HH, women (-) market risks (-) Specialisation, reduced diversification of farming system, impact on food security (-) pollution and health risks related to chemical inputs (banned, expired products)	Risk / Control mitigation strategy  Improved / Good agricultural practices (GAP) Monitoring of market fairness and transparency Verification of validity of chemicals Safe use and disposal of pesticides and plastic sheets, metal frame for tunnels
Environmental and climate	(+) reduce pressure on other land use (-) potential concentrated pollution of soil and water (-) decreased agrobiodiversity of seeds (-) disposal of plastic sheets at end of life (-) plastic tunnel on wooden frame vulnerable to climate event (winds, heavy rain) (-) increased pressure from pest and disease	

Investments in relay crop after wet season rice (example of irrigated peanut production). Peanut production can be attractive to farmers as it can be grown after rice using paddy crop residues. It requires intensive (but manageable) labour input, it provides relatively quick return, and the produces can be consumed as well as sold on the local market. It is also well adapted for nutrition related activities. Peanut (or other pulses) capture atmospheric nitrogen in the soil, which is beneficial for the subsequent crop (may it another dry season irrigated crop or next wet season rice crop cycle)

Potential technical packages mulching (plastic or crop residues), and drip or sprinkler irrigation, introduction of rhizobium inoculum in the soil. Market needs to be confirmed (peanut consumption at festival time: February to April)

**Table 7: Irrigated diversified crops production (peanut, garlic and other) Potential risks and impacts**

Irrigated diversified crops	Impacts and risks	Mitigation
Social	(+) quick and regular income generation (+) market inclusion for land poor HH, women (-) market risks (-) Specialisation, reduced diversification of farming system, impact on food security (-) pollution and health risks related to chemical inputs (expired products)	Risk / Control mitigation strategy  Improved / Good agricultural practices (GAP) Monitoring of market fairness and transparency Verification of validity of chemicals Safe use and disposal of pesticides and plastic sheets, metal frame for tunnels
Environmental and climate	(+) reduce pressure on other landuse (-) potential concentrated pollution of soil and water (-) decreased agrobiodiversity of seeds (-) disposal of plastic sheets at end of life	

	(-) increased pressure from pest and disease sheets
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Investments in fruit production- Fruit production is attractive to farmers as it requires intensive labour at peak harvest time and relatively little maintenance the rest of the year. It is a medium to long term investment that provide a regular annual income that can be saved as a safety net. Dense fruit tree plantations may induce permanent or medium-term land-use conversion when established on fields that were previously dedicated to diversified food crops. In a case of low-density plantations, agro-forestry systems can be introduced, allowing to grow annual crops in association with the trees. Risks and impacts are also screened for the post-harvest and processing investments below.

Table 8: Fruit production (citrus and other)- Potential risks and impacts

Fruit production	Impacts and risks	Mitigation
Social	<ul style="list-style-type: none"> <li>+ significant income once a year, saving</li> <li>+ formal market arrangements</li> <li>+ inclusion for poor HH, women</li> <li>+ long term land use under tree plantation</li> <li>(-) market risks, contract enforcement</li> <li>(-) possible dominant position of groups and community leaders, group governance issues</li> <li>(-) food crop field conversion, reduced diversification of farming system detrimental to food crops</li> <li>(-) pollution and health risks related to chemical inputs (expired products)</li> </ul>	<ul style="list-style-type: none"> <li>Risk control / limitation strategy</li> <li>Women empowerment and Social inclusion measures</li> <li>GAP measures for orchard management</li> <li>Crop association and agroforestry</li> </ul>
Environmental, climate	<ul style="list-style-type: none"> <li>(+) reduced pressure on other land use</li> <li>(+) beneficial tree plantation as base for crop association</li> <li>(-) potential concentrated pollution of soil and water (fungicide)</li> <li>(-) conversion of land use (food crops for tree crops),</li> <li>(-) reduced fertilisation and soil cover on terraces</li> <li>(-) decreased agrobiodiversity of seeds</li> <li>(-) climate: increased pest and disease pressure,</li> <li>(+/-) geographic range of crop suitability shift</li> </ul>	<ul style="list-style-type: none"> <li>Avoidance strategy for issues related to storage: asset ownership and maintenance</li> </ul>

Fruit cold storage	Impacts and risks	Mitigation
Social	<ul style="list-style-type: none"> <li>(+) comparative advantage for group members (reduced loss, higher price after peak season)</li> <li>(+) product value addition</li> <li>(+) social capital building</li> <li>(+) recognition in the value chain</li> <li>(-) ownership of assets (e.g land of storage)</li> </ul>	<ul style="list-style-type: none"> <li>Risk avoidance strategy for storage building.</li> <li>Cost/benefit risk assessment of options for post-harvest technology</li> <li>Site selection: assessment</li> </ul>

	<p>building)</p> <p>(-) potential dominant position of group and local leader</p> <p>(-) cost benefit ratio of investment and storage capacity vs. production</p> <p>(-) building maintenance and repair requirements (water drainage)</p>	<p>of characteristics (access, exposition) and land ownership status</p> <p>Climate proofing of building design</p> <p>Suitable evaporative cooling technology can be designed at smaller scale for storage at individual farm level</p> <p>Complementary Option to storage: physical market at critical points of production areas</p>
Environmental, climate	<p>(+) zero energy evaporative cooling technology</p> <p>(-) risks to asset: landslide, winds, fire risks</p>	

Investments in access infrastructures: PICSA potential interventions will include upgrading and improvement of transport infrastructure to enhance farmers' capacity to access market outlets and reduce additional costs and losses due to transportation bottlenecks. The investment will focus on farm access track and village access tracks.

The project is to fund two type of access related interventions: (i) under output 1.3- improved access track from village to the main road implemented by contractors recruited at district level (ii) under output 1.5- farm tracks to be implemented under force account arrangement, implemented by the village and farmers groups with the infrastructure investment grant

Potential positive and negative impacts of those infrastructures are outlined below.

**Table 9: Access infrastructures: potential risks and impacts**

Access infrastructures	Impacts and risks	Mitigation
Social	<p>(+) better access to services (health, education), information and markets, multi benefit</p> <p>(+) market inclusion for poor and marginalised people</p> <p>(+) possible employment opportunities in case of community-led construction</p> <p>(-) unfair O&amp;M arrangements</p> <p>(-) safety concerns for users</p> <p>(-) maintenance and repairs beyond users capacity and financial means</p> <p>(-) social disruption due to outsiders interference in communities and local resources management</p>	<p>Risk / Control mitigation strategy</p> <p>The project will only promote localised small scale access infrastructures with contribution arrangements on a fair, transparent voluntary basis</p> <p>Consultations and mobilization at all stage of project, informed consent approach</p> <p>Cost benefit analysis and options assessment</p> <p>Safety measures and insurance during implementation (survey, construction, supervision)</p>
Environmental, climate	<p>(+) Improved access provide economic opportunities and relieve pressure on Natural resources</p> <p>(-) Degradation of soil during</p>	<p>O&amp;M plans and environmental management plans prepared and implemented</p>

Access infrastructures	Impacts and risks	Mitigation
	construction and throughout life time (-) Interruption of streams and drainage, water Impoundment (-) Vegetation and soil losses due to water induced erosion (-) climate change and extreme climate events damages	Mixed geotechnical and Bio engineering erosion protection and drainage measures Climate proofing Disaster prevention and recovery: Plan climate-related risk management, emergency response, and rehabilitation of damaged rural infrastructure (accountability)  Avoidance mitigation strategy Access infrastructures that involve involuntary encroachment on private property will be prescribed

Both types of access tracks under PICSA will be less than 10km in length and off-category. They will be based on community-based planning decisions. A rural road specialist will ensure that the highest standard of due diligence will be applied and that climate proofing measures are included in the plans. It is not expected that rural access tracks induce loss of private property. When this is the case, alternatives will be identified, and/or Free Prior Informed consent principle and procedure will be applied. The rural road engineer will also provide on the job training to district level staff and village authorities and will ensure that O&M arrangements are adequate, feasible and agreed upon on a co-management basis between the district line agency and the community.

Investing in productive small water infrastructures is critical to increase productivity and cropping intensity as well as livestock. Adaptation to climate change is also greatly enhanced by improved water availability in case of drought. Low-cost small-scale water management equipment is beneficial to improve livelihood and reduce vulnerability. Spiral pump and other innovative water drawing systems (hydraulic ram pump, solar pumps) that function on renewable source of energy are to be promoted and on other hand electric and gasoil pump are to be avoided. Shortfalls in past interventions in irrigation infrastructures: (i) infrastructures have sometime been inadequately designed and without appropriate technical supervision during construction (ii) design process has been overly influenced by technical mindset and local knowledge and needs have been overlooked (ii) the focus of the infrastructure activities has been heavily biased towards construction with insufficient attention to appropriate community-led operation and maintenance (O&M) arrangements.

Table 10: water infrastructures- potential risks and impacts

Water infrastructures	Impacts and risks	Mitigation
Social	(+ ) better access to water for off-season production (+ ) market inclusion for remote marginalised communities, income generation (+ ) possible employment opportunities in case of community-	Risk / Control mitigation strategy The project will only promote localised small-scale water infrastructures with contribution arrangements on a fair, transparent voluntary basis

	<p>led construction</p> <ul style="list-style-type: none"> <li>(-) localised encroachment on private property</li> <li>(-) unfair repartition of roles and responsibilities within users groups for operation and maintenance and usage rights</li> <li>(-) maintenance and repairs beyond users capacity and financial means</li> <li>(-) social disruption due to unequal access to water resource</li> <li>(-) loss of crop during rehabilitation works</li> </ul>	<p>Participation of communities at all stage. Local knowledge about water resources and risks are taken in account</p> <p>Mobilise and strengthen Institutions and pro-poor governance of land and water</p> <p>Promote water-efficient irrigation systems (e.g. drip irrigation, sprinkler) as well as innovation (spiral pump, ram pump)</p>
Environmental, climate	<p>(+) better resilience to dry spells</p> <p>(-) Degradation of soil, forest cover, river bank during construction</p> <p>(-) Effect on water resources upstream and downstream of the command area, depletion of the aquifer, and loss of access to water for non-irrigation users (e.g. livestock)</p> <p>(-) inadequate engineering and design of infrastructure, disruption/modification of surface water flow, drainage adjustments, inefficient uses of water</p>	<p>Promote water harvesting practices including capture of runoff where feasible</p> <p>Water use: optimisation of size and capacity with water requirements of crops and farming systems. Promote.</p> <p>Crossing points for livestock and existing paths</p> <p>Provisions for climate change proofing Disaster prevention and recovery</p> <p>Avoidance mitigation strategy</p> <p>Water infrastructures that involve involuntary encroachment on private property will be prescribed</p>

In the case where PICSA and the ADB funded Sustainable Rural Infrastructure Watershed Management Project co-finance intervention in the 15 selected irrigation schemes, the ADB social and environmental safeguard policy will apply. When PICSA is implemented as a "stand-alone" project the avoidance strategy outline in the table above is the preferred approach in the case where water related infrastructure shall involve involuntary resettlement or loss of private property and assets.

Beside the SRIWMP selected schemes, PICSA will target existing irrigation schemes that typically have a command area of less than 50ha. In any case, PICSA will not select irrigation schemes that have a command area of more than 100 ha.

Water resource. A potential risk in the interventions on water infrastructure is the absence of information and data on water availability, water balance and water quality. To mitigate the risk, the project will only intervene in areas with existing irrigation infrastructure relying on surface water. Past experience of irrigators in such existing schemes will provide information on the water resource. As mentioned in section 3.2 above (hydrology and water resources) there is also vast, largely untapped potential to use groundwater resources for irrigation.

## Empowerment of rural communities and village authorities

Positive impacts are expected in terms of empowerment through support to village committees and farmers groups, through support to local planning and implementation decentralised at village level. The social benefits of such approach have been demonstrated under other IFAD funded projects in Laos and neighbouring countries. This approach is in line with the government sam sang policy (three builds) in which the provincial administrative level has a policy mandate, the district administrative level has a holistic strengthening role and the village is the development implementation unit.

Possible negative impacts may arise if women and vulnerable people have limited access to information and project benefits. In particular access to equal marketing conditions may depend on power balance within the communities.

**Overlapping development initiatives.** Interventions duplication is also an identified risk mentioned and confirmed during consultations. Negative impacts can be avoided and limited by adequate coordination mechanisms with local authorities (District level) and other interventions in the same areas. Positive impacts include complementarities and synergies to provide integrated support to communities: social and productive infrastructures, extension support, value chain development services, social dimensions, food security, nutrition, WASH, etc. Common planning processes at community level are a critical aspect to avoid duplication and overlap. Groups' formation should be considered in a concerted manner between projects and co-financed initiatives.

## Labour productivity and resilient households

The PICSA should aim at increasing productivity of smallholders' labour while at the same time enhancing water and soil management in a way that builds resilience to climate change.. In addition, the expected increased stream of income from cash crop diversification and more reliable market linkage will have direct positive impact on households' resilience to climate shocks.

## Impact from the use of agrochemicals

Lao used to be practically free of the use of agro-chemicals up until the middle of the 1990s. Both main farming system (lowland rainfed paddy and slash and burn agriculture) were extensive and sustained by relying on natural biological processes to control pests and restore soil fertility.

In the slash and burn agriculture systems, as traditionally practiced in the upland, soil fertility used to be restored by burning biomass accumulated over long forest fallows (up to 15 years rotation). Under the forest zoning and land allocation programme introduced in the mid 1990's, the farmers were allocated three to four plots of secondary forest. As the forest fallows were shortened to few years, biomass could not be reconstituted, leading to a decline in upland rice yields and weed infestation. Conducting three manual weeding passes for a crop cycle became too labor intensive and using weed killers became a tempting option. In the mid 2000's, the use of agro-chemicals in upland farming systems increased with the expansion of cash crops such as animal feed maize in Sayaboury province and further to the other northern provinces.

In the low land, the shift from one rainfed rice crop to two irrigated crop cycles a year introduced a de facto mono-cropping system. To sustain and increase rice yields, the use of

chemical fertilizer became the norm in the irrigated areas in the plains along the Mekong river and its tributaries.

Use of agro-chemicals, both fertilizers and pesticides, is also widespread for vegetable production, as well as commercial crops such as watermelon and in banana plantations.

Issues related to pesticide application modalities, over dosage of active molecules, inadequate spraying material and protective gear and unregulated disposal of pesticide packages have now become a threat to the health of the farmers and rural households. Livestock and aquatic fauna are also being directly and negatively impacted. Pollution of soil and water, although not monitored, is also becoming a serious concern.

The Ministry of Agriculture and Forestry issued regulation on the Control of Pesticides in Lao PDR (Regulation No 2860/MAF, 11 June 2010) and more recently a Decree on Pesticide Management (Decree No. 258/GOV, 24 August 2017). Implementation and enforcement of the pesticide-related regulations remain limited but district agriculture and health departments regularly disseminate information to farmers on the dangers to their health and risks for the environment.

The key issue is the unregulated retailing of agro-chemicals, either by shops established at provincial and district centers or by "mobile retailers" who travel to rural villages to directly sell agro-chemicals to farmers.

PCISA will adopt a three-pronged strategy to mitigate risks related to agro-chemicals:

- (i) promotion of sustainable farming and good agriculture practices: introducing and promoting
- (ii) training and capacity building at district and village level to inform, sensitize and strengthen control and enforcement of existing pesticide-related regulations
- (iii) support to rural entrepreneurship to promote formal and reliable private stakeholders, including retailers of agricultural inputs and equipment.

## 4.2 Climate change and adaptation

Projections climate futures for Laos are subject to caution because of lack of consistent climate historical data. The great diversity of landscapes and topography, featuring eight ecoregions and three climate types make model-based projections difficult. There is currently no downscaled climate change scenario for Laos at national and subnational levels.

The Climate Risk and Adaptation Country Profile for Laos (2011) was derived from Vietnam from a suite of Global Circulation Models (GCMs) used by the Intergovernmental Panel on Climate Change. After this report, models provided different patterns of climate future, and key projected climate changes for Laos are:

Increasing temperatures: Mean annual temperatures are projected to increase by 1.4 to 4.3°C by 2100, with similar projected rates of warming for all seasons. Some studies indicate that similar warming is likely to occur across all regions, while others suggest that the country's southern climatic zone will experience smaller warming than the northern and north central zones. Cold snaps that affected parts of Houaphan and Xieng Khouang Provinces in the past are likely to become less frequent. the change in annual hot and cool days could be significant, with the number of days considered 'hot' under present climate increase by 2-3 weeks and the cool days decrease by 2-3 weeks

This trend may have a positive impact on extended crop suitability areas and reduced risks on livestock.

Mean annual rainfall is projected to increase, with the most significant increases expected in the wet season. Potential increases in rainfall are projected to be +10-30% in particular in the eastern and southern part of Lao PDR. The annual increase in precipitation by 2080-2099 might be 4.2% in particular in the north of the country.

More frequent extreme weather events are predicted by all models.

"Most Global Circulation Models (GCMs) for temperature are more consistent showing an increase in temperature between 0.6°C and 2°C in the Mekong Basin areas.

Between October and March, the projected rainfall might tend to decrease, leading to more severe drought periods, with implications for agriculture and irrigated land.

On the other hand, the projected increase in rainfall between April and September might cause flooding and increase the threat of food insecurity and deaths"

Climate Risk and Adaptation Country Profile (2011)

A recent study<sup>9</sup> shed new light on the climate change scenarios and their impact on agriculture production in Laos. The study concluded in an increasing rainfall in some parts of the extreme south and significant rainfall reduction in the North West. This finding tends to contradict the conclusions of some of the models mentioned above, highlighting climate modeling uncertainties.

The current and foreseen climate variability directly affects indigenous peoples' communities relying on natural resources and agriculture as the key element of their livelihoods. Climate variability directly threatens food security and cash income. Households with less land resource and limited labour are more vulnerable to climate variability and have less capacity to cope with crop failure or income loss. The experience from other IFAD funded projects such as FNML in southern Laos tend to demonstrate that addressing climate variability and enhancing adaptation capacity is challenging. Climate change scenarios and local adaptation investment planning have however resulted in piloting innovative adaptation options (such as solar pumps for instance) to mitigate climate variability. Such experiences are to be assessed through cross visits and potential for scaling up in the PICSA target area is to be explored.

## V. Environmental and social category

Environmental and social category is proposed as (B)

The project intends to provide support to farmers using land in and around irrigated areas. The project will by nature be small-scale and geographically dispersed. As indicated in the

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<sup>9</sup> CLEAR | Consolidated Livelihood Exercise for Analyzing Resilience

section 4.1 above, the identified risks will be addressed and managed through a range of adequate mitigation measures that are included and funded by the project.

The current environmental regulations (EIA decree) distinguish two categories of investment projects: project with minor impacts that require an initial environmental examination (IEE) and major project that require a full Environmental Impact Assessment (EIA) process. For investments in the agriculture and forestry sector, the decree set thresholds above which full Environmental Impact Assessments (EIAs) are required and environmental permits are to be requested from the Environment department. For irrigation, schemes with a command areas of less 100 Ha do not require IEE, projects between 100 ha and 2000 ha require an IEE and projects of more than 2000 ha require an EIA.

The national classification of irrigation schemes is based on command area: below 500 Ha are small scale schemes, between 500 and 1000 Ha are medium scale schemes, and over 1000 Ha are large scale schemes. The project will target only irrigation schemes of less than 100ha as a stand-alone intervention and will not require full EIA process. In the case of co-financing with ADB, the ADB social and environment safeguards will apply.

As a category B, there is low probability that the programme/project may lead to physical resettlement and economic displacement. The project design process is to apply due diligence and consultations. The process is guided by two key principles described in the Guidance for Involuntary resettlement: (i) do-no-harm principle (ii) free prior informed consent (FPIC) The aim to reach agreement with those affected and mitigation and monitoring measures required to ensure that those affected will not be negatively impacted.

The project will not fund or support any Category (A) activities and sub-projects.

## **VI. Climate risk category**

While the risk of climate change impact on livelihoods of vulnerable and marginalised people may be significant in the long term, the immediate climate risks are manageable as long as they are identified and addressed through multi-options approaches that are socially inclusive.

The Project will focus on irrigated agriculture diversification with specific attention in promoting adaptive cropping and crop rotation / crop association production systems. Improved smallholder access to market combined with extension services has proven potential to increase farmers' income. Adaptation measures are to be mainstreaming at institutional, project and community to enhance climate change adaptation potential of the poor households. With this strategy at place, the climate risk category of the Programme is assessed as moderate.

Climate risk category is proposed as moderate (2)

## **VII. Recommended features of project design and implementation**

In view of the above description and assessment, it appears clearly that there is great variability of situation in the project target provinces and areas.

It is recommended that the project design should be based on a principle of "acceptance of heterogeneity of needs" of the intended beneficiaries. Problem formulation, decision on

options and solutions and definition of roles and responsibility should be the result of a consultative process rather than of a blue-printed decision.

The decentralized nature of the PICSA approach and the focus on building capacity at district, village and farmers' organisation level, combined with a strong local planning strategy is to ensure that local needs and concerns are addressed adequately.

In the case of the co-financed interventions, the focus on local needs and concerns will be addressed through the decentralized planning process, with a strong involvement of village authorities in the decision-making process.

## 7.1 Environment and social mitigation measures

The environmental and social mitigation measures have been presented along with the key potential impacts of the project in section 4.1 above. They are presented in a combined matrix in Annex 4.

Most of the potential negative social and environmental impacts of the project can be avoided at site selection stage. In other words, the targeting strategy should be flexible enough to select sites where negative impacts will be minimum.

### Impact mitigation measures for irrigation related intervention

The national classification of irrigation schemes is based on command area: below 500 Ha are small scale schemes, between 500 and 1000 Ha are medium scale schemes, and over 1000 Ha are large scale schemes. In line with IFAD requirements, the threshold for small scale irrigation scheme is set at 100ha.

For irrigated scheme with command areas of more than 100 ha, development, rehabilitation and upgrading of infrastructures will be done only in partnerships with other agencies (ADB funded project). PICSA proceeds will not be eligible to fund any upgrade / rehabilitation or construction on irrigation scheme with a command area of more than 100 ha.

As a stand-alone intervention, PICSA will target scale-small irrigated scheme, typically between 8 and 50 ha and less than 100 ha in any case. PICSA will not invest in renovation or rehabilitation or construction of irrigation headwork infrastructures.

In the case of co-financed interventions: For schemes larger than 100ha, PICSA relies on partnerships with other development initiatives: for the ADB funded project, ADB social and environmental safeguards apply. PICSA irrigation-related interventions focus on bloc and farm level water management structures within small-scale irrigation schemes.

The matrix below summarizes the site selection criteria for lowland irrigation schemes:

Table 11: Eligibility criteria for PICSA funding in target irrigation schemes and villages

Irrigation scheme size	Command areas		
	Small Less than 100ha	Medium 100ha – 500 ha maximum	Large More than 500 ha
Support to WUG / WUA	<input checked="" type="checkbox"/> Eligible	<input checked="" type="checkbox"/> Eligible	<input checked="" type="checkbox"/> Eligible
Upgrading of headwork	<input type="checkbox"/> Not eligible	<input type="checkbox"/> Not eligible	<input type="checkbox"/> Not eligible
Upgrading of primary and secondary networks	<input checked="" type="checkbox"/> Eligible	<input type="checkbox"/> Not eligible	<input type="checkbox"/> Not eligible

Development of tertiary and bloc level networks	<input checked="" type="checkbox"/> Eligible	<input checked="" type="checkbox"/> Eligible	<input type="checkbox"/> Not eligible
On farm water management	<input checked="" type="checkbox"/> Eligible	<input checked="" type="checkbox"/> Eligible	<input type="checkbox"/> Not eligible

Because PICSA will only support existing irrigation systems, there is a low probability that the project impacts private assets. Existing main canal alignments will be upgraded or improved, and this will not involve creating new alignments. Most of the interventions will focus on tertiary level and on-farm level water management structures that are by nature small or removable (case of pipe irrigation systems)

The project will avoid interventions that involve losses of private assets. If losses cannot be avoided, the project will apply due diligence and follow the consultation processes for reaching agreement with those affected and mitigation and monitoring measures required to ensure that those affected will not be negatively impacted, as set forth in the IFAD SECAP guidance paper 13.

Impact mitigation measures for access related intervention are detailed in section 4.1 above.

#### Social impact mitigation

In addition to the specific impact mitigation measures mentioned in the Section 4.1 "Key potential impacts of the project" (see annex 4), the following measures should be included to ensure that social impacts are identified and addressed at early stage with each selected community.

#### Free, prior and informed consent (FPIC)

The FPIC procedure will be used in the case where impact on private household asset cannot be avoided. In this case, the project will only finance interventions that result in physical resettlement of 20 people or less or impacting less than 10 per cent of an individual household's assets. In such case, the project projects result in physical or economic displacement (affecting access and user rights to land and other resources), the implementing agency with support from the project team should obtain free, prior and informed consent (FPIC) from the affected people. The project is to thoroughly document the stakeholder engagement and consultation process.

In compliance with the "no harm" principle, PICSA will not fund interventions that result in physical resettlement of 20 people or more or impacting 10 percent or more of an individual household's asset. In line with the guidance paper 13 of the SECAP. The project will explore viable alternative project designs to address risks and to restore livelihoods to improve the standards of living of affected persons. The Project Implementation Manual (PIM) will provide detailed guidelines on how to conduct consultations, identify potential social and environmental risks and address them following the gradual mitigation approach: (i) Impact avoidance is promoted through this local planning approach (ii) Reduction / minimization of impacts: In the case it appears that impact cannot be avoided then adjustments and measures are taken to reduce / minimize the impact; (iii) Mitigation: when impact reduction is not possible or insufficient, the project will implement mitigation measures. The project will not fund activities or subproject that require compensation for negative impacts.

Indigenous people. Rural households in the target areas identify their appurtenance to ethnic groups based on language. Ethnic group members are well integrated in the Lao

society and have similar livelihoods as mainstream Lao. Ethnic groups and Lao Tai people share the same resources, have similar farming systems and marketing channels. Schools and other public facilities are accessed by ethnic groups and Lao-Tai alike, where communication in Lao language further foster integration. Village reorganization in village cluster has also created multi-ethnic villages with members of several ethnolinguistic groups.

The main constraint to participation of ethnic groups in planning and implementation of development activity is related to low level of literacy (women in particular)

For the purpose of PICSA, the local planning approach will make sure that ethnic minorities and other vulnerable people will have full access to information and will have opportunities to express their needs and concerns. A full Indigenous Peoples Plan is not deemed necessary but good practice to ensure full participation will be applied including: continuous consultation process, communication in local / ethnic language where necessary

#### Grievance redress procedure

Provision for grievance redress mechanisms are provided in the decree for compensation of impact of development projects (decree 84 dated 5 April 2016). The ADB has also an adequate policy for grievance redress procedure. The detailed procedure is to be defined in the Resettlement Land Acquisition and Ethnic Group Development Framework approved at appraisal stage. The basic principle is that the project is responsible for disseminating information about project interventions, activities, localization and possible impact to a wide audience, effectively reaching all potentially affected households.

To the extent possible, PICSA will align with and strengthen the existing grievance redress procedures and arrangements. PICSA will mobilize the district-level team and the project hired local development facilitators to ensure project information dissemination. PICSA features a strong focus on community-based planning. It is expected that negative impacts will be avoided at planning stage with assistance from the district-level project team and the local development facilitators.

Recording of grievance and redress mechanisms follow the national administrative levels: mediation starts at village level, coordinated by the village committee and mass organisations. In the case where the mediation at village is unsuccessful it is further taken at district level and further to provincial level. Unresolved grievances are to be taken to ministry level and ultimately can seek resolution in court.

## 7.2 Climate change adaptation and mitigation

Livelihood diversification is the primary strategy adopted by rural households to mitigate and adapt to climate related risks. There is currently little capacity at district level regarding climate change adaption strategy and options.

Through its various outputs and activities, PICSA interventions will directly contribute to enhance all elements of rural households' resilience: participation in planning, membership of social networks, capacity building, access to knowledge, diversified livelihood and income streams, access to credit, climatic risk hazard reduction through infrastructure and better soil and water management and water saving techniques. In addition, the project will focus on crosscutting dimensions that provide additional benefits in term of climate change adaptation.

## Options for climate change adaptation

### Flood impact mitigation: Climate proofing of infrastructures

Climate proofing among other measures (social, environmental, bioengineering practices) are crucial to adequacy, cost/benefit and sustainability of investments. For water-related infrastructures, farm access tracks and post-harvest structures, the project will promote climate proofing measures.

Climate proofing of transport and irrigation infrastructure will be considered at each step of the process, starting at the selection stage. It is critical that all potential infrastructures are screened for climate risks in order to select only sites where risks can be mitigated within available resources.

The second entry point for climate proofing is to undertake a detailed climate risk assessment immediately after site selection. This should be done under the community-based planning process with intensive involvement of WUG/WUA and access track maintenance committees to ensure that local knowledge and users' needs and concerns are properly addressed and considered. Critical points of the proposed infrastructures should be identified along with possible alternatives with less impact if any. Risks to be taken in account include: erosion and slope collapse, drainage, borrow and deposit areas for earthen materials.

The third entry point for climate proofing is to assess and enhance capacity and prior experience of local contractors in terms of bio-engineering and other preventive measures to improve climate resilience of infrastructures.

The fourth aspect for climate proofing is to ensure that supervision responsibilities are clearly defined and include detailed terms of reference to prevent and mitigate climate risks, both during construction and at O&M stage. To that end, on-the-job-training of contractor staff and voluntary labour is a necessary investment. Adequate resources are to be included in the project budget to mobilize a rural road engineer and an irrigation engineer who will ensure that the climate proofing process is adequately applied by project stakeholders.

Drought impact mitigation: The adverse impact of drought will be mitigated by intervention in irrigation and on-farm water management improvement, both in lowland and upland contexts. The project is to promote (i) irrigation techniques that reduce water wastage in the distribution network, using pipe or lined canals rather than open earthen canals (ii) improved water management practices down to the tertiary and on-farm levels (iii) water scheduling in line with actual crop water requirements estimated based on local climate conditions and water infiltration rates. Adequate technical assistance is to be mobilized to demonstrate and disseminate these techniques and provide on-the-job training to district level technical staff as well as water users organisations.

## Partnerships for climate change adaptation

Partnerships will be developed with private sector to ensure that adaptation and mitigation options are available to the farmers:

Partnerships with suppliers of irrigation equipment. Wholesalers and retailers of equipment such as solar pumps, drip lines, sprinklers etc. are quasi-absent from the district level markets in Laos. The project, through the matching grant facility will promote rural entrepreneurship to facilitate the establishment of reliable and profitable businesses at provincial and district level so that new technologies are made available to farmers and

farmers organizations. When compared to project led procurement of equipment, the establishment of businesses at local level will also ensure sustainability of the new technologies, including after sale services.

Partnerships with supplier of agricultural inputs. Fertilizers and pesticides are currently sourced by farmers either from retailers established at district level or from informal mobile retailers traveling from village to village. Issues with retailing and use of banned or expired agricultural inputs have been mentioned in the section 4.1 above. The PICSA project will promote partnerships with formal input retailers to encourage a wider offer of products including organic fertilizers and pesticides. In addition, the partnerships will promote involvement of the input retailers in providing advice to farmers to disseminate safe use of pesticide and good agricultural practices.

Partnerships with supplier of agricultural machinery. Wholesalers and retailers of machinery such as tractors, rice straw balers, direct seeding and transplanting machines, weeding machines, rice harvesters. In addition, there is a demand for small 4-wheel drive tractors able to carry half a ton and overloaded to up to one ton of produce (paddy, maize, etc.) packaged in sewed bags. These vehicles are instrumental in linking remote mountainous fields to the village or even to the nearest district center.

#### Options for climate change mitigation

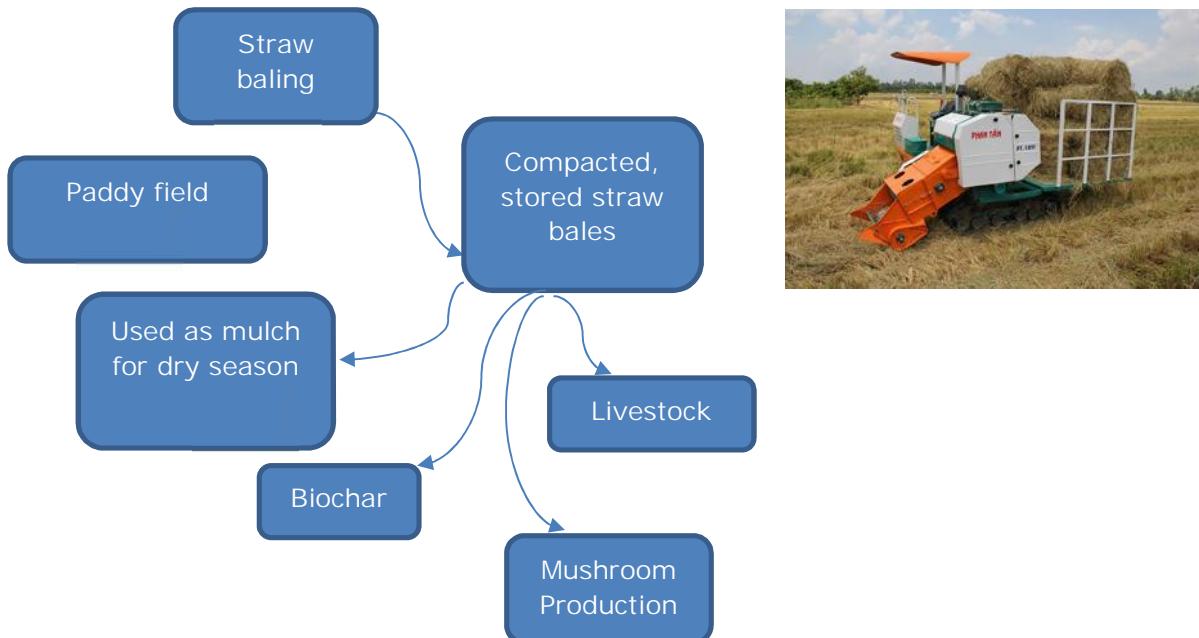
There are possible options for reduction of greenhouse emission such as crop residues management and irrigation water management.

Management of crop residues. In non-irrigated lowland paddy fields, rice straw is generally fed to cattle after harvesting and threshing. In irrigated areas, rice straw is most of the time burnt following harvest to allow for easier and quicker land preparation. Rice straw burned in the field causes greenhouse gas emissions (GHGE), including 0.7–4.1 g of CH<sub>4</sub> and 0.019–0.057 g of N<sub>2</sub>O per kg of dry rice straw, and emission of other gaseous pollutants such as SO<sub>2</sub>, NO<sub>x</sub>, HCl and, to some extent, dioxins and furans (Oanh et al 2011, Jenkins et al 2003)

Two alternatives are to be considered in project interventions: (i) reusing the rice straw as a mulch for the subsequent crop in dry season (ii) off-field straw management. Straw balers can improve management of crop residues to be used for: livestock and chicken in pens, mushroom production or reused in the same paddy field to mulch dry season diversified crops.

Off-field straw management options are described in IRRI website. Climate change mitigation benefits of straw management are significant. Assuming an average harvest index of 0.4 according to field data, i.e., if rice grain yield is 1 t ha<sup>-1</sup>, straw yield would be 1.5 t/ha (Schiller et al. IRRI, 2006). Harvest index is defined as the pounds of grain divided by the total pounds of above ground biomass (stover plus grain). It means that for an average paddy yield of 4 t/ha, straw can reach 10 tons / ha. Significant quantities of straw are burnt throughout Laos after each harvest causing a huge loss of biomass and significant greenhouse gas emissions and air pollution. source of aerosol particles such as coarse dust particles (PM10) and fine particles (PM2.5) (Chang et al 2013)

Figure 14: Rice straw management



Irrigation water management. Water ponding in paddy field induce emission of methane which is a potent greenhouse gas. By encouraging crop diversification in dry season replacement of a second paddy crop, the project will have a beneficial effect on reduction of GHG emissions.

### 7.3 Multi-benefit approaches

The highly diversified ecological conditions found in the northern Laos offer many opportunities for green-growth and multiple benefit approaches. Among others, the project will promote on-farm water storage such as water ponds that provide additional water resources to mitigate dry spells in dry season, along with providing ecological benefits by creating temporary habitats for the aquatic fauna in dry season.

In the sloping lands adjacent to the lowland irrigation schemes, agroforestry-based farming systems will be promoted through provision of pipe irrigation water supply systems. Such fruit tree-based systems provide multiple benefits: soil erosion control, diversified income, ecological services

### 7.4 Incentives for good practices

The project resources include matching grants facilities for farmers groups and private sectors. These funding facilities will provide incentives to adopt sustainable farming practices.

#### Good agriculture practices

The project is to promote sustainable agricultural practices with multiple combined benefits: provide diversified income to offset climate and market risks, (ii) increased return to labour (iii) conservation of soil and water resources (iv) enhanced ecological services

The incentives for promoting good practices have been included under output 1-5 in the form of Input packages grants. These grants will be made available for groups of farmers

wither formal and informal to access improved inputs such as improved seeds and organic fertilisers. In addition, under output 1.6 - Extension Service Provision, the project is to provide incentive to promote a diversified model of extension services, encouraging the private sector to provide adequate technical advice to farmers. Incentives are also to be mobilized to establish a network of lead farmers that will ensure that farmer-to-farmer extension becomes a reliable channel to access information and knowledge on sustainable and good agricultural practices.

#### Good on-farm water management practices

Currently, in most of the irrigated areas, headworks and canals are designed for paddy irrigation in dry season. This implies very high nominal design water flow and therefore oversized infrastructures. Unfortunately, little attention and investment is brought to tertiary and quaternary water distribution and on-farm water management.

The project will provide incentives for investments in good on-farm water management practices such as:

- Drip irrigation
- Sprinkler irrigation
- Furrow irrigation
- Water ponding at farm level
- Water evaporation reduction: use of mulch, shade trees, live fences to create micro-climate effect and reduce water loss

Figure 15: Drip irrigation and plastic mulching for dry season cucumber production in paddy fields



Irrigation development has focused on lowland paddy areas, generally overlooking opportunities to supply water in upland cropping areas. There is tremendous potential to use available water resources from permanent streams in the northern uplands to develop small scale pipe irrigation systems. The project will demonstrate the feasibility of such water supply and encourage the target communities to invest in upland irrigation.

Good Harvest and Post- harvest practices. The project will encourage the establishment of rural businesses, focusing on youth. Incentives in the form of matching grants will be provided to promote business along the value chain. Opportunities to establish small business for post-harvest activities such as drying, sorting and packaging will be promoted by the project.

The project is to provide incentives for existing business or start-up ventures through the Agribusiness Investment Facility Grant Fund under Output 1.2 - Effective Market Linkages.

Figure 16: Examples of current post-harvest practices



Cabbage unloaded from a hand-tractor cart at a collection point. Red chili drying on corrugated iron sheets on the road-side

## 7.5 Participatory processes

To ensure that climate change adaptation options are not blue-printed at high level and imposed on the “target communities” it is strongly recommended that the project adopts a decentralized approach.

Village Heads and Village Committee members and District staff will be trained to understand the objectives and working procedures of the Project. Village Committees will be assisted to provide local-level governance through making informed decisions on project planning, implementation and monitoring. The District authorities and the related District offices are partners in project planning, implementation and monitoring. The training therefore aims to strengthen the partnership – and thereby the coordination – between Districts and Villages.

## VIII. Analysis of alternatives

The alternatives are identified for strategic approaches toward irrigation development, irrigated agriculture, climate change adaptation

### Geographic coverage

The interventions intend to be concentrated in the northern part of the country in the framework of the partnership with the ADB funded SRIWSM. The alternative target areas to the southern provinces constitute an alternative option. However, the irrigation systems in the south are pump systems and have very different challenges, risks and opportunities. The PICSA project design and approach is robust and could be applied to the different context of the southern provinces. On the other hand, including additional provinces and district will require additional budget resources and adequate implementation arrangements for co-financement with the ADB funded GMS EWEC project

### Planning and implementation approach

The project has deliberately adopted a decentralized approach, focusing on district and village level as the key planning and implementation levels. The alternative is to focus on provincial level planning and implementation. However, the decentralized approach is in line with the government sam sang policy and has the potential to enhance more positive impacts in term of community empowerment and adequacy of interventions with local conditions.

## IX. Institutional analysis

### 9.1 Institutional framework

The project is aligned with government structure from national level to provincial, district and village levels. The line agencies at these various levels who have a role in social and environmental management are the ministry of Natural Resources and Environment Departments and its subnational and the Ministry of Agriculture and Forestry and their respective departments at provincial and district levels.

The decentralization policy set out in the “sam sang decree” (three builds) set out the mandate of the three subnational administrative levels where the province is in charge of strategic planning, the district level has a strengthened holistic support function and the village is the development implementation unit.

The PICSA project is to support the decentralized planning and implementation process by focusing on district and village level functions to enhance delivery of project outputs at community level. The PICSA project structure is to be relatively light at central and provincial level, in combination with the ADB funded project structure which includes a Programme Governance Team (PGT) at central level, based at the Department of Irrigation of MAF. The PGT has a coordination role to develop guidelines and operational procedures and ensuring that environmental and social safeguards requirements are met. The PGT will be led by a Project Director seconded by a GoL Deputy Project Director fully dedicated to IFAD funded PICSA.

Under SRIWSM, Provincial Project Management units will be in charge of planning, budgeting, financial management, procurement, disbursement, contract management,

safeguard monitoring, compliance monitoring. In addition, PICSA will mobilize project staff for financial management and procurement assigned to each of the Provincial PIUs based at the Provincial Agriculture and Forestry Office (PAFO)

PICSA will complement such arrangements at central and provincial levels by establishing a District Implementation Units (DIUs) in each target district comprised of a coordinator (DAFO) and is supported by DAFO's Finance Section, as well as by the Technical Assistants (TA) that are placed at the Provincial level. The Technical Assistants will be in charge of providing support to front-line project implementers (district staff) to demonstrate and disseminate best practices in community-based planning approach and the social and environmental risks assessment and mitigation measures. They will also provide guidance on the implementation of the matching grants facilities so that they address social, environmental and climate related risks.

The technical team will include the following positions: under output 1.1 training of District Staff and Village Authorities: one local development TA per province; under output 1.2 International Technical Assistance to oversee the Agribusiness Investment Facility Grant Funds; under output 1.3 Improved access: Rural road specialist; under Output 1.4 - Water User Groups Trained: WUG Development and O&M Specialist, On-farm Water Management Specialist, International Irrigation O&M Specialist; Output 1.5 - Matching Grants Provided: Farmer Group Investment Advisors will ensure that the grants are inclusive and allocated on a transparent basis. Under output 1.6: extension technical assistance will provide support to promote sustainable agriculture and diversified extension channels; and under component 2: nutritionists technical assistance

At sub district level, PICSA will also mobilize cluster development facilitators. They will be the front-line project facilitators at field level, maintaining continuous communication between the project and the village authorities as well as individual beneficiary households. This will ensure that any adverse impact, concern and grievance will be identified in a timely manner and communicated to DIUs and PIUs.

The project will also be implemented within the existing regulatory framework. The key Lao PDR legislation and policies relevant to the environmental and social management of the project include:

- Constitution of the Lao People's Democratic Republic (1991, amended 2003 and 2015);
- Environmental Protection Law (EPL, 2013);
- Ministerial Instruction No. 8030/MONRE on Environmental and Social Impact Assessment (ESIA) and Initial Environmental Examination (IEE) of Investment Projects (2013);
- Decree on Protected Area (No.134/G, May 2015)
- Public Involvement Guideline (2012);
- Guideline for Consultation with ethnic groups (2012)
- Water and Water Resources Law (1996);
- Forestry Law (2007);
- Wildlife Law and Aquatic Law (2007);
- Decree on Compensation and Resettlement of People Affected by Government Projects (No. 84/GOL, 5 April 2016);
- Law on Grievance Redress 012/NA (December 5, 2014)
- Land Law (2013).

- Law on Handling of Petitions (2015)

In the agriculture sector, relevant regulations related to environmental risk are:

- Irrigation Law
- Regulation on the Control of Pesticides in Lao PDR (2014);
- Decision on Good Agriculture Practices for Produce Quality Management Standards No 0539/MF, issued on 09/02/2011;
- Decision on GAP for Labor Safety, Health and Welfare issued on 9/02/2011 No. 0540/MAF;
- Decision on Good Agriculture Practices for Environmental Management No 0538/MF, issued on 09/02/2011;

## 9.2 Capacity building

Although information about climate change and its consequence has been disseminated and is well understood by line agencies at provincial and district levels, experience in designing and implementing climate change adaptation options on the ground is still low. PICSA in coordination with the ADB funded SRIWSM is to provide direct support to government technical personnel appointed from the agriculture and forestry line agencies at provincial and district levels.

PICSA has a strong capacity strengthening focus under Output 1.1 - District Staff and Village Authorities Trained. As described in section 9.1 above, technical assistance will be instrumental in providing guidance on climate change adaptation, social and environmental safeguards.

The PICSA interventions are relatively small-scale and are below the threshold size of investments requiring EIAs and environmental permit. In this regard, the role of the department of Natural resources and environment will be limited. However, the Provincial department of Natural resources and environment (PoNRE) have a critical role in environmental monitoring of project interventions as well as water resources monitoring.

## 9.3 Additional funding

There is no additional funding expected for PICSA.

## X. Monitoring and evaluation (M&E)

The monitoring and evaluation framework will follow the IFAD enhanced operational approach to result-based management. Core indicators introduced in 2017 will form the basis of the M&E system, including indicators related to environmental sustainability and climate change under Strategic Objective 3: Strengthening the environmental sustainability and climate resilience of poor people's economic activities. The monitoring and evaluation system will include key indicators focusing on the main identified risks e.g number of groups supported to sustainably manage climate risks natural resources, number of persons provided with climate information, areas brought under climate resilient land management. The selected indicators are to be disaggregated along gender, ethnic groups and youth dimensions to verify that project interventions are inclusive.

The monitoring and evaluation functions will be under the responsibility of the provincial implementation units. The cluster development facilitators will be involved in the monitoring function of the project to collect data at community level to inform the selected indicators.

**Knowledge management:** The programme will pilot and promote innovative approaches for extension delivery mechanisms, lowland on-farm irrigation practices, upland irrigation water supply systems, etc. Knowledge management will explicitly include lessons learnt on climate adaptation and resilience. Secondly, the programme is to promote a participatory approach for infrastructure development that strongly promotes climate resilience and climate proofing concepts. The matching grants investments will be able to leverage sustainable and resilient value chains particularly by adopting green options at the processing and wholesaling stages. The programme design intends to include a KM strategy based on Knowledge Attitude and Practices studies where all project personnel are actively involved. Documenting good practices and proven models while identifying positive and negative impact on climate adaptation capacities will be challenging and will require adequate staff training. The KM strategy adopted under FNML project has been scaled up to other IFAD funded project (AFN in northern Lao) and can serve as a basis for PICSA KM function.

## XI. Further information

Additional information is needed for several aspects of the project to better define risks, mitigate negative impacts and enhance positive impacts.

- (i) Mapping of the target areas and identification of potential target irrigation schemes and beneficiary households in the target districts. A separate mission is planned for early 2019 to collect and analyse data that will further inform the final design stage planned for March 2019
- (ii) ADB safeguards documentation will be released after the appraisal mission. This will provide additional information on alignment with the PICSA ESMP>

## XII. Budgetary resources and schedule

PICSA is supported by an IFAD loan of USD 21 million equivalent. The loan will be provided in United States dollars under blend terms. The Government contribution is estimated at USD 2.2 million and covers salaries of Government staff as well as local taxes and duties. The beneficiary contribution – largely comprising their share in the matching grants – amounts to approximately USD 4.9 million; and the private sector contributes approximately USD 1.5 million.

IFAD funding provides investment into a wider irrigation sector programme which is co-funded by ADB/EU (SRIWMSP – USD 39.2 million) and GIZ/GCF (Implementation of the Lao PDR Emission Reductions Program through Improved Governance and Sustainable Forest Landscape Management – USD 45 million).

Resources have been included in the budget to cover for the following requirements:

Under output 1.1: District Staff and Village Authorities Trained, the project will mobilise a local development technical assistant to ensure that project information is widely disseminated and that the local planning process adequately addresses concerns of potential affected households. In addition, cluster facilitators will be hired by the project to ensure a continuous flow of information between the communities and the district level project team.

Budget has been included to ensure that government staff at district level are trained on applying due diligence to identify and address potential social and environmental impacts

Under output 1.3: Improved Access, a rural road specialist will ensure that due diligence is applied to identify and address potential adverse social and environmental impacts. In addition, the rural road specialist will provide on the job training for district level staff and village authorities to include climate proofing approach and measures in the design and implementation of the access tracks.

Under output 1.4 Water User Groups Trained, resources have been included to ensure that WUA/WUG lead the decision-making process toward the improvement and upgrade of irrigation infrastructure. The focus will be put on on-farm level water management, in support to crop diversification. An on-farm water management specialist and a WUG/WUA development expert will be mobilized for the first years of project implementation. They will be supported by an international TA that will provide innovative options and best practices for irrigation development and O&M in both lowland and upland situations. Adequate due diligence will be applied to ensure that the adverse negative impacts are avoided and that the free prior informed consent principle will apply.

Under Output 1.6 - Extension Service Provision a diversified approach to extension service delivery will be promoted, involving public extension staff but also private sector stakeholders (buyers, suppliers of inputs and equipment) as well as farmer-to-farmer extension. Resources have been allocated to adequately improve the quality and relevance of services and advice provided to farmers in order to support dissemination, demonstration and adoption of sustainable farming practices.

Overall, resources have been adequately allocated to ensure that the human resource and expertise is mobilized to identify and address adverse impacts and maximise positive impacts that foster sustainable and climate resilient development.

Project schedule: The project is expected to start in early 2020 and to be completed in 2025, spanning 6 years of implementation.

### XIII. Stakeholder consultations

Stakeholders consultations have been undertaken at concept note stage and continued at early design stage. Consultations were conducted at all administrative levels (ministry, provincial authorities and line agencies, district level and village/community levels) Further consultations will be undertaken when conducting the mapping exercise and additional data collection activities to identify potential target areas and project beneficiaries.

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## Annex 1- Terms of reference

The expert will cover all aspects related to management and maintenance of the irrigation scheme (component 3.1). In addition, the expert will be responsible to carry out the analysis and reporting along the IFAD Social, Environmental and Climate Assessment Procedures (SECAP) in relation to the future proposed programme activities. His specific tasks are to:

### Component 3.1

- Identify issues and constraints faced by smallholder farmer and related support services in managing and maintaining irrigation and transport infrastructure;
- Design appropriate project measures to improve access to technical services commensurate to local capacities and availability of long term funding (budget). Consider inclusion of private sector led advisory services and funding mechanisms to be piloted and mainstreamed if successful
- Identify opportunities for farmers to organise themselves into water users groups (WUG) and link them effectively to private and public sector technical services for the maintenance of the scheme.
- Design appropriate institutional set up of WUGs, their organisation and governance, financing strategy, technical support structure;
- Make provisions for and outline appropriate training opportunities to strengthen organisational, managerial and business skills of WUG members, local , district and provincial administration , with the ultimate objective of strengthening O&M.
- Ensure adequate linkages between sub-component 3.1 and 3.2 – 3.4 and the ADB funded NRI-AF2.
- Design the detailed arrangements for sub-component 3.1, assess the investment and recurrent cost , need for technical assistance etc. . Collaborate with the relevant team members and especially with the team leader and mission economist on all design aspects and project cost.

### SECAP

- Review and describe specific resource management as practiced by the target groups in the selected project area.
- Assess environmental and climate risks for the programme target group, their current mitigation and adaptation measures and related policies that support / constraint them.
- Consider the implications of a significant change in land use for environmental sustainability; anticipate and address possible social, environmental, institutions risks to the poorer and vulnerable groups associated with project interventions. In the same vein, review the options of a watershed or value chain based approach for the set of programme interventions
- Assess the relationship of land ownership and tenure, and land use in the programme target areas, in collaboration with the CCA, gender & targeting specialist;
- Provide clear guidance on which activities should not be financed by the project, and ensure that it identifies adequately environmental and social measures (including

those required for adaptation to climate change impacts on the upland areas) and includes environmental monitoring.

- Based on the above, identify good practices/feasible climate change adaptation measures for smallholder agriculture and related sectors to be supported by the programme within the current socio-economic settings.

Outputs:

- prepare all sections related to the management of sustainable irrigation and transport infrastructure in the aide memoire, programme design report and related appendices.
- prepare the analysis and reporting along the IFAD Social, Environmental and Climate Assessment Procedures (SECAP) in relation to the future proposed project activities. Depending on the environmentally category, prepare the required reports, Terms of References for the ESIA, ESMF, IPP and FPIC (see abbreviation list in SECAP)
- contribute to other appendices as deemed required.

## Annex 2- Environmental and social screening

The legal classification of size is based on command area: Over 1000 Ha are large scale schemes, between 500 and 1000 Ha are medium scale schemes, and below 500 Ha are small scale schemes.

<b>Project location</b>	
1. Would the project develop any wetlands? (Guidance statement 1)	The project does not intend to develop any wetland
2. Would the project cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. conversion of more than 50 hectares of natural forest, loss of habitat, erosion/other form of land degradation, fragmentation and hydrological changes)? (Guidance statements 1, 2 and 5)	The project will not cause significant impact to habitat and ecosystems
3. Does the proposed project target area include ecologically sensitive areas, areas of global/national significance for biodiversity conservation, and/or biodiversity-rich areas and habitats depended on by endangered species? (Guidance statement 1)	The project target area consists of existing agricultural land (both lowland and upland) and does not include ecologically sensitive areas of global/national significance
4. Is the project location subjected to major destruction as a result of geophysical hazards (tsunamis, landslides, earthquakes, volcanic eruptions)?	The project location is not subject to major destruction as a result of geophysical hazards
<b>Natural resources</b>	
5. Would the project lead to unsustainable natural resource management practices (fisheries, forestry, livestock) and/or result in exceeding carrying capacity. For example, is the development happening in areas where little up-to-date information exists on sustainable yield/carrying capacity? (Guidance statements 4, 5 and 6)	
6. Would the project develop large-scale aquaculture or mariculture projects, or where their development involves significant alteration of ecologically sensitive areas?	No aquaculture component. The project does not intend to develop large-scale aquaculture. Aquatic animal conservation and promotion of small-scale production of grets, eels and catfish, etc.
7. Would the project result in significant use of agrochemicals which may lead to life-threatening illness and long-term public health and safety concerns? (Guidance statement 14)	The project is not expected to result in significant use of agro-chemicals. The project approach is to promote sustainable farming (crop rotation and irrigated crop diversification, agroforestry) and good agriculture practices
8. Does the project rely on water-based (groundwater and/or surface water) development where there is reason to believe that significant depletion and/or reduced flow	No evidence

has occurred from the effects of climate change or from overutilization? (Guidance statement 7)	
9. Does the project pose a risk of introducing potentially invasive species or genetically modified organisms which might alter genetic traits of indigenous species or have an adverse effect on local biodiversity? (Guidance statement 1)	No introduction / import of seeds is required by the project activities
10. Does the project make use of wastewater (e.g. industrial, mining, sewage effluent)? (Guidance statement 7)	The project does not make use of wastewater
Infrastructure development	
11. Does the project include the construction/rehabilitation/upgrade of dam(s) and/or reservoir(s) meeting at least one of the following criteria? - more than 15-meter-high wall; - more than 500-meter-long crest; - more than 3 million m <sup>3</sup> reservoir capacity; or - incoming flood of more than 2,000 m <sup>3</sup> /s (Guidance statement 8)	No
12. Does the project involve large-scale irrigation schemes rehabilitation and/or development (more than 100 hectares per scheme)? <sup>63</sup> (Guidance statement 7)	The project will target scale-small irrigated scheme, typically between 8 and 50 ha and less than 100 ha in any case. PICSA will not invest in renovation or rehabilitation or construction of irrigation headwork infrastructures. For schemes larger than 100ha, PICSA relies on partnerships with other development initiatives: for the ADB funded project, ADB social and environmental safeguards apply. PICSA irrigation-related interventions focus on bloc and farm level water management structures within small-scale irrigation schemes. The national classification of irrigation schemes is based on command area: below 500 Ha are small scale schemes, between 500 and 1000 Ha are medium scale schemes, and over 1000 Ha are large scale schemes
13. Does the project include construction/rehabilitation/upgrade of roads that entail a total area being cleared above 10 km long, or any farmer with more than 10 per cent of his or her private land taken? (Guidance statement 10)	The project includes construction / rehabilitation/upgrade of farm access roads, within or around irrigation schemes and from village center to production areas in within the village territory
14. Does the project include drainage or correction of natural waterbodies (e.g. river training)? (Guidance	The project does not include drainage or correction of natural waterbodies

statement 7)	
15. Does the project involve significant extraction/diversion/containment of surface water, leaving the river flow below 20 per cent environmental flow plus downstream user requirements? (Guidance statement 7)	The project does not involve extraction of surface water that would leave the river flow below 20% environmental flow plus downstream user requirement
<b>Social</b>	
16. Would the project result in economic displacement or physical resettlement of more than 20 people, or impacting more than 10 per cent of an individual household's assets? (Guidance statement 13)	The project does not intend to
17. Would the project result in conversion and/or loss of physical cultural resources? (Guidance statement 9)	No
18. Would the project generate significant social adverse impacts to local communities (including disadvantaged and vulnerable groups and indigenous people) or other project-affected parties? (Guidance statement 13)	No
<b>Other</b>	
19. Does the project include the manufacture and transportation of hazardous and toxic materials which may affect the environment? (Guidance statement 2)	No
20. Does the project include the construction of a large or medium-scale industrial plant?	No
21. Does the project include the development of large-scale production forestry? (Guidance statement 5)	No
<b>Rural finance</b>	
22. Does the project support any of the above (Question 1 to Question 21) through the provision of a line of credit to financial service providers? (Guidance statement 12)	No
<b>Location</b>	
23. Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas that may have adverse impacts on habitats, ecosystems and/or livelihoods? (Guidance statements 1, 2 and 12)	<b>No</b>
<b>Natural resource management</b>	
24. Do the project activities include rangeland and livestock development? (Guidance statement 6)	The project activities do not include rangeland and livestock development
25. Does the project involve fisheries where there is information on stocks, fishing effort and sustainable yield? Is there any risk of overfishing, habitat damage and knowledge of fishing zones and seasons? (Guidance statement 4)	No fisheries activities
26. Would the project activities include aquaculture and/or agriculture in newly introduced or intensively practiced areas? Do project activities include conversion of wetlands and clearing of coastal vegetation, change in hydrology or introduction of exotic species? (Guidance	No

statement 4)	
27. Do the project activities include natural resource-based value chain development? (Guidance statements 1, 6 and 12)	No
28. Do the project activities include watershed management or rehabilitation?	No
29. Does the project include large-scale soil and water conservation measures? (Guidance statements 1 and 5)	
<b>Infrastructure</b>	
30. Does the project include small-scale irrigation and drainage, and small and medium dam subprojects (capacity < 3 million m <sup>3</sup> )? (Guidance statements 7 and 8)	Yes
31. Does the project include small and microenterprise development subprojects? (Guidance statements 12 and 13)	Yes
32. Does the project include the development of agroprocessing facilities? (Guidance statements 2, 6 and 12)	No
33. Would the construction or operation of the project cause an increase in traffic on rural roads? (Guidance statement 10)	No
<b>Social</b>	
34. Would any of the project activities have minor adverse impacts on physical cultural resources? (Guidance statement 9)	No
35. Would the project result in physical resettlement of 20 people or less, or impacting less than 10 per cent of an individual household's assets (Guidance statement 13)?	Yes
36. Would the project result in short-term public health and safety concerns? (Guidance statement 14)	No
37. Would the project require a migrant workforce or seasonal workers (for construction, planting and/or harvesting)? (Guidance statement 13)	No
<b>Rural finance</b>	
38. Does the project support any of the above (Question 23 to Question 37) through the provision of a line of credit to financial service providers? (Guidance statement 12)	<b>No</b>

## Annex 3- Climate Screening

1. Is the project area subject to extreme climatic events, such as flooding, drought, tropical storms or heat waves?	No
2. Do climate scenarios for the project area foresee changes in temperature, rainfall or extreme weather that will adversely affect the project impact, sustainability or cost over its lifetime?	No
3. Would the project make investments in low-lying coastal areas/zones exposed to tropical storms?	No
4. Would the project make investments in glacial areas and mountains zones?	No
5. Would the project promote agricultural activity in marginal and/or highly degraded areas that have increased sensitivity to climatic events (such as on hillsides, deforested slopes or floodplains)?	No
6. Is the project located in areas where rural development projects have experienced significant weather-related losses and damages in the past?	No
7. Would the project develop/install infrastructure in areas with a track record of extreme weather events?	No
8. Is the project target group entirely dependent on natural resources (such as seasonal crops, rainfed agricultural plots, migratory fish stocks) that have been affected by in the last decade by climate trends or specific climatic events?	No
9. Would climate variability likely affect agricultural productivity (crops/livestock/fisheries), access to markets and/or the associated incidence of pests and diseases for the project target groups?	No
10. Would weather-related risks or climatic extremes likely adversely impact upon key stages of identified value chains in the project (from production to markets)?	No
11. Is the project investing in climate-sensitive livelihoods that are diversified?	Yes
12. Is the project investing in infrastructure that is exposed to infrequent extreme weather events?	Yes
13. Is the project investing in institutional development and capacity-building for rural institutions (such as farmer groups, cooperatives) in climatically heterogeneous areas?	Yes
14. Does the project have the potential to become more resilient through the adoption of green technologies at a reasonable cost?	Yes
15. Does the project intervention have opportunities to strengthen indigenous climate risk management capabilities?	Yes
16. Does the project have opportunities to integrate climate resilience aspects through policy dialogue to improve agricultural sector strategies and policies?	No
17. Does the project have potential to integrate climate resilience measures without extensive additional costs (e.g. improved building codes, capacity-building, or including climate risk issues in policy processes)?	Yes
18. Based on the information available would the project benefit from a more thorough climate risk and vulnerability analysis to identify the most vulnerable rural population, improve targeting and identify additional complementary	No

## Annex 4- Environmental and social management plan

ESMP

Off season vegetables	Impacts and risks	Mitigation
Social	<ul style="list-style-type: none"> <li>(+) quick and regular income generation</li> <li>(+) market inclusion for land poor HH, women</li> <li>(-) market risks</li> <li>(-) Specialisation, reduced diversification of farming system, impact on food security</li> <li>(-) pollution and health risks related to chemical inputs (expired products)</li> </ul>	<ul style="list-style-type: none"> <li>Risk / Control mitigation strategy</li> <li>Improved / Good agricultural practices (GAP)</li> <li>Monitoring of market fairness and transparency</li> </ul>
Environmental and climate	<ul style="list-style-type: none"> <li>(+) reduce pressure on other landuse</li> <li>(-) potential concentrated pollution of soil and water</li> <li>(-) decreased agrobiodiversity of seeds</li> <li>(-) disposal of plastic sheets at end of life</li> <li>(-) plastic tunnel on wooden frame vulnerable to climate event (winds, heavy rain)</li> <li>(-) increased pressure from pest and disease</li> </ul>	<ul style="list-style-type: none"> <li>Verification of validity of chemicals</li> <li>Safe use and disposal of pesticides and plastic sheets, metal frame for tunnels</li> </ul>
Irrigated diversified crops	Impacts and risks	Mitigation
Social	<ul style="list-style-type: none"> <li>(+) quick and regular income generation</li> <li>(+) market inclusion for land poor HH, women</li> <li>(-) market risks</li> <li>(-) Specialisation, reduced diversification of farming system, impact on food security</li> <li>(-) pollution and health risks related to chemical inputs (expired products)</li> </ul>	<ul style="list-style-type: none"> <li>Risk / Control mitigation strategy</li> <li>Improved / Good agricultural practices (GAP)</li> <li>Monitoring of market fairness and transparency</li> </ul>
Environmental and climate	<ul style="list-style-type: none"> <li>(+) reduce pressure on other landuse</li> <li>(-) potential concentrated pollution of soil and water</li> <li>(-) decreased agrobiodiversity of seeds</li> <li>(-) disposal of plastic sheets at end of life</li> <li>(-) increased pressure from pest and disease</li> </ul>	<ul style="list-style-type: none"> <li>Verification of validity of chemicals</li> <li>Safe use and disposal of pesticides and plastic sheets</li> </ul>
Fruit production	Impacts and risks	Mitigation
Social	<ul style="list-style-type: none"> <li>+ significant income once a year, saving</li> <li>+formal market arrangements</li> <li>+ inclusion for poor HH, women</li> <li>+long term land use under tree plantation</li> <li>(-) market risks, contract enforcement</li> <li>(-) possible dominant position of groups and community leaders, group governance issues</li> <li>(-) food crop field conversion, reduced diversification of farming system detrimental to food crops</li> <li>(-) pollution and health risks related to</li> </ul>	<ul style="list-style-type: none"> <li>Risk control / limitation strategy</li> <li>Women empowerment and Social inclusion measures</li> <li>GAP measures for orchard management</li> </ul>

	chemical inputs (expired products)	
Environmental, climate	<ul style="list-style-type: none"> <li>(+) reduced pressure on other land use</li> <li>(+) beneficial tree plantation as base for crop association</li> <li>(-) potential concentrated pollution of soil and water (fungicide)</li> <li>(-) conversion of land use (food crops for tree crops),</li> <li>(-) reduced fertilisation and soil cover on terraces</li> <li>(-) decreased agrobiodiversity of seeds</li> <li>(-) climate: increased pest and disease pressure,</li> <li>(+/-) geographic range of crop suitability shift</li> </ul>	<p>Crop association and agroforestry</p> <p>Avoidance strategy for issues related to storage: asset ownership and maintenance</p>
Fruit cold storage	Impacts and risks	Mitigation
Social	<ul style="list-style-type: none"> <li>(+) comparative advantage for group members (reduced loss, higher price after peak season)</li> <li>(+) product value addition</li> <li>(+) social capital building</li> <li>(+) recognition in the value chain</li> <li>(-) ownership of assets (e.g land of storage building)</li> <li>(-) potential dominant position of group and local leader</li> <li>(-) cost benefit ratio of investment and storage capacity vs. production</li> <li>(-) building maintenance and repair requirements (water drainage)</li> </ul>	<p>Risk avoidance strategy for storage building.</p> <p>Cost/benefit risk assessment of options for post-harvest technology</p> <p>Site selection: assessment of characteristics (access, exposition) and land ownership status</p> <p>Climate proofing of building design</p> <p>Suitable evaporative cooling technology can be designed at smaller scale for storage at individual farm level</p> <p>Complementary Option to storage: physical market at critical points of production areas</p>
Environmental, climate	<ul style="list-style-type: none"> <li>(+) zero energy evaporative cooling technology</li> <li>(-) risks to asset: landslide, winds, fire risks</li> </ul>	Mitigation
Access infrastructures	Impacts and risks	Mitigation
Social	<ul style="list-style-type: none"> <li>(+) better access to services (health, education), information and markets, multi benefit</li> <li>(+) market inclusion for poor and marginalised people</li> <li>(+) possible employment opportunities in case of community-led construction</li> <li>(-) unfair O&amp;M arrangements</li> <li>(-) safety concerns for users</li> <li>(-) maintenance and repairs beyond users capacity and financial means</li> <li>(-) social disruption due to outsiders</li> </ul>	<p>Risk / Control mitigation strategy</p> <p>The project will only promote localised small scale access infrastructures with contribution arrangements on a fair, transparent voluntary basis</p>

	interference in communities and local resources management	
Environmental, climate	<p>(+) Improved access provide economic opportunities and relieve pressure on Natural resources</p> <p>(-) Degradation of soil during construction and throughout life time</p> <p>(-) Interruption of streams and drainage, water Impoundment</p> <p>(-) Vegetation and soil losses due to water induced erosion</p> <p>(-) climate change and extreme climate events damages</p>	<p>Consultations and mobilization at all stage of project, informed consent approach</p> <p>Cost benefit analysis and options assessment</p> <p>Safety measures and insurance during implementation (survey, construction, supervision)</p> <p>O&amp;M plans and environmental management plans prepared and implemented</p> <p>Mixed geotechnical and Bio engineering erosion protection and drainage measures</p> <p>Climate proofing</p> <p>Disaster prevention and recovery: Plan climate-related risk management, emergency response, and rehabilitation of damaged rural infrastructure (accountability)</p> <p>Avoidance mitigation strategy</p> <p>Access infrastructures that involve involuntary encroachment on private property will be prescribed</p>
Water infrastructures	Impacts and risks	Mitigation
Social	<p>(+) better access to water for off-season production</p> <p>(+) market inclusion for remote marginalised communities, income generation</p> <p>(+)possible employment opportunities in case of community-led construction</p> <p>(-)localised encroachment on private property</p> <p>(-)unfair repartition of roles and responsibilities within users groups for operation and maintenance and usage rights</p> <p>(-)maintenance and repairs beyond users capacity and financial means</p> <p>(-)social disruption due to unequal access to water resource</p>	<p>Risk / Control mitigation strategy</p> <p>The project will only promote localised small scale water infrastructures with contribution arrangements on a fair, transparent voluntary basis</p> <p>Participation of communities at all stage.</p>

	(-) loss of crop during rehabilitation works	
Environmental, climate	<p>(+) better resilience to dry spells</p> <p>(-)Degradation of soil, forest cover, river bank during construction</p> <p>(-)Effect on water resources upstream and downstream of the command area, depletion of the aquifer, and loss of access to water for non-irrigation users (e.g. livestock)</p> <p>(-)inadequate engineering and design of infrastructure, disruption/modification of surface water flow, drainage adjustments, inefficient uses of water</p>	<p>Local knowledge about water resources and risks are taken in account</p> <p>Mobilise and strengthen Institutions and pro-poor governance of land and water</p> <p>Promote water-efficient irrigation systems (e.g. drip irrigation, sprinkler) as well as innovation (spiral pump, ram pump)</p> <p>Promote water harvesting practices including capture of runoff where feasible</p> <p>Water use: optimisation of size and capacity with water requirements of crops and farming systems. Promote.</p> <p>Crossing points for livestock and existing paths</p> <p>Provisions for climate change proofing Disaster prevention and recovery</p> <p>Avoidance mitigation strategy</p> <p>Water infrastructures that involve involuntary encroachment on private property will be prescribed</p>



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 6: First Annual Work Plan and Budget (AWPB)**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



Country - Implementing Institution: Lao People's Democratic Republic - Ministry of Agriculture and Forestry / Department of Irrigation

Project: Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)

Loan/Grant no. : IFAD Loan ID 2000001892

Document: Annual Work Plan and Budget (AWPB) - DRAFT

Reporting Period: January 1 to December 31, 2020

Version: April 2019

Revised:

1000

Goal/Objective/Outcomes/Targets		Annual targets					Total budget				Expenditure forecast 2020 (USD 1,000)					
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
Project goal	Enhanced livelihood resilience and sustainability within the project intervention area															
	# target group households (extreme poor, poor, lower middle income) reporting enhanced resilience			9 184			22 960	households (cumulative)								
Development Objective	Sustainable and inclusive local economic development															
	% of households below the poverty line			20%			5%	% (cumulative)								
	% of women reporting improved quality of their diets (CI 1.2.8).			60%			80%	% (cumulative)								
Component 1	Intensified agricultural development															
Outcome	Cropping intensity in lowland paddy fields (proxy for farming system intensity)			120%			140%	% (cumulative)								
Outcome	% of households reporting adoption of new/improved inputs, technologies or practices (CI 1.2.2)			20%			50%	% (cumulative)								
Output 1.1	District staff and village authorities trained															
Output	# of Districts with more than 15 staff trained in project implementation and management procedures	19	19	19	19	19	19	Districts (cumulative)								
Targets	Local development TA engaged	48						person-months	48	2 000	96 000	86 400	9 600		96 000	
	Training organised at district level	19						#	19	1 111	21 109	18 998	2 111		21 109	
	Study tour for village committee	19	19					#	38	1 667	63 327	28 497	3 166		31 664	
	Motorcycles for cluster facilitators	112						#	112	3 609	404 178	181 880	222 298		404 178	
	M&E equipment for cluster facilitators	112						#	112	1 111	124 432	99 546	24 886		124 432	
	Cluster Facilitators	56	112	112	112			person-years	392	3 030	1 187 760	169 680			169 680	
	DSA for district staff	2 736	2 736					days	5472	8	42 556	19 150	2 128		21 278	
	DSA for local development TA	720						days	720	11	7 999	7 199	800		7 999	

	Motobike operating and maintenance	1	1	1	1	1	lump-sum	6	22 230	133 379	20 007	2 223			22 230	22 230
Output 1.2	Water user groups trained															
Output	# of groups supported to sustainably manage natural resources and climate-related risks (CI 3.1.1) assessed by WUGs using up-to-date water distribution and O&M plans	45	110	175	260	350	440	WUGs (cumulative)								
Targets	Training of WUGs	220	220					WUGs	440	556	244 420	109 989	12 221		122 210	122 210
	Seasonal planning and closing of accounts			220	220	220	220	WUGs	880	556	489 280					
	WUG Development and O&M Specialist	6	12					person-months	18	3 000	54 000	16 200	1 800		18 000	18 000
	On-farm Water Management Specialist	6	12					person-months	18	3 000	54 000	16 200	1 800		18 000	18 000
	International Irrigation O&M Specialist	4	2	2	1	1	2	person-months	12	20 000	240 000	72 000	8 000		80 000	80 000
	IMT / WUG Development and Administration	9	10					training sessions	19	556	10 555	4 500	500		5 000	5 000
	On-farm Water Management	9	10					training sessions	19	556	10 555	4 500	500		5 000	5 000
	Irrigation O&M	9	10					training sessions	19	556	10 555	4 500	500		5 000	5 000
	Field studies			1	1	3		# studies	5	5 000	25 000					
	National conference, incl preparation and reporting						1	#	1	13 000	13 000					
	DSA for DAFO/DOI staff	3 072	3 072	3 072	3 072	3 072	3 072	days	18 432	8	143 346	21 502	2 389		23 891	23 891
Output 1.3	Extension services provided															
Output	number of persons trained in production practices and/or technologies (CI 1.1.4)	2 800	7 000	11 200	18 200	25 200	28 000	persons (cumulative)								
Targets	Training for district extension staff	19	19					course	38	1 111	42 218	18 998	2 111		21 109	21 109
	Motorcycles for District Extension Staff	38						no	38	3 970	150 845	120 676	30 169		150 845	150 845
	Equipment for District Extension Staff	19						district	19	1 111	21 109	16 887	4 222		21 109	21 109
	Agricultural Extension Expert	114	228	114				pers-month	456	800	364 800	82 080	9 120		91 200	91 200
	Trainings organised at District level		19	19	19	19		#	76	700	53 200					
	Farmer groups exchange visits		38	38	38			#	114	1 500	171 000					
	DSA district extension staff	3 072	3 072	3 072	3 072	3 072	3 072	days	18 432	8	143 346	21 502	2 389		23 891	23 891
	Motorcycle operating	1	1	1	1	1	1	lump-sum	6	7 542	45 253	6 788	754		7 542	7 542
	Provincial staff monitoring missions	19	19	19	19	19	19	districts	114	222	25 331	3 800	422		4 222	4 222

Output 1.4	Farmer Group Investment Facility established															
Output	Number of rural producers' organisations supported (CI 2.1.3) by FGIF	240	610	980	1 600	2 200	2 450	# (cumulative)								
Targets	Infrastructure investments grants		70	70	70	70	70	group	350	11 460	4 011 000					
	Production package grants	40	120	150	150	150	90	group	700	8 090	5 663 070	161 802		161 802		323 604
	Capacity building grants	40	120	150	150	150	90	group	700	606	424 200	19 392		4 848		24 240
	Model and Young Farmers grants	40	120	150	150	150	90	group	700	1 889	1 322 090	60 438	0	15 110		75 548
	Motorbikes	19						#	19	3 609	68 566	43 882	24 684			68 566
	Office equipment	19						#	19	1 667	31 664	25 331	6 333			31 664
	Farmer Group Investment Advisors	16	16	16	16	16	16	pers-year	96	7 272	698 112	116 352				116 352
	Counterpart DAFO Allowances	3 420	3 420	3 420	3 420	3 420	3 420	pers-day	20 520	7	145 076	24 179				24 179
	Motorcycle operation and maintenance	1	1	1	1	1	1	lumpsum	6	3 771	22 627	3 394	377			3 771
	Office costs	19	19	19	19	19	19	district	114	417	47 495	7 124	792			7 916
	Events	19	19	19	19	19	19	district	114	222	25 331	3 800	422			4 222
Component 2	Value Chains developed															
Outcome	% of households reporting an increase in sales of farm products			20%			50%	% (cumulative)								
Outcome	% of participating enterprises having a positive net return on investment			80%			90%	% (cumulative)								
Output 2.1	Farmer Group Investment Facility established															
Output	# of multi-stakeholder platform meetings held	30	80	125	200	280	314	# (cumulative)								
Targets	International Value Chain Expert	3	2	2	1	1	1	person-month	10	20 200	202 000	60 600				60 600
	Vehicles	4						no	4	45 985	183 941	117 722	66 219			183 941
	Equipment	4						no	4	1 667	6 666	5 333	1 333			6 666
	Agro-enterprise advisors	4	4	4	4	4	4	pers-year	24	30 300	727 200	121 200				121 200
	DSA POIC counterparts	360	720	720	720	720	720	day	3 960	10	39 996	3 636				3 636
	Office expenses	1	1	1	1	1	1	lumpsum	6	6 666	39 996	5 999	667			6 666
	Vehicle operating and maintenance	1	1	1	1	1	1	lumpsum	6	10 117	60 701	9 105	1 012			10 117
	Multi-stakeholder platform events	76	76	76	76	76	76	events	456	444	202 646	30 397	3 377			33 774

Output 2.2	Agro-Enterprise Investment Facility established																
Output	Number of rural enterprises accessing business development services (CI 2.1.1)	20	50	102	154	206	255	# (cumulative)									
Targets	Category 1 grants	5	20	30	30	30	-	#	115	3 156	362 969	12 625	-	3 156	15 781	15 781	
	Category 2 grants	5	20	30	30	25	-	#	110	11 110	1 222 100	27 775	-	27 775	55 550	55 550	
	Category 3 grants		5	10	10	5	-	#	30	35 000	1 050 000	-	-	-	-	-	
	Agro-enterprise capacity building grants	15	50	70	70	19	-	#	224	808	180 992	8 484	0	3 636	12 120	12 120	
Output 2.3	Access improved																
Output	Number of kilometers of roads constructed, rehabilitated or upgraded (CI 2.1.5) by Project's village to village		100	202	302	402	504	# (cumulative)									
Targets	Rural road specialist (national TA)	12	6					pers-month	18	3 000	54 000	32 400	3 600	-	36 000	36 000	
	Training for village track maintenance group		12	7				village	19	500	9 500	-	-	-	-	-	
	Survey and design of access track	252	252					km	504	100	50 400	22 680	2 520	-	25 200	25 200	
	Village to village access road /a		252	252				km	504	5 000	2 520 000	-	-	-	-	-	
	DSA for Village / kumban consultations /b	1 824	1 824					days	3 648	8	28 370	12 767	1 419	-	14 185	14 185	
	Monitoring by district committee		12	7				district	19	200	3 800	-	-	-	-	-	
Component 3	Improved nutrition practices																
Outcome	% of women reporting improved quality of their diets (CI 1.2.8) assessed by % of women meeting the Minimum Dietary Diversity Score (women consume at least five out of the defined 10 defined food groups daily)			60%			80%	% (cumulative)									
Output 3.1	School-based nutrition interventions established																
Output	# of schools serving meals of adequate nutritional value			64			160	# (cumulative)									
Output	# of new school gardens established			40			100	# (cumulative)									
Targets	Partnership with StC/Luang Prabang	1	1					lumpsum	2	100 000	200 000	90 000	10 000	-	100 000	100 000	
	Water supply system for gardens /b	8	24	24	24			gardens	80	556	44 440	3 555	889	-	4 444	4 444	
	Land preparation and fencing /c	16	48	48	48			gardens	160	265	42 420	-	424	3 818	-	4 242	4 242
	Agricultural inputs	16	48	48	48			no	160	159	25 452	2 291	255	-	2 545	2 545	

	Training for teacher (gardening)	16	48	48	48			training	160	167	26 664	2 400	267			2 666	2 666
	Training for teacher (nutrition)	16	48	48	48			training	160	83	13 332	1 200	133			1 333	1 333
	Training for pupils	10	30	30	30	30	30	schools	160	83	13 332	750	83			833	833
	Training of cooks	16	48	48	48			session	160	56	8 888	800	89			889	889
	Equipment for school kitchens	16	48	48	48			kit	160	222	35 552	2 844	711			3 555	3 555
	nutrition advisor	6	12	6				person-month	24	2 500	60 000	13 500	1 500			15 000	15 000
Output 3.2	Increased dietary intake and improved dietary quality																
Output	# of households provided with targeted support to improve their diets (CI 1.1.8)	200	400	680	950	1 300	1 700	# (cumulative)									
Targets	Nutrition assessment/KAP survey	1						no	1	25 000	25 000	22 500	2 500			25 000	25 000
	District meetings/presentation of results	19						no	19	100	1 900	1 710	190			1 900	1 900
	Agricultural inputs	200	300	400	400	300	300	kit	1 900	222	422 180	35 552	8 888			44 440	44 440
	Nutrition Information Sessions	76	76	76	76	76	76	session	456	33	15 198	2 280	253			2 533	2 533
	Training of extension officers	114	228	114				training	456	122	55 728	12 539	1 393			13 932	13 932
	DSA /b	6 144	6 144	6 144	6 144	6 144	6 144	day	36 864	7	260 628	43 438				43 438	43 438
Project management																	
	4WDs DAFOs - Start Up /a	6						no	6	45 985	275 912	176 584	99 328			275 912	275 912
	4WDs DAFOs	13						no	13	45 985	597 809	382 598	215 211			597 809	597 809
	Computers and printers	1						set	1	49 995	49 995	39 996	9 999			49 995	49 995
	Photocopier	1						lumpsum	1	30 553	30 553	24 442	6 111			30 553	30 553
	Furniture	1						lumpsum	1	38 885	38 885	31 108	7 777			38 885	38 885
	SAGE/ACCPAC set-up and upgrade	1						lumpsum	1	10 000	10 000	9 000	1 000			10 000	10 000
	Training	1	1	1				lumpsum	3	10 000	30 000	9 000	1 000			10 000	10 000
	Closing training						1	lumpsum	1	10 000	10 000						
	Start up workshop	1						lumpsum	1	7 777	7 777	6 999	778			7 777	7 777
	Orientation training PICSA staff	1						lumpsum	1	7 777	7 777	6 999	778			7 777	7 777
	PICSA management meetings /b	6	12	12	12	12	12	meeting	66	56	3 666	300	33			333	333
	Baseline survey	1						lumpsum	1	25 000	25 000	22 500	2 500			25 000	25 000
	Mid-term survey			1				lumpsum	1	12 000	12 000						
	End-line Survey						1	lumpsum	1	16 000	16 000						
	Annual Outcome Surveys			1	1	1	1	each	4	4 375	17 500						
	ORMS	1			1			each	2	4 375	8 750	3 938	438			4 375	4 375
	Impact assessment survey				1			each	1	25,000	25 000						
	Knowledge management products		1	1	1	1	1	set	5	2,500	12 500						
	Anual audits	1	1	1	1	1	1	lumpsum	6	15 000	90 000	13 500	1 500			15 000	15 000
	Translation services	1	1	1	1	1	1	lumpsum	6	4 000	24 000	3 600	400			4 000	4 000
	Project Director	6	12	12	12	12	6	pers-month	60	303	18 180		1 818			1 818	1 818
	Project Coordinator	12	12	12	12	12	12	pers-month	72	5 050	363 600	60 600				60 600	60 600
	Finance Manager	6	12	12	12	12	6	pers-month	60	2 525	151 500	15 150				15 150	15 150

Procurement Officer	6	12	12	12	12	6	pers-month	60	2 525	151 500	15 150				15 150	15 150
M&E Officer	6	12	12	12	12	6	pers-month	60	1 263	75 750	7 575				7 575	7 575
Provincial Directors (4x)	24	48	48	48	48	24	pers-month	240	354	84 840		8 484			8 484	8 484
Provincial Accountant (4x)	24	48	48	48	48	24	pers-month	240	354	84 840	8 484				8 484	8 484
District Accountant (19x)	114	228	228	228	228	228	pers-month	1 254	354	443 289	40 299				40 299	40 299
O&M 4WDs DAFO	1	1	1	1	1	1	lumpsum	6	15 175	91 051	13 658	1 518			15 175	15 175
Office accommodation	12	12	12	12	12	12	lumpsum	72	4 000	287 971		47 995			47 995	47 995
Travel expenses	1	1	1	1	1	1	lumpsum	5	16 665	83 325	7 499	833			8 333	8 333
Operating cost start-up phase	1						lumpsum	1	8 888	8 888	7 999	889			8 888	8 888
Operating cost other	4 625	25 250	25 250	25 250	25 250	12 625	USD/year	118 250	1	131 376	4 625	514			5 138	5 138

Expenditure forecast 2020 (USD 1,000)				
IFAD	GoL	Beneficiaries	Private sector	Total
3 234 855	893 341	185 577	34 567	4 348 341
				4 348 341



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 7: Procurement Plan for first 18 months**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



COSTAB/ AWPB Code	Description of Procurement Packages	Unit	18-month Quantity	Unit Cost (US\$)	18-month Total Cost (US\$)	Number of contracts	Procurement Method	IFAD's Prior/ Post Review	Implementing Agency
1.1.1.a1	Local development TA /a	pers-month	48	2,000	96 000	4	ICS	Prior	PGT
1.1.2.a1	Cluster Facilitators /d	pers-year	168	3,000	515 827	112	ICS	Post	DPIT/PPIT
1.2.1.b1.1	WUG Development and O&M Specialist	pers-month	18	3,000	54 000	1	ICS	Prior	PGT
1.2.1.b1.2	On-farm Water Management Specialist	pers-month	18	3,000	54 000	1	ICS	Prior	PGT
1.2.1.b1.3	International Irrigation O&M Specialist /b	pers-month	6	20,000	120 000	1	ICS	Prior	PGT
1.3.1.a4	Agricultural Extension Expert /c	pers-month	342	800	273 600	19	ICS	Prior	PPIT/DPIT
1.4.2.a1	Farmer Group Investment Advisors /e	pers-year	32	7,200	235 031	16	ICS	Prior	DPIT/PPIT
2.1.1.a1	International Value Chain Expert	pers-month	5	20,000	101 808	1	ICS	Prior	PGT
2.1.2.a1	Agro_Enterprise Advisors salaries /b	pers-year	8	30,000	244 824	4	ICS	Prior	PGT/PPIT
2.3.1.a1	Rural road specialist (national TA)	pers-month	18	3,000	54 000	1	ICS	Prior	PGT
2.3.1.c1	Survey and design of access track	km	504	100	50 400	Multi	FA	Post	DPIT/PPIT
3.1.1.e	Nutrition Advisor /d	pers-month	18	2,500	45 000	1	ICS	Prior	PGT
3.2.1.a1	Nutrition assessment/KAP survey	no	1	25,000	25 000	1	CQS	Post	PPIT/DPIT
4.1.b1.1	SAGE/ACCPAC set-up and upgrade	lumpsum	-		10 000	1	CQS	Post	PGT
4.1.b1.2	SAGE/ACCPAC Training	lumpsum	-		20 000	1	CQS	Post	PGT
4.1.b3.1	Baseline survey	lumpsum	-		25 000	1	CQS	Post	PGT
4.1.b3.5	ORMS	each	1	4,375	4 375	1	CQS	Post	PGT
4.1.b1.1	Knowledge management products	set	1	2,500	2 500	1	CQS	Post	PGT
4.1.c1	Annual audits /c	lumpsum	-		30 000	2	QCBS	Prior	PGT
4.1.c2	Translation services	lumpsum	-		8 000	2	CQS	Post	PGT
4.2.a1.3	Finance Manager	pers-month	18	2,500	46 056	1	ICS	Prior	PGT
4.2.a1.4	Procurement Officer	pers-month	18	2,500	46 056	1	ICS	Prior	PGT
4.2.a1.5	M&E Officer /e	pers-month	18	1,250	23 028	1	ICS	Prior	PGT
4.2.a2.2	Accountant - Louang Prabang	pers-month	18	350	6 448	1	ICS	Post	PPIT
4.2.a3.2	Accountant - Xieng Khuang	pers-month	18	350	6 448	1	ICS	Post	PPIT
4.2.a4.2	Accountant - Huaphan	pers-month	18	350	6 448	1	ICS	Post	PPIT
4.2.a5.2	Accountant - Sayaboury	pers-month	18	350	6 448	1	ICS	Post	PPIT
4.2.a6.1	Accountant - Districts	pers-month	342	350	122 509	19	ICS	Post	DPIT

**Notes:**

Consultant selection methods:

- QCBS: Quality and Cost Based Selection
- QBS: Quality-based Selection
- FBS: Fixed Budget Selection
- LCS: Least Cost Selection
- CQS: Selection Based on Consultant's Qualifications
- FA: Force Account (Self-Implementation)
- ICS: Individual Consultant Selection
- SSS: Single Source Selection

COSTAB/ AWPB Code	Description of Procurement Packages	Unit	18-month Quantity	Unit Cost (US\$)	18-month Total Cost (US\$)	Number of contracts	Procurement Method	IFAD's Prior/ Post Review	Implementing Agency
G	1.1.1.c1 and 1.3.1.a2 and 1.4.1.b1 Motorcycles for cluster facilitators (112); Motorcycles for District Extension Staff (38); Motorbikes for district FGIF staff (19)	no	169	3,573	623 589	1	ICB/NCB	Prior	PGT
G	1.1.1.c2 M&E equipment for cluster facilitators	person	112	1,000	124 432	1	NCB	Prior	PGT
G	1.3.1.a3 Equipment for District Extension Staff	district	19	1,000	21 109	19	LS	Post	DPIT
G	1.4.1.b2 Office equipment for District FGIF	no	19	1,500	31 664	19	LS	Post	DPIT
G	2.1.1.b2 Equipment /a - PPITs	no	4	1,500	6 666	4	LS	Post	PPIT
G	3.1.1.b1 Water supply system for gardens /b	gardens	32	500	18 043	Multi	LS	LS	DPIT
G	3.1.1.b2 Land preparation and fencing /c	gardens	64	250	17 223	Multi	LS	LS	DPIT
G	3.1.1.b3 Agricultural inputs	no	64	150	10 334	Multi	LS	LS	DPIT
G	3.1.1.d Equipment for school kitchens	kit	64	200	14 434	Multi	LS	Post	DPIT
G	3.2.1.b1 Agricultural inputs	kit	500	200	112 433	Multi	LS	Post	DPIT
G	4.1.a1 and 4.1.a2.1 and 4.1.a2.2 4WDs DAFOs (13); 4WDs Vehicles PPITs (4)	no	17	45,530	781 750	1	ICB/NCB	Prior	PGT
G	4.1.a1 4WDs DAFOs - Start Up/a	no	6	45,530	275 912	1	ICB/NCB	Prior	PGT
G	4.1.a2.2 Computers and printers; Photocopiers	lumpsum	-		80 548	1	NCB	Prior	PGT
G	4.1.a2.3 Furniture	lumpsum	-		38 885	1	NS	Post	PGT

**Notes:**

Procurement methods for goods, works:

- ICB: International Competitive Bidding
- NCB: National Competitive Bidding
- LCB: Local Competitive Bidding
- NS: National shopping
- LS: Local shopping
- SLS: Simplified Local Shopping
- FA: Force Account (Self-Implementation)
- DC: Direct Contracting

Type of Procurement	COSTAB/AWPB Code	Description of Procurement Packages	Unit	18-month Quantity	Unit Cost (US\$)	18-month Total Cost (US\$)	Number of contracts	Procurement Method	IFAD's Prior/ Post Review	Implementing Agency
FGIF	1.4.1.a1	Infrastructure investments grants /a	group	70	11,460	826 426	70	FGIF grant	Post	FGIF Groups
FGIF	1.4.1.a2	Production package grants /b	group	160	8,010	1 313 832	160	FGIF grant	Post	FGIF Groups
FGIF	1.4.1.a3	Capacity building grants /c	group	160	600	98 414	160	FGIF grant	Post	FGIF Groups
FGIF	1.4.1.a4	Model and Young Farmers grants /d	group	160	1,870	306 725	160	FGIF grant	Post	SLM/CCA, Young Famers
ABIF	2.2.1.a1	Category I: Up to USD 2,500 /b	no	25	3,125	80 169	25	ABIF Grant	Post	ABIF applicants
ABIF	2.2.1.a2	Category II: USD 2,500 to 15,000. /c	no	25	11,000	282 194	25	ABIF Grant	Post	ABIF applicants
ABIF	2.2.1.a3	Category III: USD 15,000 to 50,000. /d	no	5	35,000	180 285	5	ABIF Grant	Post	ABIF applicants
PA	2.2.1.a4	Grants for capacity building /e	no	65	800	53 328	1	Partnership Agreement	Prior	PGT
W	2.3.1.c2	Village to village access road /a	km	252	5,000	1 492 760	Multi	CB/Shopping	Post	DPIT
PA	3.1.1.a1	Collaboration with nutrition partners /a	lumpsum	2	100,000	200 000	1	Partnership Agreement	Prior	PGT

**Notes:**

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- ICS: Individual Consultant Selection
- SSS: Single Source Selection

Procurement methods for goods, works:

- ICB: International Competitive Bidding
- NCB: National Competitive Bidding
- LCB: Local Competitive Bidding
- NS: National shopping
- LS: Local shopping
- SLS: Simplified Local Shopping
- FA: Force Account (Self-Implementation)
- DC: Direct Contracting

Type of Procure ment Item Code Description of Procurement Packages Unit Unit Cost (MMK) 14 Month Total Cost (MMK) Number of Contracts Procurement Method Prior Post Bidding Implementing Agency

Table 1. Output 1.1 - District staff and village authorities related

C	1.1.1.1.1	I. Investments Costs	per-month	48	2,000	96,000	4	ICS	Prior	PCT
<b>I. Investments Costs</b>										
1. Training of village committee by district TA										
a. No										
b. No										
2. Training of village committee by district TA										
a. No										
3. Training of village committee by district TA										
a. No										
4. Training of village committee by district TA										
a. No										
5. Training of village committee by district TA										
a. No										
6. Training of village committee by district TA										
a. No										
7. Training of village committee by district TA										
a. No										
8. Training of village committee by district TA										
a. No										
9. Training of village committee by district TA										
a. No										
10. Training of village committee by district TA										
a. No										
11. Training of village committee by district TA										
a. No										
12. Training of village committee by district TA										
a. No										
13. Training of village committee by district TA										
a. No										
14. Training of village committee by district TA										
a. No										
15. Training of village committee by district TA										
a. No										
16. Training of village committee by district TA										
a. No										
17. Training of village committee by district TA										
a. No										
18. Training of village committee by district TA										
a. No										
19. Training of village committee by district TA										
a. No										
20. Training of village committee by district TA										
a. No										
21. Training of village committee by district TA										
a. No										
22. Training of village committee by district TA										
a. No										
23. Training of village committee by district TA										
a. No										
24. Training of village committee by district TA										
a. No										
25. Training of village committee by district TA										
a. No										
26. Training of village committee by district TA										
a. No										
27. Training of village committee by district TA										
a. No										
28. Training of village committee by district TA										
a. No										
29. Training of village committee by district TA										
a. No										
30. Training of village committee by district TA										
a. No										
31. Training of village committee by district TA										
a. No										
32. Training of village committee by district TA										
a. No										
33. Training of village committee by district										



Table 2. Output 1.2 - Water User Groups trained

\a Structure, administration, O&M etc.  
\b One year contract

\c Based on GoL rates (Decree 206)

<sup>12</sup> Based on GOL rates (Decree 2000, 23 June 2013), 8 days per month, overnight at village; DSA for 32 staff to be proportionally allocated to 19 Districts per district.







	Breakdown of Totals Incl. Cont. (US\$ '000)																		Expenditures by Financiers (US\$ '000)																																							
	Parameters (in %)																		Other Accounts																																							
	Quantities		Unit Cost		Base Cost (US\$ '000)		Totals Including Contingencies (US\$ '000)						For.	Exch.	Duties & Taxes	Total	Rate	For.	Gross	Summary Divisions	Expenditure Component	Disb. Acct.	Fin. Rule	Proc. Acc.	Proc. Method	Expense SubProj.Obj.	IFAD Loan	Government	Expenditures by Financiers (US\$ '000)	Private sector																												
	Unit	2020	2021	2022	2023	2024	2025	Total	(US\$)	2020	2021	2022	2023	2024	2025	Total		Exch.	Taxes					Proc.	Acc.	Proc.	Method	SubProj.Obj.	Expense	IFAD Loan	Government	Total	2020	2021	2022	2023	2024	2025																				
<b>I. Investment Costs</b>																																																										
<b>A. Agro-Enterprise Investment Facility Grant Fund</b>																																																										
1. Category I: Up to USD 2,500. b	no	5	20	30	30	30	-	115	3,125	16	63	94	94	94	-	359	16	64	99	100	102	-	382	-	382	0.0	0.0	0.0	0.0	OUTPUT_2_2	GRA_EA	GRA_DA	IFAD ( 80% ); PRIV ( 20% )	ABMG_PA OTHER_PM ( 100% )	OUTPUT_2_2_AO PROJ_INV	13	52	79	80	82	-	305	-	-	0	-	-	-	0	3	13	20	20	20	-	76		
2. Category II: USD 2,500 to 15,000. c	no	-	5	20	30	30	25	-	110	11,000	55	220	330	330	275	-	1,210	56	227	347	354	301	-	1,283	-	1,283	0.0	0.0	0.0	0.0	OUTPUT_2_2	GRA_EA	GRA_DA	IFAD ( 50% ); PRIV ( 50% )	ABMG_PA OTHER_PM ( 100% )	OUTPUT_2_2_AO PROJ_INV	28	113	173	177	150	-	642	-	-	-	-	-	-	28	113	173	177	150	-	642		
3. Category III: USD 15,000 to 50,000. d	no	-	5	10	10	5	-	30	35,000	-	120	300	300	300	175	-	1,180	72	167	303	371	191	-	1,115	-	1,115	0.0	0.0	0.0	0.0	OUTPUT_2_2	GRA_EA	GRA_DA	IFAD ( 30% ); PRIV ( 70% )	ABMG_PA OTHER_PM ( 100% )	OUTPUT_2_2_AO PROJ_INV	34	113	137	157	157	-	334	-	-	0	0	0	-	0	0	128	250	267	134	760	-	760
4. Grants for capacity building /e	no	15	50	70	70	19	-	224	800	12	40	56	56	15	-	179	12	41	59	60	17	-	189	-	189	0.0	0.0	0.0	0.0	OUTPUT_2_2	GRA_EA	GRA_DA	IFAD ( 70% ); PRIV ( 30% )	TEC_PA OTHER_PM ( 100% )	OUTPUT_2_2_AO PROJ_INV	8	29	41	42	12	-	132	0	0	0	0	0	0	0	4	12	18	18	5	-	57		
<b>Total</b>																																																										

la The implementation support costs for Output 2.2 are included in Output 2.1.

lb Financing - IFAD 50%; Private sector 50%.

lc Financing - IFAD 50%; Private sector 50%.

ld Financing - IFAD 30%; Private sector 70%.

le Financing - IFAD 70%; Private sector 30%.

Table 7. Output 2.3 - Access improved

### Detailed Co

Breakdown of Totals Incl. Cont. (US\$ '000)																																																	
Detailed Costs		Parameters (in %)																																															
		Quantities			Unit Cost		Base Cost (US\$ '000)					Totals Including Contingencies (US\$ '000)					Summary Divisions			Other Accounts				Expenditures by Financiers (US\$ '000)																									
Unit		2020	2021	2022	2023	2024	2025	Total	2020	2021	2022	2023	2024	2025	Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	Total	Phy. Comp. Rate	For. Exch.	Gross Tax Rate	Component	Expenditure Account	Disb. Accts.	Proc. Acct.	Proc. Method	Expense Acct.	SubProj. Obj.	IFAD Loan	2020	2021	2022	2023	2024	2025	Total	2020	2021	2022	2023	2024	2025	Total	Government				
<strong>I. Investment Costs</strong>																																																	
A. Planning of Access Tracks	Rural road specialist (national TA)	pers-month	12	6	-	-	-	-	18	3,000	36	18	-	-	-	54	36	18	-	0.0	49	5	54	0.0	0.0	10.0	OUTPUT_2_3	NAT_EA	CON_DA	TEC_PA	CON_SRVCS_PM (100%)	OUTPUT_2_3_OA	PROJ_INV	32	16	-	-	-	-	49	4	2	-	-	-	5			
B. Access Track Maintenance	Tractor and labour for maintenance group	village	-	12	7	-	-	-	19	500	-	6	4	-	-	10	-	7	4	-	-	10	1	11	10.0	0.0	10.0	OUTPUT_2_3	TRA_EA	TRA_DA	IFAD (100%)	OUTPUT_2_3_OA	PROJ_INV	-	6	4	-	-	-	10	-	1	0	-	-	1			
C. Village to Village Access Road	Survey and design of access track	km	252	252	-	-	-	-	504	25	25	-	-	-	-	50	25	25	-	-	50	45	5	50	0.0	0.0	10.0	OUTPUT_2_3	NAT_EA	CON_DA	TEC_PA	CON_SRVCS_PM (100%)	OUTPUT_2_3_OA	PROJ_INV	23	23	-	-	-	-	45	3	3	-	-	-	5		
Village to Village access road/a	km	-	252	252	-	-	-	-	504	5,000	-	1,260	1,260	-	-	-	2,520	1,493	1,523	-	-	3,015	302	2,412	302	3,015	15.0	10.0	10.0	OUTPUT_2_3	WOR_EA	WOR_DA	CIV_PA	LCL_SHOPPING_PM (100%)	OUTPUT_2_3_OA	PROJ_INV	-	1,343	1,370	-	-	-	2,714	-	149	152	-	-	302
<strong>Subtotal Village to Village Access Road</strong>																	25	1,285	1,260	-	-	2,570	25	1,518	1,523	-	-	3,066	302	2,458	307	3,066			23	1,366	1,370	-	-	-	2,759	3	152	152	-	-	307		
<strong>Total Investment Costs</strong>																	61	1,309	1,264	-	-	2,634	61	1,543	1,527	-	-	3,131	302	2,516	313	3,131			55	1,388	1,374	-	-	-	2,818	6	154	153	-	-	313		
<strong>II. Recurrent Costs</strong>																																																	
A. Consultations and monitoring	DSA for Village / kumban consultations/b Monitoring by district committee	days district	1 824	1 824	-	-	-	-	3 648	7	13	13	-	-	-	26	14	14	-	-	29	1	24	3	29	10.0	5.0	10.0	OUTPUT_2_3	OPE_EA	REC_DA	IFAD (100%)	OUTPUT_2_3_OA	PROJ_REC	13	13	-	-	-	-	26	1	1	-	-	-	3		
Total Recurrent Costs			-	12	7	-	-	-	19	200	-	2	1	-	-	4	3	2	-	-	4	0	4	0	4	10.0	5.0	10.0	OUTPUT_2_3	OPE_EA	REC_DA	IFAD (100%)	OUTPUT_2_3_OA	PROJ_REC	-	2	1	-	-	-	4	0	0	-	-	0			
<strong>Total</strong>																	13	15	1	-	-	29	14	17	2	-	-	33	2	28	3	33			13	15	1	-	-	30	1	2	0	-	-	3			
<strong>Total</strong>																	74	1,324	1,265	-	-	2,663	75	1,561	1,528	-	-	3,164	303	2,544	316	3,164			68	1,404	1,375	-	-	-	2,847	8	156	153	-	-	316		

**lb** Assuming 2 staffs @ an average of 4 days per month over the 2-year period, for each district.

\b Assuming 2 staffs @ an average of 4 days per month over the 2-year period, for each district.



Lao PDR  
Partnerships for Irrigation and Commercial Smallholder Agriculture  
Table 9. Output 3.2 - Increased dietary intake and improved dietary quality /a  
**Detailed Costs**

\a For nutritionally vulnerable groups.  
\b Assumes 64 staff visiting villages for 8 days.

<sup>b</sup> Assumes 64 staff visiting villages for 8 days per month; to be allocated proportionally to the Districts.



Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agriculture  
**Components Project Cost Summary**

	(LAK Million)			(US\$ '000)			Foreign Exchange	% Base Costs	% Total
	Local	Foreign	Total	Local	Foreign	Total			
<b>A. Intensified Agricultural Development</b>									
Output 1.1 - District staff and village authorities trained	16 654	694	17 348	1 945	81	2 026	4	7	
Output 1.2 - Water User Groups trained	10 183	119	10 303	1 189	14	1 203	1	4	
Output 1.3 - Extension services provided /a	7 076	1 235	8 312	826	144	971	15	3	
Output 1.4 - Farmer Group Investment Facility established /b	105 319	568	105 887	12 298	66	12 364	1	44	
<b>Subtotal Intensified Agricultural Development</b>	<b>139 233</b>	<b>2 617</b>	<b>141 849</b>	<b>16 258</b>	<b>306</b>	<b>16 563</b>	<b>2</b>	<b>60</b>	
<b>B. Value Chains Developed</b>									
Output 2.1 - Multi-Stakeholder Platforms established	9 306	2 861	12 167	1 087	334	1 421	24	5	
Output 2.2 - Agro-Enterprise Investment Facility established	23 967	-	23 967	2 799	-	2 799	-	10	
Output 2.3 - Access improved	20 637	2 171	22 808	2 410	253	2 663	10	10	
<b>Subtotal Value Chains Developed</b>	<b>53 910</b>	<b>5 032</b>	<b>58 942</b>	<b>6 295</b>	<b>588</b>	<b>6 883</b>	<b>9</b>	<b>25</b>	
<b>C. Improved Nutritional Practices</b>									
Output 3.1 - School-based nutrition interventions established	3 361	510	3 871	392	60	452	13	2	
Output 3.2 - Increased dietary intake and improved dietary quality	4 126	2 115	6 241	482	247	729	34	3	
<b>Subtotal Improved Nutritional Practices</b>	<b>7 487</b>	<b>2 626</b>	<b>10 112</b>	<b>874</b>	<b>307</b>	<b>1 181</b>	<b>26</b>	<b>4</b>	
<b>D. Project Management</b>									
<b>Total BASELINE COSTS</b>	<b>222 230</b>	<b>15 846</b>	<b>238 077</b>	<b>25 949</b>	<b>1 850</b>	<b>27 800</b>	<b>7</b>	<b>100</b>	
Physical Contingencies	5 274	887	6 160	616	104	719	14	3	
Price Contingencies	23 464	978	24 442	1 488	59	1 547	4	6	
<b>Total PROJECT COSTS</b>	<b>250 968</b>	<b>17 711</b>	<b>268 680</b>	<b>28 053</b>	<b>2 013</b>	<b>30 066</b>	<b>7</b>	<b>108</b>	

\a Through public, private and farmer-to-farmer channels

\b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

\c For nutritionally vulnerable groups.

Lao PDR

Partnerships for Irrigation and Commercial Smallholder Agriculture

**Expenditure Accounts Project Cost Summary**

	(LAK Million)			(US\$ '000)			% Foreign Exchange	% Total Costs
	Local	Foreign	Total	Local	Foreign	Total		
<b>I. Investment Costs</b>								
A. Works	19 423	2 158	21 581	2 268	252	2 520	10	9
B. Goods, Services & Inputs	1 867	467	2 334	218	55	273	20	1
C. Equipment and Materials	9 445	10 903	20 348	1 103	1 273	2 376	54	9
<b>D. Consultancies</b>								
1. Technical Assistance								
International Technical Assistance	-	1 713	1 713	-	200	200	100	1
National Technical Assistance	12 682	-	12 682	1 481	-	1 481	-	5
Subtotal Technical Assistance	12 682	1 713	14 395	1 481	200	1 681	12	6
E. Training and Workshops	8 584	-	8 584	1 002	-	1 002	-	4
F. Grants and Subsidies	121 143	-	121 143	14 146	-	14 146	-	51
<b>Total Investment Costs</b>	<b>173 144</b>	<b>15 241</b>	<b>188 385</b>	<b>20 218</b>	<b>1 780</b>	<b>21 997</b>	<b>8</b>	<b>79</b>
<b>II. Recurrent Costs</b>								
A. Salaries and allowances	37 582	-	37 582	4 388	-	4 388	-	16
B. Operating costs	11 504	605	12 110	1 343	71	1 414	5	5
<b>Total Recurrent Costs</b>	<b>49 086</b>	<b>605</b>	<b>49 692</b>	<b>5 732</b>	<b>71</b>	<b>5 802</b>	<b>1</b>	<b>21</b>
<b>Total BASELINE COSTS</b>								
Physical Contingencies	222 230	15 846	238 077	25 949	1 850	27 800	7	100
Price Contingencies	5 274	887	6 160	616	104	719	14	3
<b>Total PROJECT COSTS</b>	<b>23 464</b>	<b>978</b>	<b>24 442</b>	<b>1 488</b>	<b>59</b>	<b>1 547</b>	<b>4</b>	<b>6</b>
	<b>250 968</b>	<b>17 711</b>	<b>268 680</b>	<b>28 053</b>	<b>2 013</b>	<b>30 066</b>	<b>7</b>	<b>108</b>

	Improved Nutritional Practices										Output 3.2 - Increased dietary intake and improved dietary quality	Project Management	Total			
	Intensified Agricultural Development					Value Chains Developed										
	Output 1.1 - District staff and village authorities trained	Output 1.2 - Water User Groups trained	Output 1.3 - Extension services provided	Output 1.4 Investment Facility established	Value Chains Developed	Output 2.1 - Multi-Stakeholder Platforms established	Output 2.2 - Agro-Enterprise Investment Facility established	Output 2.3 - Access improved	Output 3.1 - School-based nutrition interventions established							
<b>I. Investment Costs</b>																
A. Works	-	-	-	-	-	-	-	26 785	-	-	-	-	26 785			
B. Goods, Services & Inputs	-	392	1 686	-	-	-	-	-	627	-	-	-	2 705			
C. Equipment and Materials	4 583	-	1 491	869	1 653	-	-	-	739	4 001	8 611	21 946				
<b>D. Consultancies</b>																
1. Technical Assistance																
International Technical Assistance	-	-	-	-	1 864	-	-	-	-	-	-	-	1 864			
National Technical Assistance	822	2 980	3 124	-	-	-	894	2 227	230	2 404	12 682					
Subtotal Technical Assistance	822	2 980	3 124	-	1 864	-	894	2 227	230	2 404	14 546					
E. Training and Workshops	743	7 200	931	-	-	-	96	578	645	170	10 363					
F. Grants and Subsidies	-	-	-	109 328	-	26 648	-	-	-	-	135 976					
<b>Total Investment Costs</b>	6 148	10 573	7 232	110 197	3 516	26 648	27 775	4 170	4 876	11 185	212 319					
<b>II. Recurrent Costs</b>																
A. Salaries and allowances	10 934	-	-	7 957	7 243	-	-	-	2 460	12 994	41 587					
B. Operating costs	1 704	1 353	1 976	901	2 863	-	289	-	-	5 687	14 773					
<b>Total Recurrent Costs</b>	12 638	1 353	1 976	8 858	10 105	-	289	-	2 460	18 681	56 360					
<b>Total PROJECT COSTS</b>	18 786	11 925	9 208	119 055	13 622	26 648	28 064	4 170	7 336	29 866	268 680					
Taxes	2 470	1 193	1 070	359	872	-	2 806	491	888	3 760	13 909					
Foreign Exchange	786	146	1 405	604	3 065	-	2 693	605	2 601	5 806	17 711					

	Improved Nutritional Practices										Output 3.2 - Increased dietary intake and improved dietary quality	
	Intensified Agricultural Development					Value Chains Developed						
	Output 1.1 - District staff and village authorities trained	Output 1.2 - Water User Groups trained	Output 1.3 - Extension services provided	Output 1.4 - Farmer Group Investment Facility established	Value Chains Developed	Output 2.1 - Multi-Stakeholder Platforms established	Output 2.2 - Agro-Enterprise Investment Facility established	Output 2.3 - Access improved	Output 3.1 - School-based nutrition interventions established	Project Management		
<b>I. Investment Costs</b>												
A. Works	-	-	-	-	-	-	-	3 015	-	-	3 015	
B. Goods, Services & Inputs	-	43	189	-	-	-	-	70	-	-	302	
C. Equipment and Materials	529	-	172	100	191	-	-	83	445	993	2 512	
<b>D. Consultancies</b>												
1. Technical Assistance	-	-	-	-	209	-	-	-	-	-	209	
International Technical Assistance	-	-	-	-	-	-	-	-	-	-	-	
National Technical Assistance	96	348	365	-	-	-	104	260	27	281	1 481	
Subtotal Technical Assistance	96	348	365	-	209	-	104	260	27	281	1 690	
E. Training and Workshops	85	803	105	-	-	-	11	65	73	19	1 161	
F. Grants and Subsidies	-	-	-	12 127	-	2 968	-	-	-	-	15 095	
<b>Total Investment Costs</b>	710	1 194	830	12 227	400	2 968	3 131	478	545	1 293	23 776	
<b>II. Recurrent Costs</b>												
A. Salaries and allowances	1 229	-	-	886	807	-	-	-	274	1 446	4 642	
B. Operating costs	191	151	220	100	319	-	33	-	-	634	1 648	
<b>Total Recurrent Costs</b>	1 420	151	220	987	1 126	-	33	-	274	2 080	6 290	
<b>Total PROJECT COSTS</b>	2 130	1 345	1 050	13 214	1 526	2 968	3 164	478	819	3 373	30 066	
Taxes	284	134	122	41	99	-	316	56	99	432	1 585	
Foreign Exchange	90	16	161	69	347	-	303	68	289	668	2 013	

	Totals Including Contingencies						
	2020	2021	2022	2023	2024	2025	Total
<b>A. Intensified Agricultural Development</b>							
Output 1.1 - District staff and village authorities trained	899	423	376	384	24	25	2 130
Output 1.2 - Water User Groups trained	277	278	198	181	195	216	1 345
Output 1.3 - Extension services provided /a	320	317	207	118	55	35	1 050
Output 1.4 - Farmer Group Investment Facility established /b	680	2 282	2 658	2 711	2 765	2 119	13 214
<b>Subtotal Intensified Agricultural Development</b>	<b>2 176</b>	<b>3 299</b>	<b>3 438</b>	<b>3 393</b>	<b>3 039</b>	<b>2 394</b>	<b>17 739</b>
<b>B. Value Chains Developed</b>							
Output 2.1 - Multi-Stakeholder Platforms established	427	224	228	211	216	220	1 526
Output 2.2 - Agro-Enterprise Investment Facility established	83	513	872	889	611	-	2 968
Output 2.3 - Access improved	75	1 560	1 528	-	-	-	3 164
<b>Subtotal Value Chains Developed</b>	<b>585</b>	<b>2 296</b>	<b>2 628</b>	<b>1 101</b>	<b>827</b>	<b>220</b>	<b>7 658</b>
<b>C. Improved Nutritional Practices</b>							
Output 3.1 - School-based nutrition interventions established	136	193	79	65	3	3	478
Output 3.2 - Increased dietary intake and improved dietary quality /c	131	143	155	143	122	124	819
<b>Subtotal Improved Nutritional Practices</b>	<b>267</b>	<b>336</b>	<b>234</b>	<b>208</b>	<b>125</b>	<b>127</b>	<b>1 297</b>
<b>D. Project Management</b>	<b>1 321</b>	<b>402</b>	<b>414</b>	<b>453</b>	<b>419</b>	<b>365</b>	<b>3 373</b>
<b>Total PROJECT COSTS</b>	<b>4 348</b>	<b>6 334</b>	<b>6 714</b>	<b>5 155</b>	<b>4 409</b>	<b>3 107</b>	<b>30 066</b>

\a Through public, private and farmer-to-farmer channels

\b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

\c For nutritionally vulnerable groups.

	Totals Including Contingencies						
	2020	2021	2022	2023	2024	2025	Total
<b>A. Intensified Agricultural Development</b>							
<b>Output 1.1 - District staff and village authorities trained</b>							
Investment Costs	677	32	-	-	-	-	710
Recurrent Costs	221	391	376	384	24	25	1 420
<b>Subtotal Output 1.1 - District staff and village authorities trained</b>	<b>899</b>	<b>423</b>	<b>376</b>	<b>384</b>	<b>24</b>	<b>25</b>	<b>2 130</b>
<b>Output 1.2 - Water User Groups trained</b>							
Investment Costs	253	254	173	155	170	190	1 194
Recurrent Costs	24	24	25	25	26	26	151
<b>Subtotal Output 1.2 - Water User Groups trained</b>	<b>277</b>	<b>278</b>	<b>198</b>	<b>181</b>	<b>195</b>	<b>216</b>	<b>1 345</b>
<b>Output 1.3 - Extension services provided /a</b>							
Investment Costs	284	281	169	80	16	-	830
Recurrent Costs	36	36	37	38	39	35	220
<b>Subtotal Output 1.3 - Extension services provided</b>	<b>320</b>	<b>317</b>	<b>207</b>	<b>118</b>	<b>55</b>	<b>35</b>	<b>1 050</b>
<b>Output 1.4 - Farmer Group Investment Facility established /b</b>							
Investment Costs	524	2 122	2 495	2 545	2 596	1 946	12 227
Recurrent Costs	156	160	163	166	169	173	987
<b>Subtotal Output 1.4 - Farmer Group Investment Facility established</b>	<b>680</b>	<b>2 282</b>	<b>2 658</b>	<b>2 711</b>	<b>2 765</b>	<b>2 119</b>	<b>13 214</b>
<b>Subtotal Intensified Agricultural Development</b>	<b>2 176</b>	<b>3 299</b>	<b>3 438</b>	<b>3 393</b>	<b>3 039</b>	<b>2 394</b>	<b>17 739</b>
<b>B. Value Chains Developed</b>							
<b>Output 2.1 - Multi-Stakeholder Platforms established</b>							
Investment Costs	251	41	42	21	22	22	400
Recurrent Costs	175	183	186	190	194	198	1 126
<b>Subtotal Output 2.1 - Multi-Stakeholder Platforms established</b>	<b>427</b>	<b>224</b>	<b>228</b>	<b>211</b>	<b>216</b>	<b>220</b>	<b>1 526</b>
<b>Output 2.2 - Agro-Enterprise Investment Facility established</b>							
Investment Costs	83	513	872	889	611	-	2 968
<b>Output 2.3 - Access improved</b>							
Investment Costs	61	1 543	1 527	-	-	-	3 131
Recurrent Costs	14	17	2	-	-	-	33
<b>Subtotal Output 2.3 - Access improved</b>	<b>75</b>	<b>1 560</b>	<b>1 528</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3 164</b>
<b>Subtotal Value Chains Developed</b>	<b>585</b>	<b>2 296</b>	<b>2 628</b>	<b>1 101</b>	<b>827</b>	<b>220</b>	<b>7 658</b>
<b>C. Improved Nutritional Practices</b>							
<b>Output 3.1 - School-based nutrition interventions established</b>							
Investment Costs	136	193	79	65	3	3	478
<b>Output 3.2 - Increased dietary intake and improved dietary quality /c</b>							
Investment Costs	88	99	110	97	75	76	545
Recurrent Costs	43	44	45	46	47	48	274
<b>Subtotal Output 3.2 - Increased dietary intake and improved dietary quality</b>	<b>131</b>	<b>143</b>	<b>155</b>	<b>143</b>	<b>122</b>	<b>124</b>	<b>819</b>
<b>Subtotal Improved Nutritional Practices</b>	<b>267</b>	<b>336</b>	<b>234</b>	<b>208</b>	<b>125</b>	<b>127</b>	<b>1 297</b>
<b>D. Project Management</b>							
Investment Costs	1 077	32	37	68	27	52	1 293
Recurrent Costs	243	370	377	385	392	313	2 080
<b>Subtotal Project Management</b>	<b>1 321</b>	<b>402</b>	<b>414</b>	<b>453</b>	<b>419</b>	<b>365</b>	<b>3 373</b>
<b>Total PROJECT COSTS</b>	<b>4 348</b>	<b>6 334</b>	<b>6 714</b>	<b>5 155</b>	<b>4 409</b>	<b>3 107</b>	<b>30 066</b>
Total Investment Costs	3 435	5 109	5 503	3 921	3 518	2 290	23 776
Total Recurrent Costs	913	1 225	1 211	1 234	891	817	6 290

\a Through public, private and farmer-to-farmer channels

\b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

\c For nutritionally vulnerable groups.

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agric.  
**Expenditure Accounts by Years -- Totals Including Contingencies**  
 (US\$ '000)

	Totals Including Contingencies						
	2020	2021	2022	2023	2024	2025	Total
<b>I. Investment Costs</b>							
A. Works	-	1 493	1 523	-	-	-	3 015
B. Goods, Services & Inputs	7	82	90	91	17	15	302
C. Equipment and Materials	2 037	92	117	120	72	74	2 512
<b>D. Consultancies</b>							
<b>1. Technical Assistance</b>							
International Technical Assistance	61	41	42	21	22	22	209
National Technical Assistance	575	499	182	88	46	92	1 481
<b>Subtotal Technical Assistance</b>	635	540	224	109	68	114	1 690
E. Training and Workshops	249	267	182	167	154	141	1 161
F. Grants and Subsidies	507	2 635	3 367	3 434	3 207	1 946	15 095
<b>Total Investment Costs</b>	3 435	5 109	5 503	3 921	3 518	2 290	23 776
<b>II. Recurrent Costs</b>							
A. Salaries and allowances	636	924	943	962	614	563	4 642
B. Operating costs	277	300	268	272	277	253	1 648
<b>Total Recurrent Costs</b>	913	1 225	1 211	1 234	891	817	6 290
<b>Total PROJECT COSTS</b>	4 348	6 334	6 714	5 155	4 409	3 107	30 066

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agric.  
**Expenditure Accounts Breakdown**  
 (US\$ '000)

	Base Cost												Physical Contingencies				Price Contingencies				Base Costs + Price Cont. on Base Costs	Physical Cont. Plus Price Cont. on Physical Cont.
	Local			Physical Contingencies			Local			Price Contingencies			Local			Total Incl. Cont.						
	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total	For. Exch.	(Excl. Taxes)	Duties & Taxes	Total		
<b>I. Investment Costs</b>																						
A. Works	252	2 016	252	2 520	38	302	38	378	12	94	12	117	302	2 412	302	3 015	2 622	393				
B. Goods, Services & Inputs	55	191	27	273	3	10	1	14	3	11	2	16	60	211	30	302	288	14				
C. Equipment and Materials	1 273	309	794	2 376	56	13	17	86	30	7	13	50	1 359	329	824	2 512	2 423	89				
<b>D. Consultancies</b>																						
<b>1. Technical Assistance</b>																						
International Technical Assistance	200	-	-	200	-	-	-	-	9	-	-	9	209	-	-	209	209	-				
National Technical Assistance	-	1 333	148	1 481	-	-	-	-	-	-	-	-	-	1 333	148	1 481	1 481	-				
<b>Subtotal Technical Assistance</b>	200	1 333	148	1 681	-	-	-	-	9	-	-	9	209	1 333	148	1 690	1 690	-				
E. Training and Workshops	-	902	100	1 002	-	90	10	100	-	52	6	58	-	1 045	116	1 161	1 055	106				
F. Grants and Subsidies	-	14 146	-	14 146	-	-	-	-	-	950	-	950	-	15 095	-	15 095	15 095	-				
<b>Total Investment Costs</b>	1 780	18 896	1 321	21 997	96	415	66	578	54	1 114	32	1 201	1 930	20 425	1 420	23 776	23 173	602				
<b>II. Recurrent Costs</b>																						
A. Salaries and allowances	-	4 388	-	4 388	-	-	-	-	-	254	-	254	-	4 642	-	4 642	4 642	-				
B. Operating costs	71	1 202	141	1 414	7	120	14	141	5	79	9	93	82	1 401	165	1 648	1 498	150				
<b>Total Recurrent Costs</b>	71	5 590	141	5 802	7	120	14	141	5	333	9	346	82	6 043	165	6 290	6 140	150				
<b>Total</b>	1 850	24 487	1 463	27 800	104	535	81	719	59	1 447	42	1 547	2 013	26 469	1 585	30 066	29 314	752				

Lao PDR  
 Partnerships for Irrigation and Commercialisation  
**Disbursement Accounts by Financiers**  
 (US\$ '000)

	IFAD Loan	Government		Beneficiaries		Private sector		Total		For. Exch.	(Excl. Taxes)	Local Duties & Taxes	
		Amount	%	Amount	%	Amount	%	Amount	%				
1. Works	2 714	90.0	302	10.0	-	-	-	3 015	10.0	302	2 412	302	
2. Grants & Subsidies	8 030	53.2	0	-	5 510	36.5	1 555	10.3	15 095	50.2	-	15 095	-
3. Goods, Services & Inputs	232	76.9	30	10.0	40	13.1	-	302	1.0	60	211	30	
4. Equipment and Materials	1 688	67.2	824	32.8	-	-	-	2 512	8.4	1 359	329	824	
5. Consultancies	1 542	91.2	148	8.8	-	-	-	1 690	5.6	209	1 333	148	
6. Training and Workshops	1 045	90.0	116	10.0	-	-	-	1 161	3.9	-	1 045	116	
7. Recurrent Costs	5 745	91.3	546	8.7	-	-	-	6 290	20.9	82	6 043	165	
<b>Total PROJECT COSTS</b>	<b>20 996</b>	<b>69.8</b>	<b>1 966</b>	<b>6.5</b>	<b>5 550</b>	<b>18.5</b>	<b>1 555</b>	<b>5.2</b>	<b>30 066</b>	<b>100.0</b>	<b>2 013</b>	<b>26 469</b>	<b>1 585</b>

	IFAD Loan		Government		Beneficiaries		Private sector		Total		Local		
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	For. Exch.	(Excl. Taxes)	Duties & Taxes
<b>A. Intensified Agricultural Development</b>													
Output 1.1 - District staff and village authorities trained	1 846	86.6	284	13.4	-	-	-	-	2 130	7.1	90	1 755	284
Output 1.2 - Water User Groups trained	1 210	90.0	134	10.0	-	-	-	-	1 345	4.5	16	1 194	134
Output 1.3 - Extension services provided /a	928	88.4	122	11.6	-	-	-	-	1 050	3.5	161	768	122
Output 1.4 - Farmer Group Investment Facility established /b	7 663	58.0	41	0.3	5 510	41.7	-	-	13 214	43.9	69	13 103	41
<b>Subtotal Intensified Agricultural Development</b>	<b>11 647</b>	<b>65.7</b>	<b>582</b>	<b>3.3</b>	<b>5 510</b>	<b>31.1</b>	<b>-</b>	<b>-</b>	<b>17 739</b>	<b>59.0</b>	<b>337</b>	<b>16 820</b>	<b>582</b>
<b>B. Value Chains Developed</b>													
Output 2.1 - Multi-Stakeholder Platforms established	1 426	93.5	99	6.5	-	-	-	-	1 526	5.1	347	1 079	99
Output 2.2 - Agro-Enterprise Investment Facility established	1 414	47.6	0	-	-	-	1 555	52.4	2 968	9.9	-	2 968	-
Output 2.3 - Access improved	2 847	90.0	316	10.0	-	-	-	-	3 164	10.5	303	2 544	316
<b>Subtotal Value Chains Developed</b>	<b>5 687</b>	<b>74.3</b>	<b>416</b>	<b>5.4</b>	<b>-</b>	<b>-</b>	<b>1 555</b>	<b>20.3</b>	<b>7 658</b>	<b>25.5</b>	<b>651</b>	<b>6 591</b>	<b>416</b>
<b>C. Improved Nutritional Practices</b>													
Output 3.1 - School-based nutrition interventions established	382	80.0	56	11.7	40	8.3	-	-	478	1.6	68	354	56
Output 3.2 - Increased dietary intake and improved dietary quality /c	720	87.9	99	12.1	-	-	-	-	819	2.7	289	431	99
<b>Subtotal Improved Nutritional Practices</b>	<b>1 102</b>	<b>85.0</b>	<b>155</b>	<b>12.0</b>	<b>40</b>	<b>3.1</b>	<b>-</b>	<b>-</b>	<b>1 297</b>	<b>4.3</b>	<b>357</b>	<b>784</b>	<b>155</b>
<b>D. Project Management</b>	<b>2 560</b>	<b>75.9</b>	<b>813</b>	<b>24.1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3 373</b>	<b>11.2</b>	<b>668</b>	<b>2 273</b>	<b>432</b>
<b>Total PROJECT COSTS</b>	<b>20 996</b>	<b>69.8</b>	<b>1 966</b>	<b>6.5</b>	<b>5 550</b>	<b>18.5</b>	<b>1 555</b>	<b>5.2</b>	<b>30 066</b>	<b>100.0</b>	<b>2 013</b>	<b>26 469</b>	<b>1 585</b>

\a Through public, private and farmer-to-farmer channels

\b Enables farmer groups & WUGs to invest in minor infrastructure and in input packages for agricultural intensification.

\c For nutritionally vulnerable groups.

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholder Agric.  
**Expenditure Accounts by Financiers**  
 (US\$ '000)

	IFAD Loan		Government		Beneficiaries		Private sector		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
<b>I. Investment Costs</b>													
A. Works	2 714	90.0	302	10.0	-	-	-	-	3 015	10.0	302	2 412	302
B. Goods, Services & Inputs	232	76.9	30	10.0	40	13.1	-	-	302	1.0	60	211	30
C. Equipment and Materials	1 688	67.2	824	32.8	-	-	-	-	2 512	8.4	1 359	329	824
D. Consultancies													
1. Technical Assistance													
International Technical Assistance	209	100.0	-	-	-	-	-	-	209	0.7	209	-	-
National Technical Assistance	1 333	90.0	148	10.0	-	-	-	-	1 481	4.9	-	1 333	148
Subtotal Technical Assistance	1 542	91.2	148	8.8	-	-	-	-	1 690	5.6	209	1 333	148
E. Training and Workshops	1 045	90.0	116	10.0	-	-	-	-	1 161	3.9	-	1 045	116
F. Grants and Subsidies	8 030	53.2	0	-	5 510	36.5	1 555	10.3	15 095	50.2	-	15 095	-
Total Investment Costs	15 251	64.1	1 420	6.0	5 550	23.3	1 555	6.5	23 776	79.1	1 930	20 425	1 420
<b>II. Recurrent Costs</b>													
A. Salaries and allowances	4 534	97.7	108	2.3	-	-	-	-	4 642	15.4	-	4 642	-
B. Operating costs	1 211	73.5	437	26.5	-	-	-	-	1 648	5.5	82	1 401	165
Total Recurrent Costs	5 745	91.3	546	8.7	-	-	-	-	6 290	20.9	82	6 043	165
Total PROJECT COSTS	20 996	69.8	1 966	6.5	5 550	18.5	1 555	5.2	30 066	100.0	2 013	26 469	1 585

Lao PDR  
 Partnerships for Irrigation and Commerce  
**Local/Foreign/Taxes by Financiers**  
 (US\$ '000)

	IFAD Loan		Government		Beneficiaries		Private sector		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
I. Foreign	1 989	98.8	15	0.8	9	0.4	-	-	2 013	6.7
II. Local (Excl. Taxes)	19 007	71.8	366	1.4	5 541	20.9	1 555	5.9	26 469	88.0
III. Taxes	-	-	1 585	100.0	-	-	-	-	1 585	5.3
<b>Total Project</b>	<b>20 996</b>	<b>69.8</b>	<b>1 966</b>	<b>6.5</b>	<b>5 550</b>	<b>18.5</b>	<b>1 555</b>	<b>5.2</b>	<b>30 066</b>	<b>100.0</b>

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholders  
**Procurement Accounts by Financiers**  
 (US\$ '000)

	IFAD Loan		Government		Beneficiaries		Private sector		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
<b>A. Grants and Subsidies</b>													
1. Farmer Group Matching Grants	6 617	54.6	0	-	5 510	45.4	-	-	12 127	40.3	-	12 127	-
2. Agro_Enterprise Matching Grants	1 281	46.1	0	-	-	-	1 498	53.9	2 779	9.2	-	2 779	-
<b>Subtotal Grants and Subsidies</b>	<b>7 898</b>	<b>53.0</b>	<b>0</b>	<b>-</b>	<b>5 510</b>	<b>37.0</b>	<b>1 498</b>	<b>10.1</b>	<b>14 906</b>	<b>49.6</b>	<b>-</b>	<b>14 906</b>	<b>-</b>
B. Civil Works	2 714	90.0	302	10.0	-	-	-	-	3 015	10.0	302	2 412	302
C. Equipment and Goods	1 035	69.9	446	30.1	-	-	-	-	1 481	4.9	687	348	446
D. Vehicles	677	64.0	381	36.0	-	-	-	-	1 058	3.5	677	-	381
E. Technical Assistance	4 549	95.6	152	3.2	-	-	57	1.2	4 758	15.8	218	4 388	152
F. Training	1 214	90.0	135	10.0	-	-	-	-	1 349	4.5	38	1 177	135
G. Salaries and Allowances	2 061	93.3	149	6.7	-	-	-	-	2 209	7.3	20	2 149	40
H. Other Operating Costs	848	65.8	401	31.1	40	3.1	-	-	1 289	4.3	71	1 089	129
<b>Total PROJECT COSTS</b>	<b>20 996</b>	<b>69.8</b>	<b>1 966</b>	<b>6.5</b>	<b>5 550</b>	<b>18.5</b>	<b>1 555</b>	<b>5.2</b>	<b>30 066</b>	<b>100.0</b>	<b>2 013</b>	<b>26 469</b>	<b>1 585</b>

Lao PDR  
 Partnerships for Irrigation and Commercial S

**Allocation of Loan Proceeds**

IFAD Loan  
 (US\$ '000)

	Estimated Allocation of Loan Proceeds																
	Loan Disbursement		Total Project Cost			Average Disbursement %			Loan Amounts			Unallocated			Allocated		
	Amount	%	Total	Local	Foreign	Total	Local	Foreign	Total	Total	Local	Foreign	Total	Local	Foreign		
1. Works	2 442	90	3 015	2 714	302	90	89	100	2 714	271	241	30	2 442	2 171	271		
2. Equipment and Materials	1 519	67	2 512	1 153	1 359	67	29	100	1 688	169	33	136	1 519	296	1 223		
3. Consultancies	1 388	91	1 690	1 481	209	91	90	100	1 542	154	133	21	1 388	1 199	188		
4. Grants and Subsidies	7 227	53	15 095	15 095	-	53	53	-	8 030	803	803	-	7 227	7 227	-		
5. Recurrent Costs	5 170	91	6 290	6 208	82	91	91	82	5 745	574	568	7	5 170	5 110	61		
6. Training and Workshops	940	90	1 161	1 161	-	90	90	-	1 045	104	104	-	940	940	-		
7. Goods, Services and Inputs	209	77	302	242	60	77	75	85	232	23	18	5	209	163	46		
Unallocated	2 100	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Total</b>	<b>20 996</b>	<b>70</b>	<b>30 066</b>	<b>28 053</b>	<b>2 013</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>20 996</b>	<b>2 100</b>	<b>1 901</b>	<b>199</b>	<b>18 897</b>	<b>17 106</b>	<b>1 790</b>		

Loan amounts financed by IFAD Loan

Lao PDR

Partnerships for Irrigation and Commercial Smallholders

**Procurement Arrangements**

Economic Costs

**A. Grants and Subsidies**

	Procurement Method (LAK Million)						Procurement Method (US\$ '000)									
	National Competitive Bidding	Consulting Services	Local Shopping	Community Participation in Procurement	Other	N.B.F.	Total	National Competitive Bidding	Consulting Services	Local Shopping	Community Participation in Procurement	Other	N.B.F.	Total		
1. Farmer Group Matching Grants	-	-	-	97 176	-	-	97 176	-	-	-	11 347	-	-	11 347		
2. Agro_Enterprise Matching Grants	-	-	-	(53 030)	-	-	(53 030)	-	-	-	(6 192)	-	-	(6 192)		
B. Civil Works	-	-	22 386	(22 386)	-	-	22 386	-	-	2 614	-	-	2 614			
C. Equipment and Goods	4 375	-	268	4 067	-	-	8 709	511	-	31	475	-	-	1 017		
D. Vehicles	(4 375)	-	(268)	(4 067)	-	-	(8 709)	(511)	-	(31)	(475)	-	-	(1 017)		
E. Technical Assistance	-	34 782	-	-	3 076	-	37 859	-	4 061	-	-	359	-	4 421		
F. Training	-	(34 782)	-	-	(2 616)	-	(37 398)	(4 061)	-	-	-	(305)	-	(4 367)		
G. Salaries and Allowances	-	10 071	-	-	-	6 734	874	17 678	-	1 176	-	-	786	102	2 064	
H. Other Operating Costs	-	-	-	325	-	5 241	4 103	9 669	-	-	38	-	612	479	1 129	
<b>Total</b>	<b>10 229</b>	<b>44 854</b>	<b>268</b>	<b>26 778</b>	<b>97 176</b>	<b>47 371</b>	<b>4 977</b>	<b>231 652</b>	<b>1 194</b>	<b>5 237</b>	<b>31</b>	<b>3 127</b>	<b>11 347</b>	<b>5 531</b>	<b>581</b>	<b>27 050</b>
	<b>(10 229)</b>	<b>(44 854)</b>	<b>(268)</b>	<b>(26 453)</b>	<b>(53 030)</b>	<b>(34 711)</b>	<b>(1 713)</b>	<b>(171 257)</b>	<b>(1 194)</b>	<b>(5 237)</b>	<b>(31)</b>	<b>(3 089)</b>	<b>(6 192)</b>	<b>(4 053)</b>	<b>(200)</b>	<b>(19 997)</b>

Note: Figures in parenthesis are the respective amounts financed by IFAD Loan

Lao PDR

Partnerships for Irrigation and Commercial Smallholder

Procurement Arrangements - Non ICB/LCB Aggregat

Economic Costs

	Procurement Method (LAK Million)				Procurement Method (US\$ '000)					
	National		International		National		International			
	Competitive Bidding	Consulting Services	Other	N.B.F.	Total	Competitive Bidding	Consulting Services	Other	N.B.F.	Total
<b>A. Grants and Subsidies</b>										
1. Farmer Group Matching Grants	-	-	97 176	-	97 176	-	-	11 347	-	11 347
			(53 030)		(53 030)			(6 192)		(6 192)
2. Agro Enterprise Matching Grants	-	-	22 432	-	22 432	-	-	2 619	-	2 619
			(10 341)		(10 341)			(1 208)		(1 208)
B. Civil Works	-	-	22 386	-	22 386	-	-	2 614	-	2 614
			(22 386)		(22 386)			(2 614)		(2 614)
C. Equipment and Goods	4 375	-	4 335	-	8 709	511	-	506	-	1 017
	(4 375)		(4 335)		(8 709)	(511)		(506)		(1 017)
D. Vehicles	5 854	-	-	-	5 854	684	-	-	-	684
	(5 854)				(5 854)	(684)				(684)
E. Technical Assistance	-	34 782	3 076	-	37 859	-	4 061	359	-	4 421
		(34 782)	(2 616)		(37 398)		(4 061)	(305)		(4 367)
F. Training	-	-	9 888	-	9 888	-	-	1 155	-	1 155
			(9 888)		(9 888)			(1 155)		(1 155)
G. Salaries and Allowances	-	10 071	6 734	874	17 678	-	1 176	786	102	2 064
		(10 071)	(6 734)		(16 805)		(1 176)	(786)		(1 962)
H. Other Operating Costs	-	-	5 566	4 103	9 669	-	-	650	479	1 129
			(5 132)	(1 713)	(6 844)			(599)	(200)	(799)
<b>Total</b>	10 229	44 854	171 593	4 977	231 652	1 194	5 237	20 037	581	27 050
	(10 229)	(44 854)	(114 461)	(1 713)	(171 257)	(1 194)	(5 237)	(13 365)	(200)	(19 997)

Note: Figures in parenthesis are the respective amounts financed by IFAD Loan

Lao PDR  
 Partnerships for Irrigation and Commercial Smallholders  
**Procurement Accounts by Years**

Economic Costs

	Economic Costs (LAK Million)						Economic Costs (US\$ Million)							
	2020	2021	2022	2023	2024	2025	Total	2020	2021	2022	2023	2024	2025	Total
<b>A. Grants and Subsidies</b>														
1. Farmer Group Matching Grants	3 590	17 640	20 333	20 333	20 333	14 948	97 176	419	2 060	2 374	2 374	2 374	1 745	11 347
2. Agro Enterprise Matching Grants	605	3 918	6 626	6 626	4 657	-	22 432	71	458	774	774	544	-	2 619
<b>Subtotal Grants and Subsidies</b>	<b>4 195</b>	<b>21 558</b>	<b>26 959</b>	<b>26 959</b>	<b>24 989</b>	<b>14 948</b>	<b>119 608</b>	<b>490</b>	<b>2 517</b>	<b>3 148</b>	<b>3 148</b>	<b>2 918</b>	<b>1 745</b>	<b>13 966</b>
B. Civil Works	-	11 193	11 193	-	-	-	22 386	-	1 307	1 307	-	-	-	2 614
C. Equipment and Goods	5 433	683	837	837	460	460	8 709	634	80	98	98	54	54	1 017
D. Vehicles	5 854	-	-	-	-	-	5 854	684	-	-	-	-	-	684
E. Technical Assistance	8 319	8 537	6 271	5 367	4 778	4 587	37 859	971	997	732	627	558	536	4 421
F. Training	1 901	2 458	1 800	1 664	1 089	976	9 888	222	287	210	194	127	114	1 155
G. Salaries and Allowances	2 860	4 355	4 085	4 085	1 207	1 087	17 678	334	509	477	477	141	127	2 064
H. Other Operating Costs	1 471	1 727	1 718	1 706	1 609	1 438	9 669	172	202	201	199	188	168	1 129
<b>Total</b>	<b>30 033</b>	<b>50 511</b>	<b>52 862</b>	<b>40 618</b>	<b>34 132</b>	<b>23 496</b>	<b>231 652</b>	<b>3 507</b>	<b>5 898</b>	<b>6 173</b>	<b>4 743</b>	<b>3 985</b>	<b>2 744</b>	<b>27 050</b>



Investing in rural people

## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 8: Project Implementation Manual (PIM)**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department





Enabling poor rural people  
to overcome poverty

## Lao People's Democratic Republic

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Implementation Manual (Draft)**

Main report and appendices

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## **Currency equivalents**

Fiscal year: 1 January to 31 December

Currency Unit	=	Lao Kip (LKP)
US\$1.0 (March 2019)	=	LAK 8,564

## **Weights and measures**

1 kilogram	=	1000 g
1 000 kg	=	2.204 lb.
1 kilometre (km)	=	0.62 mile
1 metre	=	1.09 yards
1 square metre	=	10.76 square feet
1 acre	=	0.405 hectare
1 hectare	=	2.47 acres
1 decimal	=	0.01 acre

## **Abbreviations and acronyms**

ADB	Asian Development Bank
AFN	Agriculture for Nutrition Project
AIF	Agri-business Investment Facility
AWPB	Annual Work Plan and Budget
BMZ	German Ministry for Economic Cooperation and Development
CCA	Climate Change Adaptation
COSOP	Country Strategic Opportunities Programme
Costab	Budgeting software
DA	Designated Account
DAFO	District Agriculture and Forestry Office
Dol	Department of Irrigation
DONRE	District Office of Natural Resources and Environment
DPI	Department of Planning and Investment (MAF)
DSA	Daily Subsistence Allowance
DSEDC	District Socio-Economic Development Committee
EU	European Union
ERP	Lao PDR Emission Reductions Programme through Improved Governance and Sustainable Forest Landscape Management (ERP, BMZ/GCF-funded, to be implemented by GIZ).
Farmod	Farm modelling economic and financial software
FGIF	Farmer Group Investment Facility
FNML	Southern Laos Food and Nutrition Security and Market Linkages Programme
GAP	Good Agricultural Practice
GCF	Green Climate Fund
GoL	Government of Lao Peoples Democratic Republic

HH	households
IFAD	International Fund for Agricultural Development
KM	Knowledge Management
Kumban	Cluster of villages / administrative unit
LAK	Lao Kip (national currency)
LWU	Lao Women Union
LtB	Letter to the Borrower
MAF	Ministry of Agriculture and Forestry
MoES	Ministry of Education and Sports
MoH	Ministry of Health
MoF	Ministry of Finance
MONRE	Ministry of Natural Resources and Environment
M&E	Monitoring and Evaluation
PAFO	Province Agriculture and Forestry Office
PDR	People's Democratic Republic
PIM	Programme Implementation Manual
PLUP	Participatory Land Use Plan
ppp	Purchasing power parity
SACCC	Smallholder Adaptation to Climate Change Component - FNML
SLM	Sustainable Land Management
SNRMPEP	Sustainable Natural Resource Management & Productivity Enhancement Project
SRIWMSP	Sustainable Rural Infrastructure and Watershed Management Sector Project
SSSJ	Community-based Food Security and Economic Opportunities Programme 'Soum Son Seun Jai'
ToR	Terms of Reference
USD	United States Dollar
UXO	Unexploded Ordnance
VAT	Value Added Tax
VC	Value Chain
WA	Withdrawal Application
WOCAT	World Overview of Conservation Approaches and Technologies
WoP	Without-project
WP	With-project

## Map of the project area



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

IFAD Map compiled by IFAD | 27-03-2019

## I. This Document

### A. Function and status

1. This **draft** Project Implementation Manual (PIM) provides guidelines for implementing the *Partnerships for Irrigation and Commercialisation of Smallholder Agriculture* (PICSA) Project. The PIM describes how PICSA will invest in intensified agriculture, value chains and improved nutrition; and how the project will be managed. This is supported by standard formats, terms of references (ToRs), agreements and examples; as well as by an Annual Work Plan and Budget and a Procurement Plan for the first stage of the Project. This PIM is accompanied by a stand-alone Financial Management Manual (FMM) and Project Procurement Guidelines (PPG). Basic instructions for financial management and procurement are included in the Letter to the Borrower (LtB) dated **xx Month 2019**.

2. The PIM is to be read in conjunction with the main Project Design Report. The present PIM is a draft and will need to be carefully reviewed by the implementing agency and by all major stakeholders in the Project; with changes to be made where appropriate. Any changes proposed as a result of such a review will, however, require the concurrence of IFAD before such a change is included as an approved project implementation procedure or approach. Finalisation of the project implementation procedures, coordinated by the Department of Irrigation (DOI) of the Ministry of Agriculture and Forestry (MAF), is a condition for effectiveness of the financing of the Project. The finalisation of the PIM is therefore a matter of priority.

3. Once IFAD financing for PICSA has become effective, the Project Implementation Manual, together with the provisions for financial management and procurement, will form the basis for the Project's systematic implementation. Experiences in implementing the Project may necessitate amendment of the PIM. If so, the Project Steering Committee (PSC) duly informed by the Programme Governance Team (PGT) and the concerned project partners, proposes appropriate changes, which will become effective upon IFAD concurrence.

### B. Contents

4. The second chapter provides a background description of PICSA, which provides the reader background to understand the procedures described in the following chapters. At the same time, the project description in chapter II forms a basis for sections describing the Project that are to be included in the Project's progress reports, technical publications and brochures.

5. Chapter III will describe the set-up and functioning of project management, including arrangements for planning, monitoring and evaluation. Separate manuals provide guidance for financial management and procurement.

6. Implementation procedures for project components are described in chapter IV, V and VI:

- (a) Component 1: Intensified agricultural development
- (b) Component 2: Value chains developed
- (c) Component 3: Improved nutritional practices

## II. Project description

### A. For use in reports

7. The Government of Lao PDR (GoL) and IFAD agree to allocate IFAD's 11th country allocation to a Project that pursues intensified agricultural production and commercialisation of smallholder agriculture. This Project is named *Partnerships for Irrigation and Commercialisation of Smallholder Agriculture* (PICSA). PICSA is designed as part of a regional programme, financed by ADB/EU and BMZ/GCFA. PICSA provides added value to investments in irrigation infrastructure and catchment management by building market linkages, enhancing commercialisation and intensification of (irrigated) agriculture and supporting improved nutritional practices.

8. PICSA provides irrigation management and market linkage support to irrigation systems rehabilitated under the *Sustainable Rural Infrastructure and Watershed Management Sector Project* (SRIWMSP, ADB/EU-funded); as well as to other irrigated areas and their environs. Both SRIWMSP and PICSA benefit from conservation measures in the upper catchments supported through the *Lao PDR Emission Reductions Programme through Improved Governance and Sustainable Forest Landscape Management Project* (ERP; BMZ/GCF-funded, implemented by GIZ). The combined programme aims to increase farm incomes from high value crops, market produce supply and variety, watershed conservation and nutrition in the four northern provinces of Houaphan, Xieng Khouang, Luang Prabang and Xayaboury.

9. **Rationale.** PICSA's immediate rationale is that higher profits from irrigation systems enable water user groups to finance operation, maintenance and minor system modifications – and thereby to sustain their system. The wider rationale is that intensified commercial smallholder agriculture in the farming system centred on irrigated wetlands constitutes a strong driver for local socio-economic development, improved nutritional intake and sustainable use of natural resources.

10. **Project objectives.** The Goal to which PICSA will contribute is enhanced livelihood resilience and sustainability within the Project intervention area. The Development Objective – to be attained by the beneficiary households using the outputs provided by the Project – is sustainable and inclusive local economic development. The Development Objective is supported by tangible Project outcomes in the areas of intensified smallholder agriculture, market linkages, and nutrition; and is underpinned by a strong drive for inclusiveness.

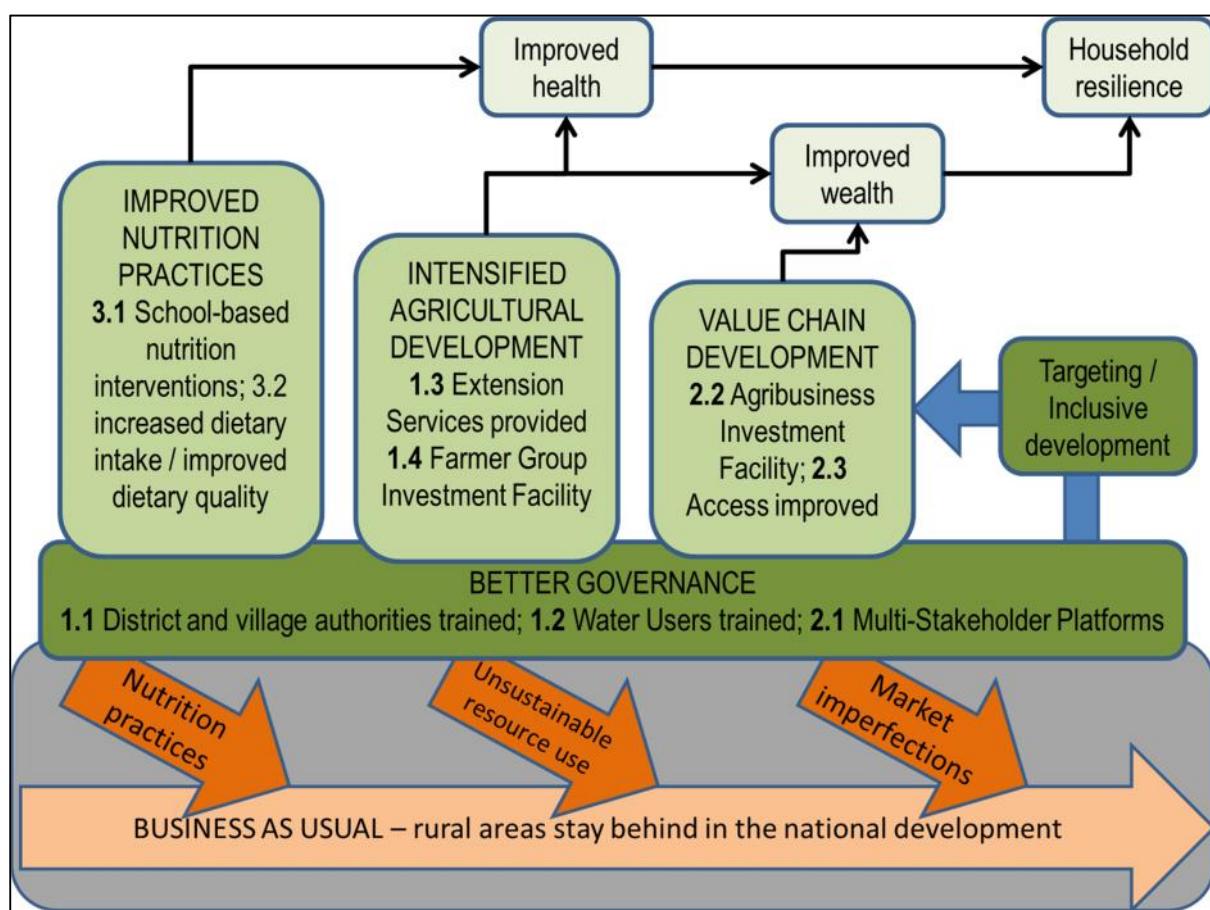
11. **Geographic area.** PICSA shares with SRISWMSP an initial focus on 15 irrigation schemes in 12 districts in 4 provinces, where it builds conditions for better system maintenance by enhancing the use of irrigation for the production of high value crops. While malnutrition and poverty are less rampant in these fifteen schemes than in remoter areas, the areas serve as a springboard for linking services and markets to adjacent areas. PICSA addresses clusters of lowland paddy areas ('irrigated wetlands') around and including these 15 schemes, as well as adjacent hill slopes, which have a potential for intensified rainfed crop and livestock production and which are farmed by the same households cultivating lowland paddy, as well as by other, often poorer households in the same communities. PICSA will coordinate with communities through existing Village structures, and will support local economic development by enhanced production of high value crops.

12. **Beneficiaries and target group.** The estimated population of the 'PICSA villages' stands at approximately 215,000 (41,000 households at an approximate household size of 5.2). Country statistics suggest that approximately 15% are female-headed households. Only 25% of the population is young (age bracket 15 – 35 years), showing the effects of out-migration, whereas 40% belongs to ethnic groups. While actual percentages per village will show a wide variability reflecting factors such as the population's ethnicity, the establishment date of the village; and its relative remoteness, it is estimated that 5% of the population is extremely poor and practically landless and another 25% are poor (i.e. below the international poverty line). A large group (50%) of the population is near poor and lives below the lower-middle income line, while remaining highly vulnerable to shocks, which can push them below the poverty line. These three groups constitute the Project's target group. In addition to

the above target group definition (extreme poor, poor and near poor), the Project defines women, youth, ethnic groups and undernourished people as special target categories.

13. Against a scenario of stagnation in rural areas – caused by poor market integration, unsustainable resource usage and adverse nutritional practices – the Project supports better governance to boost market linkages, enhance the irrigated production potential, pursue sustainable natural resources management and improve nutrition practices (see Figure 1). Investments in intensified agricultural production, improved value chains and better nutritional practices combined with continued governance over targeting of opportunities will support emergence of market-led smallholder agricultural production of (irrigated) high value crops in a manner that is both inclusive and nutrition-sensitive. Results from these investments will lead to better incomes and a better health status, which form cornerstones for resilient and sustainable livelihoods in the Project area.

14. Better governance is key to this approach. Agricultural is the main driver of development; while social inclusion of poor, women, youth and ethnic groups together with improved nutritional practices are key determinants of the quality of development. Governance at local level, provided by concerted efforts of the District administration, Village Authorities, farmer groups (including WUGs) and value chain partners, ensures the quality of development. PICSA support to better governance of resource use, market conditions and targeting helps build an enabling environment for improving market linkages, intensified production and nutrition practices.



**Figure 1: PICSA's intervention logic and outputs (numbered)**

## B. Summary description for brochures

15. The Government of Lao PDR (Gol) and IFAD invest in a Project that pursues intensified agricultural production and commercialisation of smallholder agriculture. This *Project is named Partnerships for Irrigation and Commercialisation of Smallholder Agriculture* (PICSA). PICSA provides irrigation management and market linkage support to irrigation systems rehabilitated under the *Sustainable Rural Infrastructure and Watershed Management Sector Project* (SRIWMS, ADB/EU-

funded); as well as to other irrigated areas and their environs. Both SRIWMS and PICSA benefit from conservation measures in the upper catchments supported through the *Lao PDR Emission Reductions Programme through Improved Governance and Sustainable Forest Landscape Management Project* (ERP; BMZ/GCF-funded, implemented by GIZ). The combined programme aims to increase farm incomes from high value crops, market produce supply and variety, watershed conservation and nutrition in the four northern provinces of Houaphan, Xieng Khouang, Luang Prabang and Xayaboury.

16. **Rationale.** PICSA's immediate rationale is that higher profits from irrigation systems enable water user groups to finance operation, maintenance and minor system modifications – and thereby to sustain their system. The wider rationale is that intensified commercial smallholder agriculture in the farming system centred on irrigated wetlands constitutes a strong driver for local socio-economic development, improved nutritional intake and sustainable use of natural resources.

## **III. Project Management**

### **A. Management principles**

17. PICSA applies and builds on national principles for decentralisation and integration:
- (a) Sam Sang – Laos' approach to decentralisation aims to make Villages centres of development by vesting implementation in the Districts, with the Provincial level playing a coordinating role. PICSA is implemented along these lines, with Districts playing a pivotal role in providing Project services to target villages; and concerned Village Authorities providing leadership in targeting and ensuring good usage of these services;
  - (b) Convergence Approach – Formulated to guide the integration of different perspectives in the country's action plan for nutrition; the principle of convergence of the actions of specialised organisations towards a shared higher objective is also significant for other fields of development. PICSA starts from the premise that partnership across entities, disciplines and hierarchies is essential for successful project implementation.
18. The above translates into two simple guidelines: (i) Activities will be implemented at the lowest appropriate level, unless it is impossible to facilitate this; and (ii) Implementation of all project activities requires the involvement of at least two entities. The latter will often include a combination of a District Department and Village Authorities; but in many cases (esp. implementation of financing facilities and nutrition improvement) several departments may be involved.
19. The consequence of these two guidelines is that – to support decentral implementation – the national Programme Governance Team (PGT) and the Provincial Project Implementation Team (PPIT) are primarily responsible for initiating and enabling the implementation of Project activities by the Districts. It also means that – to support joint implementation – Governors and Vice Governors – especially at District level – have an important role to play in safeguarding cooperation across departments.
20. PICSA and SRIWMSP are congruent projects and their coherence and synergy is safeguarded by both projects sharing the same structures for steering and implementation.

### **B. Project preparation and start-up**

21. The initial stages of a new Project are crucial, as during this period the project management routines are established.
22. **Manuals and Plans.** The Project Implementation Manual includes procedural guidance on the preparation and implementation of activities; which includes:
- (a) **M&E Plan** – This document specifies which indicators will be monitored by whom and with which frequency; as well as describing how monitoring information can be used to support management decisions. The M&E Plan, its preparation and implementation, and the need for updating will be reviewed by IFAD supervision missions (see III.I);
  - (b) **Exit and Scaling strategies** – The PDR includes a first draft of a combined exit and scaling strategy. This draft is to be refined and adjusted as project implementation progresses. The combined exit and scaling strategies are subjects for review by supervision missions.
  - (c) **Implementation procedures for all project components.** Adequacy of these approaches, and the need for better documentation of the same, is reviewed by the Supervision Missions;
  - (d) **Financial Management Manual (FMM) and Project Procurement Guidelines (PPG).** Based on the general principles defined in the Financing Agreement and the Letter to the Borrower, these define day-to-day procedures. These are published as stand-alone manuals;
  - (e) Any other manual as required for smooth project implementation or for documentation of approaches for knowledge management and transfer.

23. **Establishment and mobilisation.** The implementing agency (DOI) will facilitate the start-up of the Project by drafting and pursuing the decrees that are necessary for establishing the National, Provincial and District Project Steering Committees; and for forming the Programme Governance Team, the Provincial Project Implementation Team and the District Project Implementation Teams. This includes assignment of government staff to these units, as well as the recruitment of project staff.

24. **Start-up Workshop.** Once PGT key staff is assigned, a start-up workshop with PGT staff and representatives of the implementing partners is held. The PMU shall consult IFAD prior to the Start-up Workshop on its objectives, expected outcomes and programme. The Start-up Workshop aims to build awareness on the Project among its implementing partners and introduces and reviews the above manuals and plans. IFAD may field an Implementation Support Mission to coincide with the Start-up workshop to help in the preparations and discussions.

25. **Orientation meetings for all PGT/PPIT/DPIT staff.** All staff (i.e. assigned government staff and hired project staff) will take part in orientation meetings at the start of the project. The objective of the training will be to develop a clear understanding of project objectives, project components, implementation methodologies of each component/activity, financial arrangements, monitoring and evaluation requirements. The staff orientation for PGT staff is ideally combined with the Start-up Workshop, but will be held as a standalone event, if not otherwise possible. The PGT will organise orientation meetings at Provincial level, with participation of the concerned DPITs.

26. **Start-up Costs.** If GoL request and IFAD approves a Project pre-Financing Facility (PFF), up to USD 500,000 'advance loan' can be drawn for start-up costs before the general conditions for first withdrawal are fulfilled. This amount is to be used primarily for expenditures for establishment of the PGT, for preparatory work on the PIM, for recruitment, for preparatory activities in the concerned Districts and villages; and for priority procurements.

27. **Conditions for first withdrawal.** IFAD will transfer resources to the project accounts, once all conditions for first withdrawal are fulfilled. These conditions will be stipulated in the Financing Agreement, but are likely to include:

- (a) The Designated Accounts and Project Accounts shall have been established;
- (b) The Programme Governance Team (PGT) shall have been established and the Project Director and key personnel shall have been assigned;
- (c) IFAD no objection to the Project Implementation Manual (PIM), Financial Management Manual (FMM) and Project Procurement Guidelines (PPG) shall have been obtained.

28. **Staff capacity building.** For capacity building of project staff internal training courses will be organised, based on the need and available resources. Training courses include (but are not limited to) financial management procedures, including the use of the PGT's accounting software.

## C. Project actors and entities – Project governance

29. Project steering will be provided at all three levels of the project; i.e. national, provincial and district. Structures for steering are shared with SRIWMSP.

30. The National Project Steering Committee (NPSC) comprises representatives of MAF, Ministry of Planning and Investment (MOPF), Ministry of Finance (MOF), Ministry of Industry and Commerce (MOIC), Ministry of Natural Resources and Environment (MONRE), Lao National Chamber of Commerce and Industry (LNCCI) as well as the Vice Governors of the concerned four Provinces; and is chaired by the Vice Minister of MAF. In view of the nutrition emphasis in both PICSA and SRIWMSP, membership of the Ministries of Health (MoH) and Education & Sports (MoES), as well as the Lao Women Union (LWU) is required. The NPSC will meet annually with additional meetings (and membership) as needed. The mandate of the NPSC is to prepare major decisions, which in all cases also require IFAD's no objection:

- (a) Approve the Annual Work Plan and Budget (AWPB) of the Project;
- (b) Review and approve changes in the Project target area;
- (c) Review and approve changes in the PIM, FMM and PPG;

- (d) Support policy dialogue on lessons emerging from the implementation of PICSA and SRIWMSP.

31. The steering committee structure and mandate are replicated at Province (PPSC) and District (DPSC) level, under chairmanship of the respective Provincial or District Vice-Governors. The respective Director of PAFO or DAFO is the vice chair and concerned technical departments are represented. Concerned District Vice-Governors are member of the PPSC, while Village Heads are member of the DPSC. The Project Coordinators at Provincial and District level are member-secretary to their respective meetings. PPSCs meet half-yearly, DPSCs meet quarterly.

32. The PPSC's and DPSC's mandate is:

- (a) Prepare recommendations to the NPSC with respect to AWPB, implementation procedures and policy dialogue;
- (b) Take necessary action to ensure partnerships in decentralised implementation of PICSA.

## D. Project actors and entities – Project implementation

33. PICSA's components and the outputs thereunder are delivered through decentral departments of the following organisations:

- (a) **Intensified agricultural development:** Ministry of Agriculture and Forestry and especially its Departments of Irrigation, Planning and Finance and Agricultural Extension and Agro-Processing; as well as the Ministry of Natural Resources and Environment;
- (b) **Value chains developed:** Ministry of Industry and Commerce, Chamber of Industry and Commerce, especially its SME Support Centre;
- (c) **Improved nutritional practices:** The Convergence agencies - Ministry of Agriculture and Forestry; Ministry of Health (MoH) and Ministry of Education and Sports (MoES), Lao Women Union (LWU) and Youth Union.

34. Day-to-day implementation will be led by a Programme Governance Team at national level, a Provincial Project Implementation Team (PPIT) and a District Project Implementation Team (DPIT). The PGT and PPIT facilitate the project implementation at District level. To further enshrine decentralised implementation, output-related funds is disbursed either to the district-level (outputs 1.1, 1.2, 1.3, 2.1, 2.3, 31 and 3.2), or directly to the farmer groups and enterprises supported by the Project's investment facilities (outputs 1.4 and 2.2).

35. The PGT is located in DOI and oversees both SRIWMSP and PICSA. Under the overall guidance of the Chief Technical Advisor (GoL staff), PICSA will support the recruitment of project staff specifically for PICSA: a PICSA Coordinator; a Finance Manager, a Procurement Officer and an M&E Officer. The latter position is funded partially, on the understanding that SRIWMSP will share this position for the benefit of drawing lessons out of the combined implementation of both projects.

36. The PGT is responsible for the sound and swift implementation of the Project through decentral implementation and integrated work processes (see section III.A). In addition to the responsibilities defined in the SRIWMSP Project Administrative Manual, the PGT will undertake the following tasks in connection with PICSA:

- (a) Overall project management and coordination;
- (b) Initiate establishment of structures and procedures for project implementation and facilitate their performance / application;
- (c) Arrange for start-up workshop and orientation meetings to kick-start implementation;
- (d) Adhere by, implement and propose necessary revisions to the project implementation manuals listed in section III.B;
- (e) Consolidate and assure quality of all work plans and budgets, financial management records, withdrawal applications information and records into a single project record;
- (f) Undertake or facilitate all procurement processes related to the Project;
- (g) Ensure a balanced application of Project resources across the four Provinces supported by PICSA;

- (h) Provide technical support to facilitate project coordination and implementation by PPIT and DPIT;
- (i) Ensure and keep record of adherence to IFAD's Social, Environmental and Climate Assessment Procedures;
- (j) Prepare annual progress reports, which include a management reflection on emerging issues and proposed remedial action;
- (k) Ensure coherence of PICSA with other relevant projects and programmes;
- (l) Prepare for and facilitate (combined) project supervision missions and implementation support missions.

37. The PPIT is responsible for sound and swift implementation of the Project through decentral implementation and integrated work processes (see section III.A). In addition to the responsibilities defined in the SRIWMSP Project Administrative Manual, the PPIT will undertake the following tasks in connection with PICSA:

- (a) Identify implementation focal points in the Department of Industry and Commerce to be seconded into the PPIT to support activities related to the development of value chains in general and the Agro-Enterprise Financing Facility specifically;
- (b) Ensure a balanced application of Project resources across the Districts supported by PICSA
- (c) Coordinate PICSA activities and integrate these with activities of other related donor-financed programmes;
- (d) Prepare progress statements and reports in line with PGT requirements and formats.

38. The DPIT is responsible for sound and swift implementation of the Project through integrated work processes (see section III.A). The DPIT will undertake the following tasks in addition to duties emerging from the SRIWMSP implementation:

- (a) Identify implementation focal points in the District Agriculture and Forestry Office, and the Departments of Industry & Commerce, Health and Education & Sports, as well as in the Women's Union and the Youth Union to be seconded into the DPIT to support activities related to agricultural intensification, value chain development and improvement of nutritional practices;
- (b) Ensure a balanced application of Project resources across the Villages supported by PICSA
- (c) Coordinate PICSA activities and integrate these with activities of other related donor-financed programmes;
- (d) Prepare progress statements and reports in line with PGT and PPIT requirements and formats.

## **E. Agreements for project implementation**

39. PICSA is expected to engage with partners to achieve project ambitions. This is specifically the case for:

- (a) The SME Support Centre (SSC) established by the Lao National Chamber of Commerce and Industry (LNCCI) is partner in training prequalified enterprises in development of business cases for consideration of the Agro-Enterprise Financing Facility.
- (b) Save the Children International (STCI) is partner for extending support to schools for establishment and/or development of school gardens and the related nutrition education activities.

40. Partnerships are formalised through Memoranda of understanding, which define the mutual obligations of PICSA and the respective partner. Draft MoU's for the above partners are included in appendix 5.

## F. Social, Environmental and Climate Assessment Procedures

41. Based on IFAD's Social, Environmental and Climate Assessment Procedures (SECAP), PICSA has social and environmental risk profile B; along with a moderate climate change risk profile. The project design addresses identified risks.

42. **Environmental and social impacts.** The project adopts the "cause no harm" safeguard principle to address social and environmental risks. This *inter alia* means:

- (a) Involve user groups and village authorities to ensure long-term management and maintenance of rural infrastructure from the initial stage of infrastructure development;
- (b) Do not obstruct natural water passage and provide an adequate number of culverts in rural roads for drainage;
- (c) Use bio-engineering to support slope stability of rural roads;
- (d) Promote green and clean agriculture;
- (e) Promote sustainable land and water management practices;
- (f) Involve local authorities to enforce safe and proper usage of roads.

43. **Climate risks.** The project will adopt a combination of avoidance, adaptation and mitigation measures to reduce the possible negative impacts of climate change related natural events on project outcomes. These are tailored to upland and lowland areas and include both technical and institutional capacity building measures.

44. The building of institutional capacity to counter climate risks includes: (i) strengthening village development committees and establishing or strengthening water user and producer groups; (ii) supporting community participatory planning processes, including assessments of impacts and the formulation of operations and maintenance (O&M) plans; (iii) providing training to promote sustainable land and water management practices and technologies that will enhance climate change resilience.

45. The Project Design Report includes a matrix of measures to counter the specific climate risks affecting the Project area.

## G. Targeting and Gender

46. 'Leave no one behind'. This ambition cuts across the 2030 Agenda and is reflected in IFAD's targeting strategy. PICSA, addresses the vulnerabilities of its target categories in a specific way:

- (a) **Extreme poor** – Given the prevalence of malnutrition, this group is targeted especially by component 3 activities (integrated homestead food production, nutrition education), and by employment creation through intensified agricultural production and value chain activities. Village authorities will be tasked to stimulate the extreme poor's participation in such opportunities; with the Project monitoring the effectiveness thereof;
- (b) **Poor and near poor** – The main investment modality for developing profitable smallholder agriculture is formed by a financing facility for agricultural intensification. This facility is aimed at groups. Local authorities (Village and District) are asked to help identify and / or form groups of an inclusive nature. The beneficiary share of an investment will favour of participation of poorer households. An active role of local authorities in the development of market linkages increases the transparency of agreements and thereby reduces the risk for poor and near poor households;
- (c) **Women** – While women and men have a seemingly equal workload in agriculture, women have additional household chores to manage. Women's role in agriculture is significant, but often undervalued. The shift from subsistence to market-oriented agriculture can be particularly difficult for women in ethnic groups whose cultural roles, limited Lao language and technical skills, often leave them unprepared to engage with the market. The inclusion of women, including those from ethnic groups, in a proportional way in the farmer groups is an important criterion by which PICSA assesses whether local authorities are effective in ensuring inclusive development. Early use will be made of monitoring data to prevent a targeting bias. Successful targeting practices will be recognised and shared; and will be supported further by subsequent AWPB allocations;

- (d) **Youth** – A sizeable portion of youth in the age bracket 15 – 35 migrate out of the project area. Creation of competitive employment opportunities in the project area would reduce migration. The Project is designed to provide a return from labour above the prevailing market rate. The Agro-Enterprise Financing Facility provides the opportunity to target female and male youth with business start-up assistance in niche production (e.g. organic farming), trade and post-harvest processing;
- (e) **Ethnic groups** – Often whole villages are predominantly inhabitant by a specific ethnic group. PICSA will ensure through the AWPB exercise that resources are spread in a balanced way over the project villages. Monitoring will ensure that none of the selected villages are neglected. Access to irrigated lowland may for some 'ethnic' village be limited, which means that in these villages more emphasis be given to other forms of agricultural intensification. This could include small livestock, rainfed crops and investment in irrigation on sloping land;
- (f) **Under-nourished** – PICSA targets nutritional vulnerable people with a focus on women, children and adolescent girls by supporting nutrition teams at District and village-level. They will be involved in school-based interventions that focus on (irrigated) school gardens and ponds for cultivating nutrient-rich food for school meals; and that provide nutrition education to pupils, parents and teachers. PICSA will also invest in Integrated Homestead Food Production – especially targeted at extreme poor households – to help produce a balanced diet, with surplus sold locally. In promoting high value crops, PICSA will give preference to products that have a nutritional and a market value.

47. The above targeting strategy forms the basis for the Project's targeting strategy and Gender Action Plan, which will be periodically updated based on the experience gained.

## **H. Annual Work Plan and Budget (AWPB) and Procurement Plan (PP)**

48. Procedures for financial management and procurement are elaborated in stand-alone manuals. This section describes the interface between activity planning, financial management and procurement.

49. **Instruments of management control.** Management control over the performance of the Project is exerted through a combination of planning (this section), monitoring & evaluation (section I) and knowledge management (section J). The Project's M&E Officer has a key role in ensuring the proper use of available instruments; in ensuring coherence between the instruments and – most crucially – in engaging staff of the Project and its implementing partners in their application.

50. **Logical Framework.** Point of departure for preparing the AWPB and the PP; and also for the M&E function, is the Project's Logical Framework. The Logical Framework is regularly updated to reflect implementation experience as well as sometimes IFAD's evolving reporting requirements (see Appendix 1 for the Logical Framework included in the PDR). Targets for outputs and outcomes can be updated (but not fundamentally changed) as and when needed and will be reviewed and confirmed during annual Supervision Missions. Higher order targets can be updated during the Mid-Term Review Missions (see section III.O).

51. **Annual Work Plan and Budget and Procurement Plan.** The Annual Work Plan and Budget (AWPB) and the Procurement Plan (PP) are key documents for day-to-day project management, as they link technical management, financial management and procurement processes. The PMU compiles the Annual Work Plan and Budget in accordance to IFAD guidelines and formats. Drafts for the 2020 AWPB and the 18-month Procurement Plan are included in Appendix 2 (tables only – a narrative is to be added when submitting for IFAD no objection).

52. The AWPB is prepared in accordance to the financial year of the Government of Laos, and shall include IFAD financing as well as Government, beneficiary and private sector contributions. The AWPB will be submitted for IFAD prior review at least 60 days ahead of the financial year, but an exception shall be made for the first full financial year in the project's duration (i.e. 2020). Each AWPB shall be accompanied by a short write-up that provides strategic background to the AWPB. This includes reflection on lessons learned during implementation, appreciation of achievements so far,

explanation of new priorities and / or changed emphases in project implementation and a listing of key events for the year to come.

53. Each AWPB is supported by a Procurement Plan which lists the individual procurements for works, goods and services together with the proposed method of procurement and a credible time line. The first AWPB is accompanied by a Procurement Plan with an 18-month time horizon.

54. The steps in preparation of the AWPB and PP are:

- (a) **District-wise planning framework.** In order to facilitate decentral planning, the PGT will prepare a tentative resource allocation per District (for the targeted villages), including an overview of generic eligible activities. This allows the District a starting point for defining their plan for the coming year. The PGT shall also provide formats for recording the proposed Annual Work Plan and Budget. The PGT has a lead role in balancing resources between Districts. This also includes that in subsequent years, the PGT revises the allocation to a District in view of its achievements, its capacity as well as the involvement of other financiers with that District. The preparation of a tentative resource allocation per District is thus used every year for initiating the annual bottom-up planning;
- (b) **Preparation of the AWBP:** Using the format provided by IFAD, the PGT will prepare an AWPB. It will be submitted to IFAD no later than 60 days before the beginning of the relevant Financial Year. To this end, the following planning process will be adhered to (See c);
- (c) **Annual planning workshops** – Annual planning workshops for PICSA – and preferably for other projects as well – will be held immediately after the annual Socio-Economic Development Planning Meetings that take place at District and Province levels as part of the general annual planning cycle. Doing so provides the opportunity to enhance coherence between the activities, especially for those undertaken at District level. It also provides an opportunity for enhancing the synergy between projects working in the same area. The District annual project planning workshop will thus be in August / September, whereas the Province will have its subsequent meeting in September / October. Compilation at national level, by the NPSC, takes place within October, followed immediately by submission to IFAD for prior review and to the NPSC for concurrence. The workshops will be bottom-up and inclusive, involving representations from concerned villages, from DPIT / PPIT staff and from partner agencies. The workshops will take note of successes, analyse pitfalls (if any), and discuss ways forward. Annual goals will be set reflecting the targets in the LogFrame.
- (d) **Procurement Plan.** Based on the works, goods and services that are planned for in the AWPB, a Procurement Plan is developed and submitted along with the AWPB for IFAD scrutiny;
- (e) **Annual Development Plan.** The ‘no-objected’ AWPB will be used to develop the GoL Annual Plan, which secures the allocation of Government funds to the Project for the concerned Financial Year.

55. The AWPB and PP can be revised as and when needed, but in view of the process to obtain a no-objection from IFAD, it is advisable to reduce the number of annual revisions. IFAD cannot provide no-objections for procurements or expenditures if an item is not included in a no-objected AWPB and PP.

## I. Monitoring and Evaluation (M&E)

56. **M&E Plan.** Monitoring and evaluation (M&E) is used (i) to track achievements against the Project's Logical Framework, the Project's baseline, and the Project's Economic and Financial Analysis; and (ii) to assess the quality of the Project's performance. Both the assessment of implementation performance and the tracking of progress are used by the project management to identify requisite remedial actions. The M&E function for PICSA will be described in an M&E plan. Preparation of this plan, oversight over its implementation and drawing conclusions for management action are the responsibility of the M&E Officer. The M&E Officer position is shared with SRIWMSP.

The efficacy of the M&E function (i.e. collecting data, processing this to management information and subsequent management action) will be reviewed during IFAD supervision missions.

57. The M&E Plan is to be developed within the first three months of the Project period, and the start-up funds should be used to provide a head start. The plan will be regularly updated. The following points will be include in the plan:

- (a) M&E plan objective (i.e. to enable Project Management to take informed decisions for ensuring the Project's success);
- (b) Overview of indicators, data sources and frequency and method of reporting. Monitoring indicators will be disaggregated according to gender, socio-economic status and age to the extent possible so as to enable a proper assessment of whether the project is indeed reaching its intended target beneficiaries, most poor, especially women, youth and vulnerable groups. The monitoring indicators will include:
  - (i) Indicators included in the LogFrame (Appendix 1) – these cover impacts, effects, outcomes and outputs of the Project;
  - (ii) Indicators with respect to key project risks; based on the assumptions in the LogFrame and risks signalled in the PDR, annex 9). These indicators are to be formulated relying generally on external information sources, expert judgement and non-quantified information;
  - (iii) Input indicators, which gauge the implementation progress of the Project. For each activity to be assessed, it is advisable to develop both an indicator of progress, as well as an indicator recording the related cost. This will help assess the 'value for money' of investments made by PICSA;
- (c) A description of methods of collecting data and information, including the responsibilities. This generally includes:
  - (i) Regular recording of activity data in progress reports from the decentral implementation units, compiled on at least a quarterly basis;
  - (ii) Regular recording of expenditures against activities – again on a quarterly basis. Doing so helps ensure consistency in unit prices across Districts and Provinces;
  - (iii) Periodic recording of achievements in terms of outputs. This can be combined with the quarterly implementation information described above. It is important that a distinction is made between outputs delivered and outputs still in existence at the moment of reporting. Thus, a record can be made of the number and length of roads constructed; as well as of the number of roads being functional at the time of reporting;
  - (iv) Recurrent studies to assess project outcomes and impacts. These are the baseline, mid-term and end line surveys. These should assess achievements against indicators for outcomes and impacts as listed in the LogFrame, but also provide a better understanding of the Project area in terms of its demography, socio-economic situation, agricultural and non-agricultural occupancy and the land use. The surveys should provide a second source of information on key elements in the Village Profile (see IV.B);
  - (v) Occasional studies (e.g. the KAP survey on nutrition) that assess either the existing conditions or the quality of achievements in a specific field of work. The M&E officer relies on the various technical experts to define and guide such studies; but should make sure that outcomes are available to the Project as a whole and are integrated in the analysis of the Project's implementation. Project management will firmly ensure that the different disciplines under the Project do not engage in data collection and studies in isolation from the M&E function. In addition, efforts shall be made to preclude repeated and overlapping data

collection exercises, which will consume much time from DPIT staff and village authorities;

- (d) A description of the reports to be produced (see III.L) and the responsibilities therefore.

58. **Analytical work.** The collection of monitoring and evaluation information is of little use, if not accompanied by explicit efforts to derive patterns and conclusions from the material. This analytical work is the prime responsibility of the M&E Officer, but he/she shall involve all staff – and especially the technical experts – in doing so.

59. **Capacity.** As indicated above, collection and analyses of project data is undertaken by several hands:

- (a) The PGT M&E Officer will be responsible to direct and oversee collection of regular activity, process, outcome and impact monitoring data; to establish a structure for reporting, management information and knowledge management; and to ensure analysis of the information and data obtained;
- (b) The DPITs and PPITs will provide regular reports on progress and expenditures. The data are collected and compiled by the staff and/or teams responsible for specific activities
- (c) The senior experts that are hired at national level will produce mission reports and specified technical reports and thereby contribute to identifying strategic priorities in project management. For their work, they shall have access to all relevant information produced by the Project;
- (d) The PMU will engage a competent firm experienced in in-depth household survey for designing, organising and conducting baseline, midline and end line survey, including the provision of trained enumerators;
- (e) The PMU will engage others as needed, based on the advice of the M&E Officer;

60. **Economic and Financial Analysis (EFA).** The financing of the Project is justified by the expectation that it generates benefits for a specified target group through creation of incremental farm income from participation in the FGIF. The M&E exercise must include data collection to verify whether the assumptions made in the EFA with respect to investment, outreach and impact are correct. Information from Financial Management is used to monitor unit costs, and the Project can undertake (or commission) fact-finding surveys to assess the benefit flows, outreach and mechanisms. An early focus on data collection and analyses with respect to the EFA enables to assess whether the investments indeed are worthwhile (value for money); as well as to enable a re-run of the EFA during the midterm review (MTR) mission (in case major redesign takes place) and during the Completion Mission.

61. **Household resilience.** PICSA aims for *enhanced livelihood resilience and sustainability*. Gauging the degree of household resilience is, however, not as straightforward as assessing, for example, their income position. To ensure a systematic assessment of household resilience, an index has been developed which assesses whether the resilience of households responds positively to the activities supported by PICSA. This index has to be included in baseline, midterm and end line surveys. Appendix 9.

## J. Knowledge Management

62. Knowledge management is a structured process by which information on progress and impact is used to support fact-based decision-making. The first part of the process consists of formulating lessons learned on the basis of Project M&E information and context information. The second part is the use of lessons learned by Project Management or others to take management decisions with respect to a future course. Knowledge management is efficient, if it informs – or influences – decision-making.

63. While M&E helps signal issues (something doesn't work as planned), the formulation of lessons learned (what works and what does not work) helps management take decisions on the future course. This means that knowledge management connects data to proposed management decisions via lessons learned.

64. The process from data collection to proposed management decisions should be both inclusive and interactive:

- (a) Inclusive; in the sense that all persons who can contribute to the analysis of data or the formulation of management recommendations are involved in a proactive manner. The M&E officer's role is to reach out to relevant staff in order to obtain their views and contributions;
- (b) Interactive; in the sense that deriving lessons or framing recommendations benefits from discussion in which views and perspectives are used to refine the lessons learned or to hone the management recommendation. The M&E officer organises formal and informal exchanges to improve the outcomes of knowledge management.

65. **Internally-oriented knowledge management.** The Project's knowledge management function is largely directed at informing decision-making by the Project management. This function enables the project managers to make adjustments to the course of the Project; or to propose adjustments, should approval from higher authority be required. Knowledge management informs the 'management reflection' that is included in the Progress Report.

## K. Policy Development (PIM)

66. The externally-oriented knowledge management of PICSA is a strongly focussed function, whereby the Project seeks to influence or contribute to overall policy. The PICSA design proposes that externally-oriented knowledge management focusses on GoL's irrigation policies, especially as they relate to participatory management. Thus, lessons are derived from SRIWMSP and PICSA experience in working in irrigation development and the lessons are processed into recommendations towards national policy, regulations and procedures. This is done by inclusion of relevant stakeholders and actors outside and inside the Project in this knowledge management process; and by ensuring interaction about the lessons from both projects within the context of the national approach to irrigation development. PICSA includes the resources for specific studies into participatory irrigation management and for national events to debate the repercussions of findings from the field for national policies and programmes. PICSA's specific terms of reference for linking knowledge management to policy development on participatory water management are given below. The international irrigation management advisor plays a key role in supporting this:

- (a) Maintain a systematic sub-set of indicators on the implementation and effectiveness of PICSA's work in supporting water management groups (output 1.3);
- (b) Collect tacit information on the PICSA support to WMGs (i.e. views from beneficiaries and staff on the quality of the approach);
- (c) Develop a typology of irrigation systems to help explain the variability in their management performance. Permanent headworks may prove to be one such variable (as was also the case in Nepal and Bhutan); while use of modern irrigation techniques and production shifts to high value crops may prove to be other factors;
- (d) Commission in-depth studies to assess factors contributing to effective management in more detail;
- (e) Adjust field approaches to optimise the Project's impact on irrigation management;
- (f) Prepare lessons learnt documents for wider distribution;
- (g) Develop an overview of the key actors on policy development, including beneficiaries, private sector agencies involved in irrigation development (e.g. suppliers of drip systems); protagonists of irrigation development in other parts of the country and policy departments;
- (h) Assist MAF to prepare and host a national event on PIM, which aims to provide building blocks for policy revision.

67. Deliverables of the policy development efforts are ten learning documents reflecting key outcomes of the in-depths studies and of the review of PICSA's and SRIWMSP's approach to irrigation development and participatory irrigation management. A final deliverable is a sourcebook on PIM, which supports strategic conclusions derived at the National Conference with evidence and case material.

68. Budget is included in the overall Project budget for an International Irrigation and O&M Specialist (12 person month), Field studies (5) and a National Conference (1). As well as requisite resources for travel, staff workshops, documentation and publication.

## L. Reporting

69. The PGT will produce recurrent and occasional reports.

70. **Recurrent reports.** These are reports that are part of the PGT's reporting on the Project. These reports review progress and achievements (or the lack thereof) and describe and / or recommend remedial action at the level of project management. The PPITs and DPITs will identify success stories or failures and report these for inclusion in the reports.

- A consolidated Physical and Financial **Monthly Progress Report (MPR)** will be prepared by the PMU which will consolidate all the physical progress made on all sub-components. This report will also cover overall expenditures under each component.
- **A Quarterly Progress Reports (QPR)** will be prepared, which consolidates the monthly reports of the past three months adding information on finance, procurement, training and physical progress. It comprises of tabular information derived from the monitoring system, which is complemented by short written analyses of the implications of the measured progress; and by (draft) management decisions to improve performance;
- An **Annual Project Progress Report (APR)** will be prepared within one month of the end of the Project Year to cover the entire financial year. This report will be presented to NPSC and IFAD. The APR includes:
  - Introduction;
  - Implementation progress, supported by data from the M&E system, including highlights related to reporting, events, publications and lessons learned;
  - Financial Management – providing short narrative text along with tabular information;
  - Procurement Management – reviewing key procurement processes and bottlenecks and successes therein;
  - Management Reflection – listing the issues and risks the Project is facing as well as suggested management actions for review by the NPSC and / or IFAD;
  - An update of the combined exit and scaling strategy (see III.N) is included or attached to the first Annual Progress Report.
- **Periodic survey reports** – to be published in year 1, 3 and 6 for the baseline, mid-term and end-line survey respectively. Reports are prepared by a contracted party but published after approval by the NPSC;
- **Position Papers** – to be published ahead of the annual IFAD Supervision Missions and of the Mid-Term Review. These papers are a reproduction, and if need be an update, of the Management Reflection included in the Annual Progress Report;
- **Project Completion Report** – To be published six months before Project completion in order to facilitate IFAD's final Supervision Mission. The format and content for this report will be coordinated with IFAD.
- **Annual Work Plan and Budget and Procurement Plan** – 60 days prior to the start of the GoL financial year, with updates as and when needed (See Section 46(a));

71. **Occasional reports.** These are reports supporting implementation of one or more elements of the Project. These technical reports include – but are not limited to – the following:

- Study of Knowledge, Attitudes and Practices with respect to nutrition across the 19 Project Districts;
- The field studies on Participatory Irrigation Management. The studies are formulated and prepared in the context of the intended contribution of the Project to policy review on irrigation management in Laos;
- Fact-finding surveys – undertaken or commissioned by the M&E specialist to review specific elements of the programme and especially how these relate to targeted beneficiaries, costs, benefits and development pathways assumed during project design.

## **M. Risk Management**

72. Anticipation of risks and proactive action to prevent or minimise their influence form key responsibilities of the Project Director. The Management Reflection in the Annual Progress Report should include up-to-date information on risks and describe the mitigation measures pursued or proposed by the PMU.

73. PICSA's design includes the assessment of diverse risks, including risks associated with the intervention logic of the Project, country- and operational risks related to financial management (PDR annex 9, table 7) and risks emanating from the social-, environmental and climate assessment (PDR annex 5). These risks have been reviewed in the Integrated Risk Framework (PDR annex 9, table 6). Identified risks have either been addressed resolved through a mitigation measure incorporated in the project design; or are externalised as LogFrame assumptions, which (i) are expected to hold, but (ii) which will be monitored during project implementation so that additional mitigation measures may be taken if need be. Some risks are reflected both in a mitigation measure and in a LogFrame assumption. The latter addresses any remaining risk after the mitigation measure inbuilt in the project design has taken effect. The assumptions in the LogFrame (Appendix 1) can be interpreted as foreseen risks but risks unforeseen at design may emerge during project implementation.

74. The PGT needs to remain vigilant on the risks facing the Project:

- (a) Known risks – The PGT shall review whether the assumptions included in the LogFrame continue to hold. Should any of these assumptions be incorrect – and hence turn into a risk – then management action will be taken immediately to contain the risk, to take mitigation measures or to adapt to it. This is reported upon in the Annual progress report;
- (b) Unforeseen risks – PICSA implementation may be affected by risks that are not foreseen during the design. The PGT is responsible for the early identification of these risks as well as for initiating management action to curtail or mitigate the new risks; or to adapt to it.

75. The management reflection in the progress report will review all risks that affect the Project and report on the course the project management proposes to take or has taken. The Project Director and the PICSA Coordinator will ensure that against each risk action is taken. This may involve seeking guidance from the NPSC or no objection from IFAD, as required.

## **N. Sustainability**

76. The Project aims to place a new foundation under the rural economy in the project area; comprising of intertwining smallholder agriculture with emerging markets; and of a stronger hand in improving rural livelihoods of especially the disadvantaged groups. Sustainability of this intervention depends on continued investment in this foundation: The Project is successfully completed when farmers, farmer groups and water user groups use an adequate part of their increased earnings to reinvest in agricultural intensification – in order to at least safeguard the new level of productivity and market integration, but ideally aimed towards further advancement. The second test of successful

completion is for inclusiveness to become a standard consideration in decision-making on rural development and in the interaction between decentral government entities (Village, District, Province).

77. **Sustainability from the start.** The sustainability of the Project outcomes must be a continuous consideration in project management. It is in fact, an additional way of interpreting and operationalising the Project objectives. Thinking of sustainability is a counterweight to a singular focus on project targets; and helps adjust and improve the course of the Project.

78. The PICSA management's thinking on sustainability is shaped by the development – during the course of the project – of an exit strategy and a strategy for scaling-up and scaling-out project achievements. Together, these strategies address three questions:

- (a) Exit strategy – What needs to be done to ensure the Project is successfully completed?
- (b) Scaling strategy (scaling-up) – What needs to be done to ensure the benefit flow of the Project increases during and beyond the course of the Project?
- (c) Scaling strategy (scaling-out) – What needs to be done to apply Project's successes elsewhere?

79. **Management responsibility.** In PICSA, the exit- and scaling strategies will be treated as one. The PGT and especially the Chief Technical Advisor is responsible to develop and refine the Project's exit- and scaling strategies. He/she will do so in an interactive manner, involving relevant stakeholders and pursuing their commitment.

80. **Supervision.** The readiness of the exit- and scaling strategies will formally have to be reviewed from the MTR onwards; but PICSA will seek earlier review by supervision missions.

81. **Zero Versions.** The Project's Exit and Scaling Strategies needs to be refined in the course of the Project, taking benefit of lessons learned on what works and what doesn't; while gradually shifting focus from sustaining Project benefits to scaling-up and scaling-out those benefits. To facilitate the PGT in further elaborating the Exit and Scaling Strategies; the PDR (annex 10) includes five draft strategies.

## O. Supervision and Implementation Support (SIS)

82. Supervision Missions for PICSA will be combined with the review missions for SRIWMSP and ERP in order to help maintain the coherence between the projects.

83. IFAD will provide Supervision and Implementation Support. Supervision Missions (including Mid-term and Completion Reviews) take place annually, whereas Implementation Support is provided on a needs-basis. The PGT is to take a proactive role in signalling topics and/or issues to be reviewed by these Missions; as well as suggesting decisions for which agreement between IFAD and the GoL is required. All SIS Missions are concluded by a wrap-up meeting chaired by the Vice Minister of MAF.

84. The Supervision Missions' review covers: (i) physical and financial progress as measured against AWPBs; (ii) progress of the activities carried out by the Project partners; (iii) emerging achievements in terms of outputs and outcomes of the Project; and (iv) lessons learned on strategic aspects of the Project (e.g. irrigation management). Special attention will be given to review (i) the way in which the Project contributes to development outcomes; (ii) the success of the targeting of specific beneficiary groups (including women), (iii) the exit and scaling strategies of the project; and (iv) the management of fiduciary and procurement processes.

85. The Mid-Term and Completion Reviews will take place in year 3 and year 6 and assess overall project outreach, outcomes and impact. Both Missions will also review the sustainability of results and the potential for scaling-up. The Mid-term Review will pay special attention to the readiness of the Project's exit strategy. The Completion Review will provide recommendations based on lesson learnt that should be taken into consideration while designing similar projects in future for similar contexts.

86. ToRs for the SIS Missions are prepared before each Mission and IFAD sends a Mission Announcement Letter to the concerned parties. The PGT facilitates the Missions in its programme and the associated logistics. The Mid-term and Completion Mission are to be preceded by the mid-term and end line survey, respectively.



## **IV. Component 1: Intensified Agricultural Development**

87. This component prepares and assists local authorities and farmer groups to optimise and sustain productive use of natural resources, by enabling, promoting and starting-up agricultural intensification in areas where conditions allow (esp. irrigated and irrigable lands).

### **A. Step 1 - Train District and Project staff**

88. This step presupposes that the project preparation and start-up activities (section IV.B) are completed and that the PGT, PPITs and DPITs are formed and most project staff has been recruited.

89. Nineteen interactive training sessions are organised during which DPIT staff, including the project staff, are assisted by the Local Development TA in preparing for the development of the village profile (step 2) and the organisation of the village assembly (step 3). The sessions will cover:

- (a) A review of the Project concept, especially in relation to the activities taking place with the village authorities;
- (b) A definition of the village authorities – it is suggested to work with the socio-economic development committee comprising of the headman, his two deputies, and the representatives for the Lao Women’s Union, the Youth Union and Planning. It is however important to keep a degree of flexibility to allow for specific circumstances in each Village;
- (c) Review of a format for the Village Profile. These profiles are to be very concise but should include:
  - (i) Village name and – where available – year of establishment;
  - (ii) Basic demographic information, including the ethnic composition of the village;
  - (iii) Outcomes of the village wealth ranking exercise;
  - (iv) Information on land resources, including irrigated lowlands;
  - (v) Existing Farmer Groups and Water User Groups;
  - (vi) Existing and potential agricultural intensification activities;
  - (vii) Existing marketable commodities and market linkages.
- (d) How to conduct the wealth ranking exercise (see step 2);
- (e) How to prepare and conduct the Village Assembly (step 3)
- (f) Distribution of responsibilities between DAFO staff, other departments and project staff (especially the cluster facilitators).

### **B. Step 2 – Prepare a Village Profile**

90. This step consists of village data collection and planning / prioritisation of PICSA activities in the village. This activity can be brought forward into the start-up phase as the outcomes feed into the process of AWPB preparation. Village profile exercises organised after project effectiveness should involve representatives of the Farmer Group Investment team (i.e. a qualified staff member of DAFO to work as Farmer Group Investment Coordinator and one Farmer Group Investment Advisor hired as project staff). The outcome of this step would be a specification of the activities to be considered for PICSA support in each of the 350 villages. The step is conducted by the staff assigned in step 1 and the Village Authorities (VA).

91. A key role of the Village Authorities is to target the benefits of PICSA to the poorer and more disadvantaged groups in their society (see section IV.G). To help the VA to take decisions on targeting, they will be asked to do a wealth ranking of all households in their village. The method for

participatory wealth ranking is well documented<sup>1</sup>. PICSA shall undertake this exercise with the VA members only, but shall ask them to include all households in the village. Outcomes of the wealth ranking exercise are subsequently publically reviewed in the village assembly; allowing it to make well-considered adjustment.

92. The VA will also be asked to provide the information to complete the village profile. The village profile and the wealth ranking information are documented with the original kept at the Village, and copies collected for reference at the District level. The village profile including the ranking will be confirmed during the Village Assembly (Step 3).

93. Subsequent to preparing the Profile, the PICSA representatives and the VA will plan the Village Assembly. This includes defining the lead role by the VA, defining the role of the PICSA representatives, setting a date and time and preparing an agenda.

### **C. Step 3 – Conduct Village Assembly**

94. The Village Assembly will be led by the VA with appropriate representation of the PICSA representatives. The meeting agenda will include:

- Opening by Village Headman and explanation of the objectives
- Introduction of the PICSA support that could be made available to the Village; and of the conditions under which this is given. Emphasis to be given to the need for inclusive development;
- Review and confirmation of the wealth ranking exercise;
- Review and confirmation of the information in the Village Profile, with special emphasis on the farmer groups, existing activities, key commodities and ideas for future intensification of agriculture;
- If nutrition activities are aimed at this village – discussion of the areas in which support will be rendered and on the availability of households willing to invest in supplying ingredients for school meals

95. The Village Profile and the Village Assembly can be repeated as and when needed, but take place at least once a year to evaluate development outcomes and to prepare for the next Annual Work Plan and Budget.

### **D. Step 4 – Train Water User Groups**

96. Water User groups on existing wetlands, as well as new groups formed after investments are made in small-scale irrigation on sloping land (and provided the group has more than ten members) are to be trained during the course of the Project in improved management of their scheme. The training should enable the WUG to maintain their infrastructure (including the financing thereof); to operate the infrastructure (including water distribution and differential access to land in the dry season); and to improve the infrastructure (by small modifications that allow diversification of irrigated crops, including modifications supported by the Farmer Group Investment Facility).

97. The Cluster Facilitators shall, through the VA, establish contact with most WUGs in the project area. Each WUG shall be invited to send two representatives to a District-level Irrigation Management training, along with the chairperson of the village agricultural committee. Such sessions are organised for a maximum of approximately 20 participants and shall be highly interactive. If possible, the venue of the training will be an irrigation scheme where irrigated high value crops are successfully produced.

98. The training curriculum shall cover the following topics:

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<sup>1</sup> Use can be made of the appropriate section in the ICRISAT 2009 Training Manual for Social Analysis using Qualitative tools; which can be found at:

[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=2ahUKEwj1caDpsrhAhUCPFAKHTqqBI8QFjAHeqQIBxAC&url=http%3A%2F%2Fvdsa.icrisat.ac.in%2Finclude%2Fdocument%2FGuidelines\\_QDA.pdf&usq=AOvVaw08HFitxDFysaaGESikweOg](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=2ahUKEwj1caDpsrhAhUCPFAKHTqqBI8QFjAHeqQIBxAC&url=http%3A%2F%2Fvdsa.icrisat.ac.in%2Finclude%2Fdocument%2FGuidelines_QDA.pdf&usq=AOvVaw08HFitxDFysaaGESikweOg)

- Potential for producing high value crops on irrigated lands – with due attention to the use of pressurised irrigation for vegetable crops. This can be combined with a site visit to a location of intensive vegetable production;
- Implications of production of HVCs for the management of the system – re-arrangement of dry season land access; inclusion of additional farmers in the dry season; need to use residual moisture from wet season cropping for production of winter crops; need for timely repairs of the intake and the main canal for an early start of winter irrigation; need for canal lining to reduce distribution network losses; need for on-farm irrigation equipment including pumps, drips and sprinklers; and so on.
- How to improve irrigation scheme management? – mobilisation of labour and resources for system repairs; development of internal rules for orderly operation and maintenance; irrigation service fees and so on;
- How to improve the irrigation scheme? – explanation of the use of FGIF resources for investment in irrigation schemes (headworks and other major interventions excluded; potential for on-farm irrigation infrastructure and equipment); Identification of ideas for irrigation scheme improvement;
- Steps for improving scheme management – participants are asked to discuss within their WUG the need of their WUG for follow-up support by the DOI representative / cluster facilitator, with respect to (i) improving scheme management (byelaws, irrigation service fees, maintenance planning and rotation scheduling); and (ii) agricultural intensification in the scheme's command area using the FGIG. Interested WUGs are to register their interest with the Village Authorities who shall convey this interest to the Project team.

99. The curriculum for the WG training shall be developed on the basis of the above by the Project's WUG Development and O&M Specialist and the On-farm Water Management Specialist. Review and further improvement during implementation will be undertaken by the International Irrigation O&M Specialist. Training sessions can be repeated if and when needed – with modified design and with the aim of motivating as many WUGs as possible to (i) invest in better system management and (ii) to invest in intensification of high value crop production in their commands, using the FGIG.

## **E. Step 5 – Coach Water User Groups**

100. Based on the inventory included in the WUG training and on the interest for follow-up support registered by the WUGs, PICSA will, through DOI staff and cluster facilitators with backstopping of the PICSA irrigation experts, provide coaching to individual WUGs. Aim is to enhance the cultivation of profitable crops (i.e. high value crops or bulk products with an attractive margin) in irrigated commands through better management of the existing systems and through investment in further intensification of high value cropping in the command areas.

101. To gauge progress, DOI staff seconded to PICSA will maintain a record of the concerned WUGs, the support rendered to them; their response (byelaws formulated, irrigation schedule made, irrigation fee defined, volume of maintenance fund); and the effect in terms of high value cropping.

102. Coaching will always include a joint evaluation with the WUG of the preceding irrigation season and the identification of a plan with do-able steps for the forthcoming season.

## **F. Step 6 – Support WUG application to and utilisation of FGIG**

103. Once WUGs – or sub-groups thereof – embrace the possibility to invest for agricultural intensification and especially the cultivation of high value crops (in the dry season, but also in the wet); the cluster facilitators, together with the Farmer Group Investment Advisors and concerned departmental staff will render hands-on support to the group for preparing an investment proposal under the FGIG.

104. The FGIG supports on-farm irrigation infrastructure and equipment, such as multi-use water supply systems; storage tanks and ponds, distribution canal lining, pumps and irrigation networks for

drip and sprinkler. The application for this support is similar to Step 12 ‘Support Farmer Group application to FGIG’ and described in further detail there.

## **G. Step 7 – Identify Agricultural Extension Priorities**

105. Some ideas for investment in agricultural intensification will emerge from the village profiles and experienced DAFO and PAFO staff will be able to suggest further ideas, but to continue to feed the investment process with viable ideas for good agricultural practices and agricultural diversification new knowledge needs to be inserted.

106. The Chief Technical Advisor and the Agricultural Advisors play an important role in identifying valid ideas and parties for innovation and in coordinating their introduction in the project area. Third parties can include private sector agents willing to source products from the area or interested to provide inputs. Modest financing of their involvement in transferring knowledge to farmers will help them augment their commercial coverage and will result in further opportunities for farmers producing for the market. Third parties also include knowledge- and research organisations that provide specialised knowledge in the field of agriculture. This includes the national agricultural research centre and affiliated international organisations such as WOCAT, CIP, IWMI etc.

107. The Chief Technical Advisor, with the Agricultural Advisors, is responsible for ensuring a steady flow of innovative ideas to the Provincial and District Agriculture and Forestry Offices. This is to provide the District level extension staff associated with PICSA to determine priorities for investing in agricultural extension (step 8).

## **H. Step 8 – Plan and implement agricultural extension priorities**

108. Funds for agricultural extension are available at District level and within the subsidies for capacity building provided under the FGIF. It is the role of the Extension Department’s representative in the DPIT to make sure that user-paid extension (i.e. paid out of FGIF) and extension efforts funded through the DPIT are complementary; with the latter focussing on bringing innovative concepts to the project area. The Extension Department’s representative in the DPIT and the PICSA Agricultural Extension Expert, in close coordination with the FGI-team, will together form the extension team for PICSA and will prepare an extension action plan comprising of department-led extension and supplementary extension by third parties including other farmers and farmer groups. This plan and its annual update is an input in the preparation of the AWPB for PICSA implementation in the District.

109. The extension activities must aim for maximum impact in terms of replication of existing and new Good Agricultural Practices. The District extension team will therefore not only keep record of the activities undertaken through PICSA, but also document the actual application and replication of innovations.

110. Farmers’ most prominent source of knowledge on farming is other farmers. Accordingly, a considerable part of the flow of knowledge to PICSA beneficiary farmers is expected to come from peer farmers via informal and formal exchange of experiences. Support to model farmers and organised farmer-to-farmer extension events are integral parts of the project approach, aiming at stimulating and strengthening ‘horizontal learning’ between farmers. The extension team should initiate exchange visits by facilitating and by assisting recipient farmers (i) in having a good agricultural practice to show which is relevant for the visitors; (ii) having a clear programme for explaining, showing and assessing the good practice; and (iii) having adequate resources for receiving their visitors (including training materials). Presence of extension staff is useful in helping farmers respond to difficult questions and in giving farmers the opportunity to present constraints (e.g. availability of quality seeds) to the District.

111. **User-paid extension.** Farmer groups investing in agricultural intensification (Step 9 and 10) receive funds for capacity building in relation to their investment. The groups can apply for up to USD 100 per member for tailor-made technical support planned by the group itself, incl. support from private extension agents and service providers; activities promoting partnerships between farmer groups and the private sector; and farmer-to-farmer and group-to-group exchanges. Model farmers

are central in ensuring the farmer investment groups' success. Each group should be affiliated to a model farmer selected by the community. The model farmers receive financial and technical support to improve their farm practices. In return, their farms serve as demonstration sites, and the model farmers share their experience with the farmer groups and the wider farming community.

## **I. Step 9 – Establish Farmer Investment Groups**

112. The Farmer Group Investment Facility (FGIF) enables groups of targeted farmers to develop minor infrastructure for irrigation and market access; and to invest in agricultural production. The facility also supports young and model farmers to invest into profitable, productive farming systems based on Good Agricultural Practices (GAP) in order to introduce improved and innovative technology to the farming communities.

113. A total of 1,033 farmer groups will be supported by the facility, of these 333 (about one per village) for small-scale infrastructure, and 700 (in average two per target village) for agricultural input packages. Seven hundred young and model farmers (in average two per target village) will receive grants for establishment of ecologically and economically suitable demonstration units using Good Agricultural Practices. At the end of the project, at least 80% of the participating households are expected to report increased agricultural production, with an estimated average rate of return above 10%.

114. Initially, each village can set up one Infrastructure Investment Group (WUG or sub-group thereof, or road user group in case of village-to-farm tracks) and two Agricultural Investment Groups, and nominate two model or young farmers for support by the investment facility. Participation in an infrastructure investment does not exclude from participation in one agricultural investment group; model and young farmers can also be group members with full membership rights. In case of redundant funds at later stages of the project, more groups and model farmers can be supported in villages with previously successful track record, and successful groups can apply for a follow-up subsidy. Spreading innovation to a larger group of beneficiaries would, however, be preferred.

115. To start up formation of farmer groups willing to invest, the FGI team joins the village assemblies (step 3). The FGI team contributes relevant information, *inter alia* from Multi-Stakeholder Platform outcomes, where available at that time (Component 2). The village assembly discusses existing and potential investment ideas and nominates potential model farmers. Subsequently, the FGI team, the village authorities and interested farmers narrow down the list of proposals discussed during assembly meetings. Self-selected farmer groups are established based on inclusive membership, with an elected group leader, a set of simple, internal regulations. Where available, model farmer(s) are included in or linked to the group connected; and in many cases, the model farmer is also the group leader. There is no upper limit for the number of participating households for infrastructure projects – but around 30 is considered a likely average; for agricultural input packages, groups shall not have more than 20 members. Collective action especially in regard to use of machinery and facilities or group-based marketing is encouraged. However, except for activities with joint ownership of assets and joint action required beyond the implementation of the investment, groups are expected to remain informal without sustained group activities after completion of the investment.

## **J. Step 10 – Support applications to and utilisation of the FGIF**

116. Upon establishment of farmer groups, a structured and streamlined FGI application process enables the groups to plan and prepare for their investments. The FGI team, located at the District Agricultural Office, supports the farmer groups in applying for subsidy on their investments. The team coordinates with other departments and organisations – Village Authorities, Dep. Of Irrigation, Dep. Of Crop Production, Dep. Of Livestock, District Trade and Commerce Office (DOTC) – and reports to the (already existing) District Social and Economic Development Committee (DSEDC). The Provincial Agro-Enterprise Development Advisor and his/her counterpart provide oversight on behalf of PICSA. The Cluster Facilitators assist the FGI team with intensive coaching and supervision of farmer groups during the investment process.

117. The investment application comprises: (i) the application format; (ii) a short description of the investment including basic parameters, including justification for, how the investment adapts new or improves existing production techniques; (iii) a simple cost/benefit calculation proving the financial viability of the investment; (iv) a capacity development plan stipulating providers and measures to ensure technical assistance; (v) maps and drawings describing location and layout (for infrastructure investments); and, (vi) an investment plan stating expected amounts of inputs required (land, labour, local material, purchase of material and services). The FGI team facilitates the connection of the group with relevant providers of inputs and technical assistance.

118. The Farmer Group Investment Facility applies rigorous criteria and procedures, which are described in the *Guidelines for the Farmer Group Investment Facility* in appendix 6. The facility operates under the following main principles:

- (a) The rationale for the FGI Facility is to combine substantial beneficiary contributions with subsidies for capacity building and financial expenditures. The main part of beneficiaries' 50% contribution to the investment is in kind, but, in line with group members' financial capacity, groups are expected to carry a share of the financial expenditures. Supported groups receive the full share of their poor members' financial investments as subsidies, and 75% resp. 50% for medium wealth and better-off members;
- (b) During the investment planning process, it must be ascertained that the intended investment does not carry risks to create negative social (vulnerable groups) or environmental (e.g. deforestation, pollution) side-effects. Such investments are not eligible for project support, unless suitable mitigation measures are incorporated into the investment. The planning process ascertains and documents the free, prior and informed consent (FPIC) of the concerned people, including ethnic groups<sup>2</sup>;

119. Once investment applications are prepared, they are submitted to the District Social and Economic Development Committee (DSEDC) for review, prioritisation and final approval during meetings that are convened quarterly or upon demand. The review includes verification of the requirements for FPIC. Upon approval, a Grant Agreement stipulating the investment process and conditions for support is signed by all group members, by the Village Head and the chairman of the DSEDC. After processing the approved application, the subsidy is transferred directly from the Project Account to the bank account of the group leader.

120. The responsibility for the implementation of the investments lies with the group. The group is entitled to withdraw and use the funds according to its investment plan. Cluster Facilitators and FGI team supervise the groups regularly during implementation, to support and also to ensure transparency and accountability. Upon completion, with support from the FGI team, the group compiles a concise completion report. Only after review and approval by the DSEDC, ownership of the investment is vested with the beneficiaries. In case of substantial contract breaches (e.g. implementation of activities without free, prior and informed consent of affected people, non-implementation of mitigation measures), the project has the right to withdraw all remaining funds and all items purchased from grant funds for recovery.

121. One year after completion of the investment, a simple post-investment evaluation is carried out by the FGI team to determine the outcome of the investment and assess the profitability of the investment.

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<sup>2</sup> For further background, reference is made to IFAD's Indigenous People's policy and to its How-to-do Note on Indigenous peoples' involvement in FPIC.

## **V. Component 2 – Value chains developed**

### **A. Step 1 – Identify agricultural commodities and prepare Rapid Local Commodity Value Chain Analyses**

122. Outputs 2.1 and 2.2 are the responsibility of the provincial Agri-Enterprise Development (AED) teams consisting of a project-employed Agri-Enterprise Development Advisor and his government counterpart, the Agro-Enterprise Development Coordinator at the Provincial Office for Industry and Trade (POIC). The AED team also maintains oversight over the PICSA Farmer Group Investment activities at District level. The advisor has the technical and organisational lead within the team. The AED team receives technical support from an International Agricultural Value Chain Expert (ToRs are included in Appendix 4).

123. Upon recruitment and initial introduction of the AED team and the project approach to local partners, one of the AED team's first tasks is to identify commodities to receive preferential support from the project. The market assessments for the 15 SRIWMSP-funded schemes (where relevant), consultations with local government (province and district level), other organisations working in the target area with agricultural development and results from village profiles (Component 1 – step 2) inform the preliminary selection of two value chain commodities (or commodity groups with similar biophysical features; e.g. vegetables, or dry season grain crops) in each district. The overall criterion for selection is the commodity's potential for positive impact on the target group. Relevant commodities are assessed and ranked, based on their (i) potential for competitiveness; (ii) potential for growth (by quality or quantity); (iii) share of added value availed by the target group; (iv) potential for upscaling; and (v) cross-cutting issues (e.g. nutrition, gender, vulnerable groups, environment, climate impact). The selection of commodities can be changed later in the process, when better information, esp. information from village and private sector level, is available. Selected commodities can be phased-out and replaced by others that are promising better results.

124. Once the preliminary selection of commodities is done, the AED team collects and compiles further information on framework conditions, actors, processes, and the added value at each link through Rapid Local Commodity Value Chain Analyses (at least 2 per district; total 38), which also includes a first assessment of challenges and opportunities. This initial step is used to list and rank potential interventions, and also to identify potential partners for the Agro-Enterprise Investment Facility (Step 3).

### **B. Step 2 – Establish District Multi-Stakeholder Platforms (MSPs)**

125. Local commodity-based Multi-Stakeholder Platforms have the purpose to improve value chain governance by enhancing coordination and strengthening relationships between actors within selected value chains. In some districts, the local governments already organises similar fora; in these cases, the existing initiatives should be taken up and further developed, rather than establishing parallel structures<sup>3</sup>.

126. Value Chain development through MSPs is a process-oriented approach with little physical in- and output. The main measured output is the number of events organised in the framework of multi-stakeholder platforms – including MSP assemblies (314 expected), promotive events, sub-group meetings, bilateral and multilateral meetings between VC actors; informal visits to VC actors with the purpose of coaching or information collection are not to be counted. The target value is at least 1,000 events over the lifetime of the project, averaging to 9 organised events per district and year.

127. MSP events are expected to lead to improved market linkages – the target is to increase the number of formal farmer groups – market linkages established as outcome of multi-stakeholder platforms with 350, app. 19 per district.

<sup>3</sup> For detailed background on organisation and facilitation of MSPs, see Brouwer, H. and Woodhill, J. et.al. 2015. The MSP Guide – How to design and facilitate Multi-Stakeholder Partnerships. Centre for Development Innovation, Wageningen University and Research, Netherlands.

128. Impact will be assessed when updating the Value Chain Analyses at the end of the project intervention, by estimating changes in added value within the chain, and by attributing this to internal or external (f)actors. Due to the high flexibility of the MSP process, and the difficulty to attribute changes unambiguously to single factors, no target value is set.

129. The process of stakeholder engagement and coordination includes identification of opportunities and challenges, development of mutual understanding, definition of roles for coordinated and joint actions. MSPs also act as broker for technology innovations, esp. when specific market demands require specific production methods (e.g. fattening of cattle, organic production).

130. MSP activities are closely interlinked with the investment activities of farmer groups supported under output 1.4; partners of MSP activities are linked to the Agro-Enterprise Investment Facility (Step 3 and 5), where relevant.

131. Outcomes of MSPs are difficult to predict, as they depend on the initial context, commitment of participants, skills and commitment of facilitation and the scope of feasible improvement options that can be identified. Possible outcomes are:

- (a) Improved market transparency and market information e.g. by providing transparent information on price and traded volumes;
- (b) Improved linkages between VC actors in terms of number and quality – new partnerships may evolve and existing ones may be strengthened;
- (c) Joint and coordinated action, e.g. group and cooperative formation, involving business associations;
- (d) Advocacy and lobbyism towards the government and its role in providing enabling framework conditions for trade and commerce;
- (e) Mutual understanding between VC actors and conflict resolution resulting in a broader feeling of ownership of developed activities.

132. Upon completion of the VC Analyses, Multi-Stakeholder Platform (MSP) assemblies are convened on district level. An MSP assembly consists of relevant stakeholders within a value chain, including farmer representatives, farmers' and private sector organisations, government representatives, traders, processing enterprises, input suppliers, consumer representatives and financial institutions.

133. For the first MSP assembly meeting, previously identified actors (Step 1) are invited. The following points are on the agenda:

- (a) Introduce and explain the MSP concept, incl. the project's other, related activities; discuss scope and expectations;
- (b) Present and verify the Commodity Value Chain Analysis, using discussion to add further details and viewpoints;
- (c) Discuss participants' viewpoints on challenges and opportunities for positive intervention; add information from VC Analysis and context, where necessary; prepare and rank lists of challenges, fields for improvement and potential interventions;
- (d) Pick possible interventions with good potential and feasibility, and identify related key stakeholders;
- (e) Plan for follow-up action involving key stakeholders: formation of sub-groups, contact with actors interested in further support.

## C. Step 3 – Identify and prepare candidate enterprises for investment support

134. The Agro-Enterprise Investment Facility (AIF) has the purpose to strengthen commercial actors – micro, small and medium agro-enterprises as well as commercial farms with strategic position in the value chain – so they can perform their role for their own benefit as well as for the benefit of related smallholder households. Larger businesses are targeted by other interventions (including SRIWMSP), allowing PICSA to focus on MSMEs. The facility has a special focus on promoting a new generation of young rural entrepreneurs. Grant beneficiaries receive technical and financial support to strengthen their business skills, and to carry out investments with good potential for profitability and positive side-

effects to target farmers. Subsidies are used to reduce especially the small enterprises' business risk and to promote fair business practices with producers. Small enterprises with small investment requirements can apply for full grant finance, while for larger investments; enterprises are required to contribute a progressive share either from own capital or from (formal) credit. It is a particular objective of the facility to link participating enterprises to Business Development Services including formal financial institutions to cover their growing demand.

135. The provincial Agro-Enterprise Development Teams are responsible to ensure the smooth operation of the facility. Identification of candidates is made during the numerous networking activities carried out by the team in cooperation with partners and partner organisations. Information about the facility is disseminated widely, with focus on young rural entrepreneurs (e.g., amongst members of the Chamber of Commerce and Industry (CCI), at agricultural colleges, amongst members of the Lao Women's Union and Lao Youth). Potential candidates for the Agro-Enterprise Investment Facility are also identified or confirmed during Multi-Stakeholder Platform events (Steps 2 and 4), where strategic actors within the relevant value chains are convened.

136. The project will work closely with the provincial SME Support Centres (SSC) under the Lao National Chamber of Commerce and Industry (LNCCI), offering Business Development Support services, and specifically, preparatory business planning, financial management training and coaching during investment implementation. Trainings can be tailor-made to the requirements of AIF applicants, and focus particularly on the development of the grant application and its auxiliary documents. The participation of applicants at these courses will be obligatory for all enterprises legally required to have a business license.

137. Application for support by AIF is open to all individuals and businesses with relevance to the value chains promoted under the MSP or to activities supported by the Farmer Group Investment Facility (output 1.4) including but not restricted to wholesale traders, processing entities, input providers, licensed farmers' organisations and farm equipment repair and maintenance shops. Female and young applicants have a preferential status.

138. The Agro-Enterprise Development team pre-screens interested candidates with investment plans on the background of the following criteria:

- (a) Assessment of personal characteristics of the applicant reflecting on the investment perspective: reliability, commitment, educational background and professional experience;
- (b) Profitability and economic viability of the planned investment;
- (c) Potential for positive impact towards the target group;
- (d) Cross-cutting issues (e.g. nutrition, gender, vulnerable groups, environment, climate impact).

139. Selected candidates are eligible for an initial capacity development grant up to USD 750 per applicant to be used for participation at relevant trainings and other learning opportunities, and for advisory services in regard to the development of the AIF application. The applicants are coached through the application process by the Agro-Enterprise Development Team and linked to relevant service providers, market links and sources of knowledge.

140. The facility is described in detail in the 'Guidelines for the Agro-Enterprise Investment Facility' (Appendix 7). The facility operates under the following main principles:

- (a) All items in the investment plan that need to be purchased are eligible for grant financing, including machinery, office material, IT and vehicles. Existing enterprise resources, own labour and local material available at no financial cost are considered as enterprise contributions.
- (b) The share and size of the grant depends on the size of the financial investment, with the rationale that small enterprises, planning for small investments, have larger constraints to access funds than larger enterprises with more capital-intensive investments. For larger investments, it is expected that a larger share of investment costs is covered by either own equity or by formal credit. Linking rural enterprises to banks and relevant

microfinance institutions is integral part of the SSC courses (see paragraph 136). Investments up to USD 2,500 (Category I) are 100% grant financed; investments up to USD 15,000 (Category II) attract 100% grant for the first USD 2,500 and 50% grant for the expenditures from USD 2,501 and up to 15,000; investments over USD 15,000 (Category III) attract 100% grant for the first USD 2,500, 50% grant for the expenditures from USD 2,501 and up to 15,000 and 25% for expenditures from USD 15,001 and up to 50,000.

## D. Step 4 – Facilitate continued stakeholder coordination

141. After the initial MSP assembly, follow-up action is organised flexibly, including break-off sub-committees and bilateral communication with key stakeholders; the composition and agenda of the MSP can change over time according to participants' perception of problems and relevance of the platform. The AED team's ability to understand the context, to proactively interact with relevant actors and to organise and facilitate meetings and events is decisive for the success of the MSP.

142. During the Project lifetime, annual MSP assemblies are arranged for information and coordination. In between annual meetings, the Agro-Enterprise Development Team works with thematic subgroups, individual businesses (using the Agro-Enterprise Investment Facility, where relevant), in bilateral (e.g. trader – farmer groups, SME - bank) or other settings. In doing so, it strengthens business capacities and promotes interaction among key actors.

143. When promising interventions have been identified, and stakeholder commitment has been ensured, collaborative action is planned for. Bilaterally or in subgroups, detailed action plans are developed, resources, support and stakeholder contributions are secured. It is important to find a good balance applying timely and consequent follow-up and close involvement of stakeholders, but without overstressing their capacity.

144. Most MSP interventions will in the given context fall under the following categories:

- (a) Facilitating market linkages between farmer groups and buyers/processors of primary products, where farmer groups, supported by the FGI Facility, develop production capacity in regard to quantity and quality, and pool their sales towards a single buyer under contract conditions;
- (b) Goal-oriented capacity development of VC actors with support from the Agri-Enterprise Investment Facility;
- (c) Sector advocacy and support to local government agencies to solve specific bottleneck problems identified under MSP meetings.

145. **Exit Strategy:** It is not expected that the platforms turn into formal public organs – the expected main outcome of the platforms during project duration is increased awareness and ability for networking and coordination. However, before project end, it should be discussed with local governments at district and provincial level, and with relevant stakeholders, whether there is local commitment to continue the dialogue and exchange that has been promoted by PICSA, and how future activities should be organised.

## E. Step 5 – Support applications and utilisation of the AIF

146. The facility aims at supporting a total of at least 224 MSME with investment packages, of these 50 young entrepreneurs aged 35 or less. It is expected that at least 80% of the supported MSME report increasing net-turnover due to investments (outcome), and that the average Rate of Return to investment calculated 1 year after completion of investments is higher than 10%.

147. This output is closely interlinked with other outputs: MSME investment supported by the facility must have a beneficial effect on project farmer groups supported under the Farmer Group Investment Facility (output 1.4), either by fair trade linkages, or by providing crucial services to target farmers. The Multi-Stakeholder Platforms (output 2.1) facilitate new or improved market linkages between farmer groups and agro-enterprises.

148. Once the applications and its auxiliary documents prepared in Step 3 are collected by the Agro-Enterprise Development Team, they are to be checked and rated, following an objective set of criteria. The checked and rated applications are then submitted to the District Socio-Economic Development Committee. During sessions convened quarterly or upon demand, the District Committee reviews all applications for final approval. Investment Grant Agreements for approved applications are signed by the applicant and the chairman of the District Committee.

149. Upon processing and clearing for payment by PPIT and PGT, the grant is transferred directly into the grantee's personal or business bank account. The Agro-Enterprise Development team coaches and supervises the investment process, with the support from external consultants, where necessary. The PICSA District Accountant verifies that purchases are made following the Grant Agreement. All items purchased with grant money remain property of the project until an investment completion report including documentation for purchases is submitted and approved by the Project District Accountant.

150. One year after investment completion, the Agro-Enterprise Development team organises an evaluative appraisal of the supported investments involving the grant recipient, including a concise progress report since the completion of the investment, a simple benefit calculation resulting in an annual Rate of Return to the investment, comments regarding challenges encountered and recommendations given to the enterprise.

151. **Exit Strategy:** The Agro-Enterprise Investment Facility is a temporary institution ending with the project. If successful in promoting lead enterprises to apply good business management practices and to forge long-term relationships with farmers and farmers groups; the enterprises will both be more capable to reinvest, as well as be more eligible for business credit from banking institutions.

## F. Step 6 – Support FGIF-assisted farm track development

152. Farmer groups may wish to propose the construction / rehabilitation of a village to farm track under the Farmer Group Investment Facility. This requires DAFO staff related to rural development to be involved in the approval process and in providing guidance to implementation.

153. **Approval.** The FGIF resources can only be used for works not having adverse social or environmental impact. This means that farm tracks are excluded from the facility when:

- (a) FGIF resources are to be used for the purchase of land in the track's alignment;
- (b) The planned work requires involuntary land acquisition;
- (c) The planned works impact negatively on the livelihoods of people along or close to the proposed alignment;
- (d) The planned works are highly susceptible to causing environmental degradation and no adequate mitigation measures are included in the proposal;
- (e) The planned works are not supported by or acceptable to the Village Authorities.

154. **Guidance.** Farm tracks are simple earth roads of a limited span that can be constructed locally. The FGIF cash contribution may cover costs of fuel, hire of equipment, purchase of pipes for simple cross drainage, purchase of planting material (bio-engineering) and the purchase of instruments for maintenance work. Each proposed alignment will be reviewed in order to confirm whether the investment is correctly estimated. At the same time, environmental factors affecting the track's viability are assessed. This includes the area served, the slope to be traversed and the stability of the lands crossed by the alignment. Advice will be given in relation to (i) using vegetative cover to stabilise upper, back and fill slopes; and (ii) correct placement of simple plastic pipes and other materials to facilitate cross drainages. The FGIF agreement for subsidising farm track construction or rehabilitation will specify the group's responsibility for operating the road (e.g. restricting access based on road size and weather conditions) and for maintaining it (refilling potholes, draining overly wet patches, etc.). The Village Authorities will be witness to this agreement to ensure the continued commitment of the farmer group.

## **G. Step 7 – Select priority village tracks**

155. Each village – prompted by component 1, steps 2 and 3 – may propose priority village to village tracks for rehabilitation. Prioritisation in keeping with the available resources will take place at District level and will be reviewed at Provincial level to ensure coherence with the road development planned for the Province as a whole. This requires the PPIT to coordinate well with the DPITS and with the Provincial Department of Roads. The resources available for village to village track rehabilitation are limited and works must be prioritised to provide connectivity for areas of agricultural intensification that would otherwise go ignored.

156. The PICSA rural road specialist is responsible to initiate and guide the process of prioritisation, planning and design, procurement and realisation; with due involvement of actors at all concerned levels. From the very beginning he/she will emphasise that the responsibility for proper road operation and maintenance will be vested with the concerned village authorities. The road design will include the requirements for operation and maintenance, such as:

- (a) Type of vehicles allowed;
- (b) Access under adverse weather conditions;
- (c) Usage of the road shoulder for permanent activities like shops or shelter. Either this is not allowed, or clear conditions are placed on the person using the road shoulder with respect to the clearance to be maintained and the maintenance and repair of the road section close to the obstruction;
- (d) Responsibility for and frequency of inspection;
- (e) Responsibility for refilling of holes, dewatering of soaked sections, repair of appurtenant structures, etc.

157. PICSA resources cannot be allocated to roads with adverse environmental or social impact; ruling out any land acquisition or payment of compensation using PICSA resources, as well as any involuntary acquisition, uncompensated destruction of properties and livelihood opportunities. Roads that are constructed without fulfilling these criteria will be ineligible expenditures.

158. The rural roads specialist will prepare a simple multi-criteria table for planning and prioritising investment within and across Districts. Criteria will include the area served (households and hectares of cultivated land); the cost per kilometre and the technical feasibility. Preference is furthermore given to connecting the villages served by the other interventions under PICSA.

## **H. Step 8 – Plan and implement village tracks**

159. Unlike the farm tracks, the village to village roads are engineered roads and this means that the preparation shall include pegging out the alignment, a detailed design of all sections; design of appurtenant structures; and the preparation of a Bill of Quantities. Based on this, the Districts will procure services for the construction of the road; using the stipulations in the Procurement guidelines.

160. The PICSA roads engineer ensures that the good process is applied across all districts. Special attention is given to the maintenance of proper record of all decisions pertaining to the road development.

## **VI. Component 3: Improved Nutritional Practices**

161. This component promotes improved dietary intake among nutritionally vulnerable groups. Efforts to increase availability and accessibility of food with high nutrient value are accompanied by nutrition education. Nutrition interventions are carried out in Xayaboury and Luang Prabang Provinces. Nutrition interventions are complementing nutrition activities of partners and are in support of the National Nutrition Strategy and Action Plan.

162. Activities under this component will be implemented by the District Nutrition Committees. In Luang Prabang, implementation partner Save the Children will be engaged to support the District Nutrition Committee in implementing steps 1 to 5.

### **A. Step 1 – Refine target area selection**

163. Further targeting is required to direct the nutrition intervention at areas where it is most needed. PICSA component 1 and 2 target beneficiaries in 353 villages in 19 Districts. Component 3 targeting differs from this, as it focusses on pockets of malnutrition in the 19 Districts. Villages may overlap, but not necessarily so. As a first step, the PICSA nutritionist, together with the concerned Districts and the implementation partner (Luang Prabang) will review available nutrition data to prepare a list of priority nutrition intervention villages. Prioritisation is needed as PICSA resources are limited. Both the school-centred intervention (output 3.1) and the integrated food production output (3.2) will be targeted at the selected villages.

164. For selection of schools, additional considerations include the potential to improve water supply to the school; the commitment of the school to develop a garden to support preparation of school meals; and the preclusion of overlap with other support programmes. Support will be limited to primary and lower secondary schools.

### **B. Step 2 – Establish or improve school gardens and/or ponds**

165. Resources are available to invest in school gardens. These will be applied as a contribution to the establishment of new gardens, or the improvement of existing gardens. The school, together with the village authorities and the Parent's Association will provide a matching contribution; e.g. in terms of labour for fencing and land preparation.

166. A representative of the District Nutrition Committee (not necessarily from the Department of Education) will approach interested schools and jointly develop a school garden establishment or improvement plan. The plan includes the garden as well as – where feasible – construction of a pond. The latter may serve as a reservoir for watering the garden, but should primarily support the production of animal protein (fish, frogs). Given the scarcity of water, lining of the pond (LDPE sheets) should be considered. The plan will also address the continuity of the investment; i.e. how the running costs will be met over the subsequent years.

167. The PICSA contribution to garden and pond can inter alia be applied for inputs, equipment and materials. Upon obtaining concurrence from the Village authorities, the plan can – if found sound – be supported.

### **C. Step 3 – Enhance / develop water supply**

168. Modest funds are available to help improve the supply of water to the garden, so that the garden's water consumption does not compete with the water supply of the school. Where the school has no water supply, development of Multi-Use Systems for drinking and gardening water should be considered. This includes re-use of grey water.

169. The District Nutrition Committee will coordinate – through the DPIT – with concerned technical departments to find viable technical solutions to improvement of the water supply. At the same time, attention shall be given to the proper usage of the limited water resources, including precision

watering of the gardens and prudent but wise usage of water for drinking, sanitation and hand washing.

170. Plans will be developed and coordinated in the same way as in step 2.

#### **D. Step 4 – Provide nutrition education around school gardens / ponds**

171. Schools will be the centre for nutrition promotion activities and supportive activities will be extended to associated villages and households. The PICSA Nutritionist will develop training curricula for different target groups, using the school garden and the preparation of school meals as opportunities for practical orientation. This would help visualise the farm-to-fork approach.

172. The to-be-developed training courses will be targeted at teachers, pupils, the school's cooks and parents. The District Nutrition Committee, nutrition committees at village level, Parent's Associations and others will be dully involved in implementing the curricula, using the PICSA management principles that: (i) activities will be implemented at the lowest appropriate level; and (ii) implementation of all project activities requires the involvement of at least two entities.

#### **E. Step 5 – Promote balanced school meals**

173. Most schools have access to resources for providing a meal at school. PICSA's support aims at making these meals as healthy as possible. This would demonstrate both the feasibility of preparing a healthy meal with little resources; as well as contribute to the dietary intake of the school's pupils.

174. There are several ways in which PICSA extends this support: the development of gardens (step 2 and 3); the education of target groups (step 4); the provision of cooking utensils (this step); as well as the promotion of local production of relevant food items for supply to (inter alia) the school (steps 7 to 9). Members of the Lao Women Union (LWU) will be engaged in the preparation of meals for the pupils. Through the support rendered to the preparation of school meals, they will gain practical experience in preparing balanced meals.

#### **F. Step 6 – Assess local perceptions of good nutrition**

175. In order to understand constraints for healthy diets better, a Knowledge, Attitude, Practice (KAP) assessment will be conducted with special emphasis on food beliefs and taboos. Food taboos among ethnic groups especially for women and girls are a driver of low dietary quality and undernutrition. Restrictions are often against animal source protein.

176. The PICSA Nutritionist will prepare a ToR for this study (covering 19 Districts) and coordinate procurement with the Procurement Officer. The study will be planned and coordinated with the Districts and outcomes will be shared through interactive meetings in all Districts. The study will also produce a summary statement specifically for use in village meetings and nutrition education sessions. The study and its outcomes will make use of and build on a survey planned by WFP of the drivers of food choices. The result of step 6 is a better understanding of constraints to healthy diets.

#### **G. Step 7 – Support Integrated Homestead Food Production (IHFP)**

177. Healthy diets are not only determined by nutrition knowledge but also by food availability and accessibility and therefore, PICSA promotes that poor households produce more nutritious food for their own consumption. Integrated Homestead Food Production (IHFP) combines plant-based food production with production of primarily fish and frogs but also poultry where feasible on homesteads and adjacent land, aiming to boost production of high nutrient value food. IHFP results in inputs in healthy diets at household level as well as an occasional surplus that can be sold-off locally.

178. PICSA provides starter packs for integrated food production specifically for the 5% poor households in the Project area. Beneficiaries will be selected by the Village Authorities and shall form into small groups (average 6 members) with similar requirements. The VA together with the DAFO representative ascertain the viability of providing a starter pack for each member to the group; and define the contents of the packs. Procurement will be carried-out by DAFO based on specifications

and beneficiary agreements that are confirmed by the VA. Beneficiaries are expected to contribute labour.

179. A majority of schools receive financial resources to purchase food for school meals. This provides the beneficiary households of the IHFP starter packs an opportunity to supply their occasional surplus production to schools as a ‘market’. PICSA promotes this linkage as it reinforces the behavioural change that the Project seeks with respect to food production, preparation and intake.

## **H. Step 8 – Provide nutrition extension**

180. Extension officers of the District Nutrition-related agencies and Village Nutrition Teams will be capacitated to conduct nutrition sessions. Agricultural and health extension agents will work in teams to promote food production and accessibility and nutrition knowledge.

181. Nutrition extension by extension officers of the District Nutrition-related agencies and the Village Nutrition Teams needs to be focused on behavioural change. The KAP survey (step 6) provides inputs, but nutrition extension should not solely focus on transfer of knowledge, but also include ample attention for skills and attitudes. A key message should be developed, which incorporates perspectives like: ‘*Caring for the members of your household starts with providing better nutrition to all*’ and ‘*A healthy meal for all is possible if you use the resources that are at hand*’.

182. The Nutritionist is responsible to calibrate the key extension messages and methods with the training of Village Nutrition Team (provided by District staff) and the training of extension by extension officers of the District Nutrition-related agencies (provided by the Nutritionist). The latter two trainings should include attention to extension methods and communication skills.

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## Appendix 1: PICSA Logical Framework (PDR version April 2019)

Results Hierarchy	Indicators				Means of Verification			Assumptions				
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility					
Outreach	1 Persons receiving services promoted or supported by the project											
	Total - number	0	76,752	191,880	Project M&E records / Progress Report	semi-annual	PGT, PPIT, DPIT					
	Males - Number	0	38,376	95,940								
	Females - Number	0	38,376	95,940								
	Young - Number	0	19,188	47,970								
	Not Young - Number	0	57,564	143,910								
	Young females - number	0	9,594	23,985								
	Ethnic groups - number of people	0	30,701	76,752								
	Non-ethnic groups - number of people	0	46,051	115,128								
	1.a Corresponding number of households reached											
	Total households	0	14,760	36,900								
	Non-women-headed households	0	12,546	31,365								
	Women-headed households	0	2,214	5,535								
	Target group households	0	13,120	32,800								
	1.b Estimated corresponding total number of households members											
	Household members	0	76,752	191,880								
	Groups receiving project services											
	Groups - Number	0	980	2,450								
	Villages receiving project services											
	Villages - Number	0	350	350								
Project Goal	Enhanced livelihood resilience and sustainability within the project intervention area											
1	# target group households (extreme poor, poor, near poor) reporting enhanced resilience	0	9,184	22,960	a household resilience index included in the surveys	Project start, midterm and completion	PGT (outsourced)					
Development Objective	Sustainable and inclusive local economic development											
2	% of households below the poverty line	30 (est.)	20%	5%	Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)	Economic and social stability in target provinces and districts				

Results Hierarchy	Indicators					Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility		
3	% of women reporting improved quality of their diets (CI 1.2.8). This is a proxy indicator for community health - see also indicator 16.	50 (est.)	60	80	Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)		
Outcome 1	Intensified agricultural development								
4	Cropping intensity in lowland paddy fields (proxy for farming system intensity)	110%	120%	140%	Project M&E records	Annually	DPIT	Greater local economic development results in a stabilisation or reduction of out-migration	
5	% of households reporting adoption of new/improved inputs, technologies or practices (CI 1.2.2)	10 (est.)	20	50	Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)	Sound disaster risk management and disaster response	
Output 1.1	Decentral implementation strengthened								
6	# of Districts with more than 15 staff trained in project implementation and management procedures	0	19	19	Project M&E records	semi-annual	DPIT	Adequate continuity in the positions and postings of government staff at all levels	
7	# of village authorities trained in leading Local Economic Development	0	350	350	Project M&E records	semi-annual	DPIT	Government maintains its support for a strong implementation role of the Districts (Sam Sang decree put to practice)	
Output 1.2	Water users' groups trained								
8	# of groups supported to sustainably manage natural resources and climate-related risks (CI 3.1.1) assessed by WUGs using up-to-date water distribution and O&M plans	0	175	438	Project M&E records	semi-annual	DPIT	Collaboration and commitment among agencies involved in promoting commercialisation of smallholder agriculture	
Output 1.3	Extension Service provided								
9	number of persons trained in production practices and/or technologies (CI 1.1.4)	0	11,200	28,000	Project M&E records	semi-annual	DPIT	Valid agricultural innovations available from research institutions and private sector	
Output 1.4	Farmer Group Investment Facility established								
10	Number of rural producers' organisations supported (CI 2.1.3) by FGIF	0	980	2,450	Project M&E records	semi-annual	DPIT	Farm households are able to finance their part of the investment facility (needs further investigation)	
Outcome 2	Value chains developed								
11	% of households reporting an increase in sales of farm products	0	20	50	Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)		
12	% of participating enterprises having a positive net return on investment	0	80	90	Thematic survey	Midterm and completion	PGT (outsourced)		

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Output 2.1	Multi-Stakeholder Platforms established							
13	# of multi-stakeholder platform meetings held	0	125	314	Project M&E records	semi-annual	DPIT	Private investors are interested in investing in business opportunities in smallholders agriculture along conditions promoted by the programme
Output 2.2	Agro-Enterprise Investment Facility established							
14	Number of rural enterprises accessing business development services (CI 2.1.1)	0	102	255	Project M&E records	semi-annual	PPIT	Local enterprises are able to finance their part of the investment facility
Output 2.3	Access improved							
15	Number of kilometres of roads constructed, rehabilitated or upgraded (CI 2.1.5) by Project's village to village roads' support	0	202	504	Project M&E records	Annually	DPIT	Communities assume responsibility for use, maintenance and management of facilities invested in by the Project
Outcome 3	Improved nutritional practices							
16	% of women reporting improved quality of their diets (CI 1.2.8) assessed by % of women meeting the Minimum Dietary Diversity Score (women consume at least five out of the defined 10 defined food groups daily)	50 (est.)	60	80	Baseline, midterm and completion surveys	Project start, midterm and completion	PGT (outsourced)	
Output 3.1	School-based nutrition interventions established							
17	# of schools serving improved meals of adequate nutritional value	0	64	160	Project M&E records	semi-annual	DPIT	Collaboration and commitment among agencies involved in national convergence approach
18	# of new school gardens established	0	40	100	Project M&E records	semi-annual	DPIT	
Output 3.2	Increased dietary intake and improved dietary quality							
19	# of households provided with targeted support to improve their diets (CI 1.1.8)	0	680	1,700	Project M&E records	semi-annual	DPIT	



## Appendix 2: 2020 Work Plan and Budget and 18-month Procurement Plan (draft)

The following table presents the DRAFT Annual Work Plan and Budget for PICSA. It is to be reviewed by the implementing agency and to be submitted in fulfilment of the conditions for first disbursement. The full file is available in a spreadsheet format.

Goal/Objective/Outcomes/Targets		Annual targets					Total budget (USD)				Expenditure forecast 2020 (USD 1,000)					
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
Project goal	Enhanced livelihood resilience and sustainability within the project intervention area															
	# target group households (extreme poor, poor, near poor) reporting enhanced resilience			9, 184			2 2,960	households (cumulative)								
Development Objective	Sustainable and inclusive local economic development															
	% of households below the poverty line			20%			5%	% (cumulative)								
	% of women reporting improved quality of their diets (CI 1.2.8).			60%			80%	% (cumulative)								
Component 1	Intensified agricultural development															
Outcome	Cropping intensity in lowland paddy fields (proxy for farming system intensity)			120%			140%	% (cumulative)								
Outcome	% of households reporting adoption of new/improved inputs, technologies or practices (CI 1.2.2)			20%			50%	% (cumulative)								
Output 1.1	Decentral implementation strengthened															

Goal/Objective/Outcomes/Targets		Annual targets						Total budget (USD)				Expenditure forecast 2020 (USD 1,000)				
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
Output	# of Districts with more than 15 staff trained in project implementation and management procedures	19	19	19	19	19	19	Districts (cumulative)								
Targets	Local development TA engaged	48	0	0	0	0	0	person-months	48	2,000	96,000	86,400	9,600	0	0	96,000
	Training organised at district level	19	0					#	19	1,111	21,109	18,998	2,111			21,109
	Study tour for village committee	19	19					#	38	1,667	63,327	28,497	3,166			31,664
	Motorcycles for cluster facilitators	112						#	112	3,609	404,178	181,880	222,298			404,178
	M&E equipment for cluster facilitators	112						#	112	1,111	124,432	99,546	24,886			124,432
	Cluster Facilitators	56	112	112	112			person-years	392	3,030	1,187,760	169,680	0			169,680
	DSA for district staff	2,736	2,736					days	5472	8	42,556	19,150	2,128			21,278
	DSA for local development TA	720						days	720	11	7,999	7,199	800			7,999
	Motorbike operating and maintenance	1	1	1	1	1	1	lump-sum	6	22,230	133,379	20,007	2,223			22,230
Output 1.2	Water user groups trained															
Output	# of groups supported to sustainably manage natural resources and climate-related risks (CI 3.1.1) assessed by WUGs using up-to-date water distribution and O&M plans	45	110	175	260	350	440	WUGs (cumulative)								
Targets	Training of WUGs	220	220					WUGs	440	556	244,420	109,989	12,221			122,210
	Seasonal planning and closing of accounts			220	220	220	220	WUGs	880	556	489,280	0	0			0
	WUG Development and O&M Specialist	6	12					person-months	18	3,000	54,000	16,200	1,800			18,000
	On-farm Water Management Specialist	6	12					person-months	18	3,000	54,000	16,200	1,800			18,000

Goal/Objective/Outcomes/Targets		Annual targets						Total budget (USD)				Expenditure forecast 2020 (USD 1,000)				
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
	International Irrigation O&M Specialist	4	2	2	1	1	2	person-months	12	20,000	240,000	72,000	8,000			80,000
	IMT / WUG Development and Administration	9	10					training sessions	19	556	10,555	4,500	500			5,000
	On-farm Water Management	9	10					training sessions	19	556	10,555	4,500	500			5,000
	Irrigation O&M	9	10					training sessions	19	556	10,555	4,500	500			5,000
	Field studies			1	1	3		# studies	5	5,000	25,000	0	0			0
	National conference, incl preparation and reporting						1	#	1	13,000	13,000	0	0			0
	DSA for DAFO/DOL staff	3,072	3,072	3,072	3,072	3,072	3,072	days	18,432	8	143,346	21,502	2,389			23,891
Output 1.3	Extension services provided															
Output	number of persons trained in production practices and/or technologies (CI 1.1.4)	2,800	7,000	11,200	18,200	25,200	28,000	persons (cumulative)								
Targets	Training for district extension staff	19	19					course	38	1,111	42,218	18,998	2,111			21,109
	Motorcycles for District Extension Staff	38						no	38	3,970	150,845	120,676	30,169			150,845
	Equipment for District Extension Staff	19						district	19	1,111	21,109	16,887	4,222			21,109
	Agricultural Extension Expert	114	228	114				pers-month	456	800	364,800	82,080	9,120			91,200
	Trainings organised at District level		19	19	19	19		#	76	700	53,200	0	0			0
	Farmer groups exchange visits		38	38	38			#	114	1,500	171,000	0	0			0
	DSA district extension staff	3,072	3,072	3,072	3,072	3,072	3,072	days	18,432	8	143,346	21,502	2,389			23,891
	Motorcycle operating	1	1	1	1	1	1	lump-sum	6	7,542	45,253	6,788	754			7,542
	Provincial staff monitoring missions	19	19	19	19	19	19	districts	114	222	25,331	3,800	422			4,222

Goal/Objective/Outcomes/Targets		Annual targets						Total budget (USD)				Expenditure forecast 2020 (USD 1,000)				
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
Output 1.4	Farmer Group Investment Facility established															
Output	Number of rural producers' organisations supported (CI 2.1.3) by FGIF	240	610	980	1,600	2,200	2,450	# (cumulative)								
Targets	Infrastructure investments grants		70	70	70	70	70	group	350	11,460	4,011,000	0	0	0	0	
	Production package grants	40	120	150	150	150	90	group	700	8,090	5,663,070	161,802	0	161,802	323,604	
	Capacity building grants	40	120	150	150	150	90	group	700	606	424,200	19,392	0	4,848	24,240	
	Model and Young Farmers grants	40	120	150	150	150	90	group	700	1,889	1,322,090	60,438	0	15,110	75,548	
	Motorbikes	19						#	19	3,609	68,566	43,882	24,684	0	68,566	
	Office equipment	19						#	19	1,667	31,664	25,331	6,333	0	31,664	
	Farmer Group Investment Advisors	16	16	16	16	16	16	pers-year	96	7,272	698,112	116,352	0	0	116,352	
	Counterpart DAFO Allowances	3,420	3,420	3,420	3,420	3,420	3,420	pers-day	20,520	7	145,076	24,179	0	0	24,179	
	Motorcycle operation and maintenance	1	1	1	1	1	1	lump sum	6	3,771	22,627	3,394	377	0	3,771	
	Office costs	19	19	19	19	19	19	district	114	417	47,495	7,124	792	0	7,916	
	Events	19	19	19	19	19	19	district	114	222	25,331	3,800	422	0	4,222	
Component 2	Value Chains developed															
Outcome	% of households reporting an increase in sales of farm products			20%			50%	% (cumulative)								
Outcome	% of participating enterprises having a positive net return on investment			80%			90%	% (cumulative)								
Output 2.1	Farmer Group Investment Facility established															

Goal/Objective/Outcomes/Targets		Annual targets						Total budget (USD)				Expenditure forecast 2020 (USD 1,000)				
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
Output	# of multi-stakeholder platform meetings held	30	80	125	200	280	314	# (cumulative)								
Targets	International Value Chain Expert	3	2	2	1	1	1	person-month	10	20,200	202,000	60,600	0	0		60,600
	Vehicles	4	0	0	0	0	0	no	4	45,985	183,941	117,722	66,219	0		183,941
	Equipment	4	0	0	0	0	0	no	4	1,667	6,666	5,333	1,333	0		6,666
	Agro-enterprise advisors	4	4	4	4	4	4	pers-year	24	30,300	727,200	121,200	0	0		121,200
	DSA POIC counterparts	360	720	720	720	720	720	day	3,960	10	39,996	3,636	0	0		3,636
	Office expenses	1	1	1	1	1	1	lump sum	6	6,666	39,996	5,999	667	0		6,666
	Vehicle operation and maintenance	1	1	1	1	1	1	lump sum	6	10,117	60,701	9,105	1,012	0		10,117
	Multi-stakeholder platform events	76	76	76	76	76	76	events	456	444	202,646	30,397	3,377	0		33,774
Output 2.2	Agro-Enterprise Investment Facility established															
Output	Number of rural enterprises accessing business development services (CI 2.1.1)	20	50	102	154	206	255	# (cumulative)								
Targets	Category 1 grants	5	20	30	30	30	-	#	115	3,156	362,969	12,625	0	3,156		15,781
	Category 2 grants	5	20	30	30	25	-	#	110	11,110	1,222,100	27,775	0		27,775	55,550
	Category 3 grants	0	5	10	10	5	-	#	30	35,000	1,050,000	0	0	0		0
	Agro-enterprise capacity building grants	15	50	70	70	19	-	#	224	808	180,992	8,484	0	3,636		12,120
Output 2.3	Access improved															
Output	Number of kilometres of roads constructed, rehabilitated or upgraded (CI 2.1.5) by Project's village to village roads' support		100	202	302	402	504	# (cumulative)								
Targets	Rural road specialist (national TA)	12	6	0	0	0	-	pers-month	18	3,000	54,000	32,400	3,600	0		36,000
	Training for village track maintenance group	0	12	7	0	0	-	village	19	500	9,500	0	0	0		0

Goal/Objective/Outcomes/Targets		Annual targets						Total budget (USD)				Expenditure forecast 2020 (USD 1,000)				
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
	Survey and design of access track	252	252	0	0	0	-	km	504	100	50,400	22,680	2,520	0		25,200
	Village to village access road /a	0	252	252	0	0	-	km	504	5,000	2,520,000	0	0	0		0
	DSA for Village / kumban consultations	1,824	1,824	0	0	0	-	days	3,648	8	28,370	12,767	1,419	0		14,185
	Monitoring by district committee	0	12	7	0	0	-	district	19	200	3,800	0	0	0		0
Component 3	Improved nutrition practices															
Outcome	% of women reporting improved quality of their diets (CI 1.2.8) assessed by % of women meeting the Minimum Dietary Diversity Score			60%			80%	% (cumulative)								
Output 3.1	School-based nutrition interventions established															
Output	# of schools serving meals of adequate nutritional value			64			160	# (cumulative)								
Output	# of new school gardens established			40			100	# (cumulative)								
Targets	Partnership with SIC/Luang Prabang	1	1					lump sum	2	100,000	200,000	90,000	10,000	0		100,000
	Water supply system for gardens /b	8	24	24	24	0	0	gardens	80	556	44,440	3,555	889	0		4,444
	Land preparation and fencing /c	16	48	48	48	0	0	gardens	160	265	42,420	0	424	3,818		4,242
	Agricultural inputs	16	48	48	48	0	0	no	160	159	25,452	2,291	255	0		2,545
	Training for teacher (gardening)	16	48	48	48	0	0	training	160	167	26,664	2,400	267	0		2,666
	Training for teacher (nutrition)	16	48	48	48	0	0	training	160	83	13,332	1,200	133	0		1,333
	Training for pupils	10	30	30	30	30	30	schools	160	83	13,332	750	83	0		833
	Training of cooks	16	48	48	48	0	0	session	160	56	8,888	800	89	0		889
	Equipment for school kitchens	16	48	48	48	0	0	kit	160	222	35,552	2,844	711	0		3,555

Goal/Objective/Outcomes/Targets		Annual targets						Total budget (USD)				Expenditure forecast 2020 (USD 1,000)				
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
	nutrition advisor	6	12	6	0	0	0	person-month	24	2,500	60,000	13,500	1,500	0		15,000
Output 3.2	Increased dietary intake and improved dietary quality															
Output	# of households provided with targeted support to improve their diets (CI 1.1.8)	200	400	680	950	1,300	1,700	# (cumulative)								
Targets	Nutrition assessment/KAP survey	1	0	0	0	0	0	no	1	25,000	25,000	22,500	2,500	0		25,000
	District meetings/presentation of results	19	0	0	0	0	0	no	19	100	1,900	1,710	190	0		1,900
	Agricultural inputs	200	300	400	400	300	300	kit	1,900	222	422,180	35,552	8,888	0		44,440
	Nutrition Information Sessions	76	76	76	76	76	76	session	456	33	15,198	2,280	253	0		2,533
	Training of extension officers	114	228	114	0	0	0	training	456	122	55,728	12,539	1,393	0		13,932
	DSA /b	6,144	6,144	6,144	6,144	6,144	6,144	day	36,864	7	260,628	43,438	0	0		43,438
Project management																
	4WDs DAFOs - Start Up /a	6	0	0	0	0	0	no	6	45,985	275,912	176,584	99,328			275,912
	4WDs DAFOs	13	0	0	0	0	0	no	13	45,985	597,809	382,598	215,211			597,809
	Computers and printers	1						set	1	49,995	49,995	39,996	9,999			49,995
	Photocopier	1						lump sum	1	30,553	30,553	24,442	6,111			30,553
	Furniture	1						lump sum	1	38,885	38,885	31,108	7,777			38,885
	SAGE/ACCPAC set-up and upgrade	1						lump sum	1	10,000	10,000	9,000	1,000			10,000
	Training	1	1	1				lump sum	3	10,000	30,000	9,000	1,000			10,000
	Closing training						1	lump sum	1	10,000	10,000	0	0			0
	Start-up workshop	1						lump sum	1	7,777	7,777	6,999	778			7,777
	Orientation training PICSA staff	1						lump sum	1	7,777	7,777	6,999	778			7,777
	PICSA management meetings /b	6	12	12	12	12	12	meeting	66	56	3,666	300	33			333
	Baseline survey	1						lump sum	1	25,000	25,000	22,500	2,500			25,000
	Mid-term survey			1				lump sum	1	12,000	12,000	0	0			0

Goal/Objective/Outcomes/Targets		Annual targets						Total budget (USD)				Expenditure forecast 2020 (USD 1,000)				
Level	Intervention	2020	2021	2022 / MTR	2023	2024	2025	units	quantity	unit cost	amount	IFAD	GoL	Beneficiaries	Private sector	Total
	End-line Survey						1	lump sum	1	16,000	16,000	0	0			0
	Annual Outcome Surveys	0	0	1	1	1	1	each	4	4,375	17,500	0	0			0
	ORMS	1	0	0	1	0	0	each	2	4,375	8,750	3,938	438			4,375
	Impact assessment survey	0	0	0	1	0	0	each	1	25,000	25,000	0	0			0
	Knowledge management products	0	1	1	1	1	1	set	5	2,500	12,500	0	0			0
	Annual audits	1	1	1	1	1	1	lump sum	6	15,000	90,000	13,500	1,500			15,000
	Translation services	1	1	1	1	1	1	lump sum	6	4,000	24,000	3,600	400			4,000
	Project Director	6	12	12	12	12	6	pers-month	60	303	18,180	0	1,818			1,818
	Chief Technical Advisor	12	12	12	12	12	12	pers-month	72	5,050	363,600	60,600	0			60,600
	Finance Manager	6	12	12	12	12	6	pers-month	60	2,525	151,500	15,150	0			15,150
	Procurement Officer	6	12	12	12	12	6	pers-month	60	2,525	151,500	15,150	0			15,150
	M&E Officer	6	12	12	12	12	6	pers-month	60	1,263	75,750	7,575	0			7,575
	Provincial Directors (4x)	24	48	48	48	48	24	pers-month	240	354	84,840	0	8,484			8,484
	Provincial Accountant (4x)	24	48	48	48	48	24	pers-month	240	354	84,840	8,484				8,484
	District Accountant (19x)	114	228	228	228	228	228	pers-month	1,254	354	443,289	40,299	0			40,299
	O&M 4WDs DAFO	1	1	1	1	1	1	lump sum	6	15,175	91,051	13,658	1,518			15,175
	Office accommodation	12	12	12	12	12	12	lump sum	72	4,000	287,971	0	47,995			47,995
	Travel expenses	1	1	1	1	1	1	lump sum	5	16,665	83,325	7,499	833			8,333
	Operating cost start-up phase	1						lump sum	1	8,888	8,888	7,999	889			8,888
	Operating cost other	4,625	25,250	25,250	25,250	25,250	12,625	USD/year	118,250	1	131,376	4,625	514			5,138
												Expenditure forecast 2020 (USD 1,000)				
												IFAD	GoL	Beneficiaries	Private sector	Total
												3,234,855	893,341	185,577	34,567	4,348,341

The following tables presents the DRAFT 18-months Procurement Plan for PICSA. It is to be reviewed by the implementing agency and to be submitted in fulfilment of the conditions for first disbursement. The full file is available in a spreadsheet format.

The COSTAB/AWPB Code in column 1 is developed as follows:

- 1<sup>st</sup> digit: Number of the component;
- 2<sup>nd</sup> digit: Number of the output;
- 3<sup>rd</sup> digit: reference for investment (1) or recurrent cost (2);
- 4<sup>th</sup> digit: first activity reference numbers in COSTAB/AWPB;
- 5<sup>th</sup> digit: second activity reference number in COSTAB/AWPB.

#### Draft 18 - month Procurement Plan - Consulting Services

COSTAB/AWPB Code <sup>4</sup>	Description of Procurement Packages	Unit	18-month Quantity	Unit Cost (US\$)	18-month Total Cost (US\$)	Number of contracts	Procurement Method	IFAD's Prior/ Post Review	Implementing Agency
1.1.1.a1	Local development TA /a	pers-month	48	2,000	96,000	4	ICS	Prior	PGT
1.1.2.a1	Cluster Facilitators /d	pers-year	168	3,000	515,827	112	ICS	Post	DPIT/PPIT
1.2.1.b1.1	WUG Development and O&M Specialist	pers-month	18	3,000	54,000	1	ICS	Prior	PGT
1.2.1.b1.2	On-farm Water Management Specialist	pers-month	18	3,000	54,000	1	ICS	Prior	PGT
1.2.1.b1.3	International Irrigation O&M Specialist /b	pers-month	6	20,000	120,000	1	ICS	Prior	PGT
1.3.1.a4	Agricultural Extension Expert /c	pers-month	342	800	273,600	19	ICS	Prior	PPIT/DPIT
1.4.2.a1	Farmer Group Investment Advisors /e	pers-year	32	7,200	235,031	16	ICS	Prior	DPIT/PPIT
2.1.1.a1	International Value Chain Expert	pers-month	5	20,000	101,808	1	ICS	Prior	PGT
2.1.2.a1	Agro Enterprise Advisors salaries /b	pers-year	8	30,000	244,824	4	ICS	Prior	PGT/PPIT
2.3.1.a1	Rural road specialist (national TA)	pers-month	18	3,000	54,000	1	ICS	Prior	PGT
2.3.1.c1	Survey and design of access track	km	504	100	50,400	Multi	FA	Post	DPIT/PPIT
3.1.1.e	Nutrition Advisor /d	pers-month	18	2,500	45,000	1	ICS	Prior	PGT
3.2.1.a1	Nutrition assessment/KAP survey	no	1	25,000	25,000	1	CQS	Post	PPIT/DPIT
4.1.b1.1	SAGE/ACCPAC set-up and upgrade	lump sum	-		10,000	1	CQS	Post	PGT
4.1.b1.2	SAGE/ACCPAC Training	lump sum	-		20,000	1	CQS	Post	PGT
4.1.b3.1	Baseline survey	lump sum	-		25,000	1	CQS	Post	PGT
4.1.b3.5	ORMS	each	1	4,375	4,375	1	CQS	Post	PGT
4.1.b1.1	Knowledge management products	set	1	2,500	2,500	1	CQS	Post	PGT
4.1.c1	Annual audits /c	lump sum	-		30,000	2	QCBS	Prior	PGT
4.1.c2	Translation services	lump sum	-		8,000	2	CQS	Post	PGT

<sup>4</sup> See introductory text to this annex.

**Draft 18 - month Procurement Plan - Consulting Services**

COSTAB/ AWPB Code <sup>4</sup>	Description of Procurement Packages	Unit	18-month Quantity	Unit Cost (US\$)	18-month Total Cost (US\$)	Number of contracts	Procurement Method	IFAD's Prior/ Post Review	Implementing Agency
4.2.a1.3	Finance Manager	pers-month	18	2,500	46,056	1	ICS	Prior	PGT
4.2.a1.4	Procurement Officer	pers-month	18	2,500	46,056	1	ICS	Prior	PGT
4.2.a1.5	M&E Officer /e	pers-month	18	1,250	23,028	1	ICS	Prior	PGT
4.2.a2.2	Accountant - Luang Prabang	pers-month	18	350	6,448	1	ICS	Post	PPIT
4.2.a3.2	Accountant - Xieng Khouang	pers-month	18	350	6,448	1	ICS	Post	PPIT
4.2.a4.2	Accountant - Houaphan	pers-month	18	350	6,448	1	ICS	Post	PPIT
4.2.a5.2	Accountant - Xayaboury	pers-month	18	350	6,448	1	ICS	Post	PPIT
4.2.a6.1	Accountant - Districts	pers-month	342	350	122,509	19	ICS	Post	DPIT

**Notes:**

Consultant selection methods:

- QCBS: Quality and Cost Based Selection
- QBS: Quality-based Selection
- FBS: Fixed Budget Selection
- LCS: Least Cost Selection
- CQS: Selection Based on Consultant's Qualifications
- FA: Force Account (Self-Implementation)
- ICS: Individual Consultant Selection
- SSS: Single Source Selection

**Draft 18 - month Procurement Plan - Goods**

COSTAB/AWPB Code <sup>5</sup>	Description of Procurement Packages	Unit	18-month Quantity	Unit Cost (US\$)	18-month Total Cost (US\$)	Number of contracts	Procurement Method	IFAD's Prior/ Post Review	Implementing Agency
1.1.1.c1 and 1.3.1.a2 and 1.4.1.b1	Motorcycles for cluster facilitators (112); Motorcycles for District Extension Staff (38); Motorbikes for district FGIF staff (19)	no	169	3,573	623,589	1	ICB/NCB	Prior	PGT
1.1.1.c2	M&E equipment for cluster facilitators	person	112	1,000	124,432	1	NCB	Prior	PGT
1.3.1.a3	Equipment for District Extension Staff	district	19	1,000	21,109	19	LS	Post	DPIT
1.4.1.b2	Office equipment for District FGIF	no	19	1,500	31,664	19	LS	Post	DPIT
2.1.1.b2	Equipment /a - PPITs	no	4	1,500	6,666	4	LS	Post	PPIT
3.1.1.b1	Water supply system for gardens /b	gardens	32	500	18,043	Multi	LS	LS	DPIT
3.1.1.b2	Land preparation and fencing /c	gardens	64	250	17,223	Multi	LS	LS	DPIT
3.1.1.b3	Agricultural inputs	no	64	150	10,334	Multi	LS	LS	DPIT
3.1.1.d	Equipment for school kitchens	kit	64	200	14,434	Multi	LS	Post	DPIT
3.2.1.b1	Agricultural inputs	kit	500	200	112,433	Multi	LS	Post	DPIT
4.1.a1 and 2.1.1.b1	4WDs DAFOs (13) 4WDs Vehicles PPITs (4)	no	17	45,530	781,750	1	ICB/NCB	Prior	PGT
4.1.a1	4WDs DAFOs - Start Up /a	no	6	45,530	275,912	1	iCB/NCB	Prior	PGT
4.1.a2.1 and 4.1.a2.2	Computers and printers; Photocopiers	lump sum	-		80,548	1	NCB	Prior	PGT
4.1.a2.3	Furniture	lump sum	-		38,885	1	NS	Post	PGT

**Notes:**

- ICB: International Competitive Bidding
- NCB: National Competitive Bidding
- LCB: Local Competitive Bidding
- NS: National shopping
- LS: Local shopping
- SLS: Simplified Local Shopping
- FA: Force Account (Self-Implementation)
- DC: Direct Contracting

<sup>5</sup> See introductory text to this annex.

**Draft 18 - month Procurement Plan - Works, Partnership Agreements, FGIF Grants and ABIF Grants**

COSTAB/ AWPB Code <sup>6</sup>	Description of Procurement Packages	Unit	18-month Quantity	Unit Cost (US\$)	18-month Total Cost (US\$ )	Number of contracts	Procurement Method	IFAD's Prior/ Post Review	Implementing Agency
1.4.1.a1	Infrastructure investments grants /a	group	70	11,460	826,426	70	FGIF grant	Post	FGIF Groups
1.4.1.a2	Production package grants /b	group	160	8,010	1,313,832	160	FGIF grant	Post	FGIF Groups
1.4.1.a3	Capacity building grants /c	group	160	600	98,414	160	FGIF grant	Post	FGIF Groups
1.4.1.a4	Model and Young Farmers grants /d	group	160	1,870	306,725	160	FGIF grant	Post	SLM/CCA, Young Famers
2.2.1.a1	Category I: Up to USD 2,500 /b	no	25	3,125	80,169	25	ABIF Grant	Post	ABIF applicants
2.2.1.a2	Category II: USD 2,500 to 15,000. /c	no	25	11,000	282,194	25	ABIF Grant	Post	ABIF applicants
2.2.1.a3	Category III: USD 15,000 to 50,000. /d	no	5	35,000	180,285	5	ABIF Grant	Post	ABIF applicants
2.2.1.a4	Grants for capacity building /e	no	65	800	53,328	1	Partnership Agreement	Prior	PGT
2.3.1.c2	Village to village access road /a	km	252	5,000	1,492,760	Multi	LCB/Shopping	Post	DPIT
3.1.1.a1	Collaboration with nutrition partners /a	lump sum	2	100,000	200,000	1	Partnership Agreement	Prior	PGT

<sup>6</sup> See introductory text to this annex.

## Appendix 3: PICSA organisational charts

1. This appendix shows two visualisations of the PICSA organisational set up. The first one shows which entities are involved in steering and implementation; the second one locates deputed and hired staff in relation to the layers of the PICSA organisation.
2. While not included in the diagrams for reasons of simplicity, the steering committees and the governance / implementation teams also ‘house’ the agencies and staff for SRIWMSP.

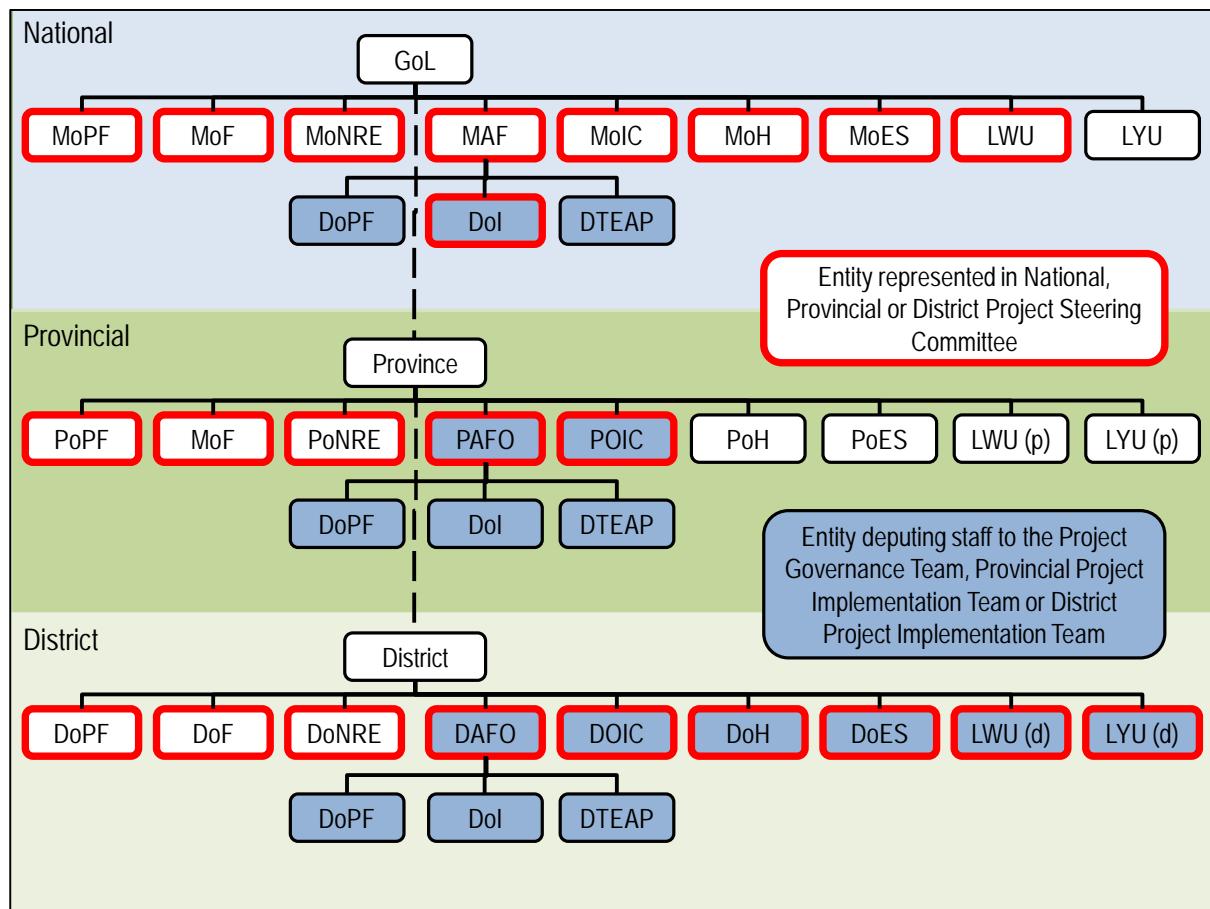


Figure 2: Membership of Steering Committee and Governance / Implementation Teams at national, Provincial and District levels

	National	DEPUTED	Hired
PGT	<ul style="list-style-type: none"> <li>• Project Director</li> <li>• DOI staff</li> <li>• DTEAP staff</li> <li>• DoPF staff</li> </ul>	<ul style="list-style-type: none"> <li>• Project Coordinator</li> <li>• Finance Manager</li> <li>• Procurement Officer</li> <li>• M&amp;E Officer (50%)</li> <li>• WUG Dev + O&amp;M Specialist</li> <li>• OFWM Specialist</li> </ul>	<ul style="list-style-type: none"> <li>• Int. Irrigation Specialist</li> <li>• Int. VC Expert</li> <li>• Rural Road specialist</li> <li>• Nutrition Advisor</li> </ul>
Provincial	<ul style="list-style-type: none"> <li>PPIT</li> <li>• Provincial Director</li> <li>• POIC staff</li> <li>• DOI staff</li> <li>• DTEAP staff</li> <li>• DoPF staff</li> </ul>	<ul style="list-style-type: none"> <li>• Accountant (P)</li> <li>• Local Development Expert</li> <li>• Agro-enterprise Advisor</li> </ul>	<p><b>NOTE:</b> Staff from similar disciplines (irrigation, value chains, roads, nutrition) form implementation teams</p>
District	<ul style="list-style-type: none"> <li>DPIT</li> <li>• District Coordinator</li> <li>• Staff of DOIC, DOI, DTEAP, DoPF</li> <li>• Staff of the five convergence agencies</li> <li>• Staff from other agencies as required</li> </ul>	<ul style="list-style-type: none"> <li>• Accountant (D)</li> <li>• Cluster Facilitators</li> <li>• Agri Extension Expert</li> <li>• FGI Advisor</li> </ul>	

Figure 3: Location of PICSA staff (GoL deputed and hired staff)

## **Appendix 4: Terms of Reference**

1. This appendix contains Terms of Reference for key positions in the Project; describing the role of both deputed government staff as well as hired project employees. When using these ToRs in procurement of services and other processes requiring external communication, they will be preceded by a brief description of the Project and its organisation structure, as well as – if required – by additional information on remuneration, job conditions and assignment duration. All positions are for national staff, unless specifically mentioned otherwise.

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2. GoL counterpart positions at the PPIT and DPIT – other than the Provincial Director and District Coordinator – are not provided with a Terms of Reference, as they will get their task assignment through the decrees for the establishment of the organisation structure for PICSA. It is understood, however, the GoL will second the following staff to PICSA. Their number will reflect the size of the target population per District:

- (a) Agro-Enterprise Development Coordinator from the Provincial Office for Industry and Trade (POIC) and agro-enterprise workers from the District Office for Industries and Trade
- (b) Irrigation engineers from the DAFO / DOI
- (c) Agricultural Extension Workers from DAFO / DAETP, as well as from the Kumban-level (if available)
- (d) Farmer Group Investment Coordinators from DAFO / DAETP
- (e) Engineers from the Department of Rural Development in connection with the village to village tracks
- (f) Health workers, Educational staff, nutrition extension staff and Women and Youth workers from the District Departments of Health, Education, Agriculture and the Women's and Youth Unions, respectively, to engage in component 3 activities.

**Position 1: Project Director**

Job title	Project Director
Short description	The Project Director is a senior DOI employee deputed full-time to this position to provide leadership for the full duration of the PICSA implementation period. The Project Director leads both SRIWMSP and PICSA
Objective	Enhanced livelihood resilience and sustainability within the project intervention area
Results	<ul style="list-style-type: none"> <li>• Project management principles (decentral implementation, joint actions) applied</li> <li>• Timely and constructive interaction with MAF, implementation partners and service providers at strategic level</li> <li>• Timely and constructive interaction with donors and project financiers (ADB, EU, IFAD, BMZ, GCF and others) at strategic level</li> </ul>
Reporting to	Vice-Minister MAF, National Project Steering Committee
Tasks	<ul style="list-style-type: none"> <li>• Represent the projects on behalf of the Ministry of Agriculture and Forestry at strategic level</li> <li>• Safeguard the strategic agreement with respect to the to-be-implemented projects between the concerned partners and financiers</li> <li>• Delegate project implementation to the lowest appropriate level</li> <li>• Promote integration of activities and convergence of agencies during project implementation</li> <li>• Safeguard the consistency of the projects to national policies, in particular Sam Sang</li> <li>• Initiate and pursue stakeholder involvement in policy development on participatory irrigation management, with support from the international irrigation advisor</li> <li>• Establish a culture of frank recognition of problems and of prompt resolution of the same</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Senior position within the Ministry of Agriculture and Forestry</li> <li>• Moral leadership</li> <li>• Diplomatic skill</li> </ul>

**Position 2: Chief Technical Advisor**

Job title	Chief Technical Advisor
Short description	The Chief Technical Advisor is a full-time hired project staff assigned to provide day-to-day leadership of the Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA) throughout its 6-year implementation period
Objective	Enhanced livelihood resilience and sustainability within the project intervention area
Results	<ul style="list-style-type: none"> <li>• Project management principles (decentral implementation, joint actions) applied</li> <li>• Timely and constructive interaction with MAF, implementation partners and service providers</li> <li>• Timely and constructive interaction with IFAD</li> </ul>
Reporting to	Project Director SRIWMSP / PICSA
Tasks	<ul style="list-style-type: none"> <li>• Provide overall leadership over the organisation of deputed government staff and hired project staff dedicated to PICSA at National, Provincial and District levels</li> <li>• Direct the implementation of PICSA in accordance to the Loan Agreement, Letter to the Borrower and the Project Design Report</li> <li>• Establish the organisation of PICSA at all levels and ensure its continuity</li> <li>• Introduce the work routines as described in the Project's Implementation Manuals, Financial Management Manual, Procurement Guidelines and Guidelines for Financing Facilities</li> <li>• Prepare and update the PICSA Project Implementation Manual (draft available) and oversee the production and updating of the other manuals and guidelines</li> <li>• Apply a management philosophy that pursues that (i) project activities will be implemented at the lowest appropriate level; (ii) project activities will be implemented through the involvement of at least two entities</li> <li>• Propose and take remedial efforts to keep PICSA on a steady course</li> </ul>

Job title	Chief Technical Advisor
	<p>towards achieving its objectives</p> <ul style="list-style-type: none"> <li>• Ensure timely and candid reporting of the project's plans, progress, achievements and challenges to the National Project Steering Committee and to the IFAD</li> <li>• Ensure the quality of the PICSA implementation, inter alia in terms of governance for inclusive development; reach-out to the target group and target categories; precluding negative social and environmental impacts and transparency of decisions and transactions</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Background in rural development and / or agriculture, with preference for experience with diversification of irrigated agriculture and for experience in market linkage development</li> <li>• Five years' experience in a managerial position</li> <li>• Experience in working with international financing institutions is a pre</li> <li>• Fluency in written and spoken English</li> <li>• Demonstrated skills in people's management and communication</li> <li>• A problem-solving attitude</li> </ul>

#### **Position 3: Finance Manager**

Job title	Finance Manager
Short description	The Finance Manager is a full-time hired project staff assigned to ensure management of the Project's funds in keeping with the PICSA Financing Agreement and its underlying documents.
Objective	Ensure resources allocated to PICSA are used correctly and transparently and provide value for money
Results	<ul style="list-style-type: none"> <li>• Timely flow of funds from IFAD to the activities to be financed by PICSA</li> <li>• A high standard of financial management at all levels of the PICSA project organisation</li> <li>• A Financial Management Manual acceptable to IFAD</li> <li>• Up-to-date financial information included in the Project's accounting software and other reporting systems</li> <li>• Timely and accurate financial reports including Annual work Plans and Budgets, as well as the various reports described in the Financial Management Manual</li> </ul>
Reporting to	Chief Technical Advisor PICSA
Tasks	<ul style="list-style-type: none"> <li>• Provide overall leadership in the field of financial management</li> <li>• Engage proactively with technical staff, procurement officer, M&amp;E Officer and others as relevant to jointly ensure that project activities provide a high value for money</li> <li>• Prepare and update the PICSA Financial Management Manual (draft available)</li> <li>• Establish the financial management in the designated software</li> <li>• Train and coach financial management staff at all levels</li> <li>• Ensure implementation of the financial management function in accordance to the Financial Management Manual and to the stipulations of the Financing Agreement</li> <li>• Initiate timely action to ensure coherence between budget and expenditure; including proposing reallocation among categories (if justified)</li> <li>• Report any malpractices promptly to the Project management</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Five years' experience in leading financial management of large and complex operations.</li> <li>• Experience in working with international financing institutions is a pre</li> <li>• Adequate skill in written and spoken English</li> <li>• Experience in skill development of financial management staff</li> <li>• Skills in working with accounting software and with spreadsheets software</li> <li>• A team player with a problem-solving attitude</li> </ul>

#### **Position 4: Procurement Officer**

Job title	Procurement Officer
Short	The Procurement Officer is a full-time hired project staff assigned to ensure that

Job title	Procurement Officer
description	the Project's funds are used for procuring goods, works and services in keeping with the PICSA Financing Agreement and its underlying documents.
Objective	Ensure resources allocated to PICSA are used correctly and transparently and provide value for money
Results	<ul style="list-style-type: none"> <li>Project procurement activities managed and undertaken in compliance with IFAD Project Procurement Guidelines and PICSA Procurement Guidelines;</li> <li>Capacity of PGT, PPITs and DPITs staff, AIF applicants and Farmer Groups built for undertaking decentralised project procurement activities;</li> </ul>
Reporting to	Chief Technical Advisor PICSA
Tasks	<ul style="list-style-type: none"> <li>Provide overall leadership in the field of procurement</li> <li>Engage proactively with technical staff, financial management staff, M&amp;E Officer and others as relevant to jointly ensure that project activities provide a high value for money</li> <li>Proactively coordinate procurement with project staff, counterparts and project partners in order to facilitate successful implementation of project activities</li> <li>Prepare and update the PICSA Procurement Guidelines (draft available)</li> <li>Prepare and update PICSA's annual procurement plans regularly</li> <li>Undertake procurement activities at PGT;</li> <li>Prepare procurement documents for submission to IFAD for prior review and no objection as required; Provide clarification to IFAD requests concerning procurement-related matters;</li> <li>Undertake capacity building on project procurement procedures and processes for PICSA staff, implementing agencies, ABIF applicants and Farmer Groups;</li> <li>Undertake regular field visits to oversee and provide hand-on support to PPITs and DPITs, ABIF applicants and Farmer Groups undertaking procurement activities, such as preparation of bidding documents/quotations/request for proposals, preparation of bid/quotation/proposal evaluation reports, solving procurement-related matters;</li> <li>Update regularly procurement data and files and monitor procurement progress towards the achievement of procurement schedules; prepare procurement progress reports as required;</li> <li>Contribute to the overall project planning, monitoring and evaluation, assessment of results, and communication;</li> <li>Report any malpractices promptly to the Project management</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>At least bachelor degree in business administration, finance, economics, project management or related field;</li> <li>At least 5 years relevant work experience on procurement; experience with donor- funded projects (IFAD, WB, ADB...) is desirable;</li> <li>Good communication skills and experience of working effectively with local authorities and ethnic minorities; Knowledge and skills of participatory approaches for capacity building;</li> <li>Analytical capabilities and skills to deal with legal documents, contractual agreements and procurement-related matters;</li> <li>Good report writing and communication skills in Lao and English</li> <li>A team player with a problem-solving attitude</li> </ul>

#### Position 5: Monitoring and Evaluation Officer

Job title	Monitoring and Evaluation (M&E) Officer (NOTE: SRIWMSP requirements to be confirmed before publishing this ToR)
Short description	The M&E Officer is a full-time hired project staff (50% PICSA, 50% SRIWMSP) assigned to ensure that the project's progress, achievements and challenges are known and understood and provide a basis for well-informed management decisions.
Objective	Ensure resources allocated to PICSA are used correctly and transparently and provide value for money
Results	<ul style="list-style-type: none"> <li>An up-to-date M&amp;E Manual</li> <li>Timely collection, processing and analyses of the data specified in the M&amp;E</li> </ul>

Job title	Monitoring and Evaluation (M&E) Officer (NOTE: SRIWMSP requirements to be confirmed before publishing this ToR)
	<p>Plan</p> <ul style="list-style-type: none"> <li>• Timely, accurate and candid Project Progress Reports, including drafts for a management reflection on the progress, achievements, challenges and necessary management action</li> <li>• Involvement of and interaction among relevant actors with respect to drawing lessons from PICSA and SRIWMSP; and with respect to preparing proposals for informed decisions with respect to the projects and to national irrigation management policies</li> </ul>
Reporting to	Chief Technical Advisor PICSA
Tasks	<ul style="list-style-type: none"> <li>• Provide overall leadership in the field of monitoring, evaluation and knowledge management</li> <li>• Engage proactively with technical staff, procurement officer, and others as relevant to jointly ensure that project activities provide a high value for money</li> <li>• Prepare and update the PICSA M&amp;E manual (reflecting the overall guidance given in the Project Implementation Manual, draft available)</li> <li>• Update the Logical Framework as and when required</li> <li>• Ensure data, information and lessons learned, as well as knowledge management products are stored and can be retrieved easily</li> <li>• Initiate and coordinate the preparation of the Annual Work Plan and Budget across all levels of the organisation (District, Province, National);</li> <li>• Coordinate the preparation of all recurrent reports</li> <li>• Involve project staff and others in defining the lessons learned from the projects</li> <li>• Pursue interaction among concerned staff and parties to prepare well-argued proposals for management decisions (project management, national conference on irrigation management)</li> <li>• Define terms of reference for the baseline, mid-term and end line surveys and oversee and guide the work of the contracted service provider;</li> <li>• Coordinate all occasional studies and surveys to be undertaken by the project(s);</li> <li>• Train and coach financial and technical staff involved in providing monitoring data and information, including the provision of data collection and reporting formats</li> <li>• Initiate timely action to ensure coherence between plans and achievements, including preparation of management decisions</li> <li>• Report any malpractices promptly to the Project management</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Five years' experience in monitoring, evaluation and knowledge management of large and complex operations.</li> <li>• Experience in working with international financing institutions is a pre</li> <li>• Adequate skill in written and spoken English</li> <li>• Experience in leading decentral staff in M&amp;E</li> <li>• Experience in facilitating knowledge management with multiple stakeholders</li> <li>• Skills in working with spreadsheets, word processing and presentation software,</li> <li>• A team player with strong analytical facilities</li> </ul>

#### Position 6: Director (Province)

Job title	Director (Province)
Short description	The Provincial Project Director is a senior employee deputed full-time to this position to provide leadership for the full duration of the PICSA implementation period within the Province of <b>Houphan / Xieng Khouang / Luang Prabang / Xayaboury</b> . The Project Director leads both SRIWMSP and PICSA
Objective	Enhanced livelihood resilience and sustainability within the project intervention area
Results	<ul style="list-style-type: none"> <li>• Project management principles (decentral implementation, joint actions) applied</li> <li>• Timely and constructive interaction with Provincial implementing agencies, implementation partners and service providers</li> </ul>

Job title	Director (Province)
	<ul style="list-style-type: none"> <li>• Timely and constructive interaction with other donor-financed projects and programmes</li> </ul>
Reporting to	Governor of the concerned Province. For day-to-day project coordination direct communication with the PICSA Coordinator at national level
Tasks	<ul style="list-style-type: none"> <li>• Maintain constructive relationships with the departments and partners involved in project implementation at Provincial level</li> <li>• Provide overall leadership over the organisation of deputed government staff and hired project staff dedicated to PICSA at the Province;</li> <li>• Direct the implementation of PICSA in accordance to the Project Design Report and the Annual Work Plan and Budget</li> <li>• Maintain the organisation of PICSA at Province level and apply the work routines as described in the Project's Implementation Manuals, Financial Management Manual, Procurement Guidelines and Guidelines for Financing Facilities</li> <li>• Pursue a management philosophy that promotes (i) implementation of project activities at the lowest appropriate level; (ii) implementation of project activities by combined efforts of concerned entities</li> <li>• Propose and take remedial efforts to keep PICSA on a steady course towards achieving its objectives</li> <li>• Ensure timely and candid reporting of the project's plans, progress, achievements and challenges to the Project Governance Team</li> <li>• Ensure the quality of the PICSA implementation, inter alia in terms of governance for inclusive development; reach-out to the target group and target categories; precluding negative social and environmental impacts and transparency of decisions and transactions</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Senior position within the Provincial Government</li> <li>• Background or proven experience in rural development and / or agriculture</li> <li>• Experience in working with international financing institutions is a pre</li> <li>• Demonstrated skills in people's management and communication</li> <li>• A problem-solving attitude</li> </ul>

#### **Position 7: District Coordinator**

Job title	District Coordinator
Short description	The District Coordinator is a senior employee deputed full-time to this position to provide leadership for the full duration of the PICSA implementation period within the District of <b>insert name of one of 19 Districts</b> . The District Coordinator coordinates the implementation of activities at District level of both PICSA and SRIWMSP
Objective	Enhanced livelihood resilience and sustainability within the project intervention area
Results	<ul style="list-style-type: none"> <li>• Project management principles (decentral implementation, joint actions) applied</li> <li>• Timely and constructive interaction with District implementing agencies, implementation partners and service providers</li> <li>• Timely and constructive interaction with other donor-financed projects and programmes</li> </ul>
Reporting to	Governor of the concerned District. For day-to-day project coordination direct communication with the Provincial Project Director and the PICSA Coordinator at national level
Tasks	<ul style="list-style-type: none"> <li>• Maintain constructive relationships with the departments and partners involved in project implementation at District level</li> <li>• Provide overall leadership over the organisation of deputed government staff and hired project staff dedicated to PICSA at the District;</li> <li>• Direct the implementation of PICSA in accordance to the Project Design Report and the Annual Work Plan and Budget</li> <li>• Maintain the organisation of PICSA at District level and apply the work routines as described in the Project's Implementation Manuals, Financial Management Manual, Procurement Guidelines and Guidelines for Financing Facilities</li> <li>• Pursue a management philosophy that promotes (i) implementation of</li> </ul>

Job title	District Coordinator
	<p>project activities at the lowest appropriate level; (ii) implementation of project activities by combined efforts of concerned entities</p> <ul style="list-style-type: none"> <li>• Propose and take remedial efforts to keep PICSA on a steady course towards achieving its objectives</li> <li>• Ensure timely and candid reporting of the project's plans, progress, achievements and challenges to the Project Governance Team</li> <li>• Ensure the quality of PICSA implementation, inter alia in terms of governance for inclusive development; reach-out to the target group and target categories; precluding negative social and environmental impacts and transparency of decisions and transactions</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Senior position within the District Government</li> <li>• Background or proven experience in rural development and / or agriculture</li> <li>• Demonstrated skills in people's management and communication</li> <li>• A problem-solving attitude</li> </ul>

#### **Position 8: Accountant (Province)**

Job title	Accountant (Province)
Short description	The Provincial Accountant is a full-time hired project staff assigned to ensure management of the Project's funds in keeping with the PICSA Financing Agreement and its underlying documents.
Objective	Ensure resources allocated to PICSA are used correctly and transparently and provide value for money
Results	<ul style="list-style-type: none"> <li>• Timely flow of funds from IFAD to the activities to be financed by PICSA</li> <li>• A high standard of financial management of PICSA resources at Provincial level</li> <li>• Up-to-date financial information available for inclusion in the Project's accounting software and other reporting systems</li> <li>• Timely and accurate financial reports including Annual work Plans and Budgets, as well as the various reports described in the Financial Management Manual</li> </ul>
Reporting to	Financial Manager
Tasks	<ul style="list-style-type: none"> <li>• Engage proactively with technical, procurement and M&amp;E staff to jointly ensure that project activities provide a high value for money</li> <li>• Ensure implementation of the financial management function in accordance to the Financial Management Manual and to further instructions by the Finance Manager</li> <li>• Provide backstopping to the District Accountants</li> <li>• Report any malpractices promptly to the Project management</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Five years' experience in project accounting</li> <li>• Experience in working with international financing institutions is a pre</li> <li>• Skills in working with spreadsheets software. Experience with accounting software is a pre</li> <li>• A team player with a problem-solving attitude</li> </ul>

#### **Position 9: Accountant (District)**

Job title	Accountant (District)
Short description	The District Accountant is a full-time hired project staff assigned to ensure management of the Project's funds in keeping with the PICSA Financing Agreement and its underlying documents.
Objective	Ensure resources allocated to PICSA are used correctly and transparently and provide value for money
Results	<ul style="list-style-type: none"> <li>• Timely flow of funds from IFAD to the activities to be financed by PICSA</li> <li>• A high standard of financial management of PICSA resources at District level</li> <li>• Up-to-date financial information available for inclusion in the Project's accounting software and other reporting systems</li> <li>• Timely and accurate financial reports including Annual work Plans and Budgets, as well as the various reports described in the Financial Management Manual</li> </ul>
Reporting to	Provincial Accountant, national Finance Manager

Job title	Accountant (District)
Tasks	<ul style="list-style-type: none"> <li>Engage proactively with technical, procurement and M&amp;E staff to jointly ensure that project activities provide a high value for money</li> <li>Ensure implementation of the financial management function in accordance to the Financial Management Manual and to further instructions by the Finance Manager</li> <li>Provide guidance to District staff dealing with farmer groups on correct administrative procedures for the FGIF facility and to small enterprises for the AIF facility</li> <li>Report any malpractices promptly to the Project management</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>Two years' experience in project accounting</li> <li>Skills in working with spreadsheets software</li> <li>Good social skills in dealing with staff, farmers and enterprises</li> <li>A team player with a problem-solving attitude</li> </ul>

#### **Position 10: Local Development Expert**

Job title	Local Development Expert
Short description	The Local Development Expert is a hired project staff stationed at Provincial level for a duration of two years to strengthen the role of Village Authorities and Districts in the development processes supported by PICSA.
Objective	Village Authorities and Districts pursue PICSA activities as a way to achieve sustainable and inclusive local economic development
Results	<ul style="list-style-type: none"> <li>Project management principles (decentral implementation, joint actions) applied</li> <li>Timely and constructive interaction between beneficiaries, their groups and representatives, village authorities and District technical staff</li> <li>Routines for planning, implementation and review of project activities and for management of outcomes established in Village Authorities and District Departments</li> </ul>
Reporting to	National Chief Technical Advisor, District Coordinator
Tasks	<ul style="list-style-type: none"> <li>Guide the implementation of steps 2 and 3 of component 1 (Prepare a village profile, Conduct village assembly) in keeping with the Project Implementation Manual</li> <li>Establish strong practices for targeting development activities (including PICSA) in the Village authorities</li> <li>Pursue continuity of the above two points beyond the duration of the position;</li> <li>Provide leadership and backstopping to the Cluster Facilitators responsible to support the village authorities in their role</li> <li>Ensure synergy between village authorities and districts with respect to PICSA implementation</li> <li>Ensure consistency in approaches across all Districts in their Province; as well as with activities supported by peers in the other three Provinces;</li> <li>Support the Project management in providing an enabling environment for decentral implementation</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>Background in rural development and / or community development</li> <li>Five years' experience in a similar role</li> <li>Demonstrated skills in people's management and communication</li> <li>A problem-solving attitude</li> </ul>

#### **Position 11: Cluster Facilitator**

Job title	Cluster Facilitator
Short description	The Cluster Facilitator is a hired project staff stationed at District level for a duration of two years (with possible extension and/or transfer) to support the Village Authorities of and beneficiary groups in three villages in managing the local development processes supported by PICSA.
Objective	Village Authorities, WUGs, farmer groups and local enterprises pursue PICSA activities with the explicit aspiration to contribute to sustainable and inclusive local economic development
Results	<ul style="list-style-type: none"> <li>Timely and constructive interaction between beneficiaries, their groups and</li> </ul>

Job title	Cluster Facilitator
	<p>representatives, village authorities and District technical staff</p> <ul style="list-style-type: none"> <li>• Routines for planning, implementation and review of project activities and for management of outcomes established in WUGs. Farmer groups, local enterprises, Village Authorities and District Departments</li> </ul>
Reporting to	Local Development Expert, District Coordinator
Tasks	<ul style="list-style-type: none"> <li>• Support Village Authorities, WUGs, farmer groups and local enterprises in the implementation of all project activities at village level for components 1 and 2 in keeping with the Project Implementation Manual</li> <li>• Establish strong practices for targeting development activities (including PICSA) in the Village Authorities</li> <li>• Establish strong practices of cooperation within WUGs and farmer groups, including attention to vulnerable group members</li> <li>• Ensure consistency in implementation across all cluster facilitators working in the same district;</li> <li>• </li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Graduated from an agricultural college and well-acquainted with rural life and communities;</li> <li>• Good interactive and communication skills</li> <li>• A problem-solving attitude</li> </ul>

#### **Position 12: WUG Development & O&M Specialist**

Job title	WUG Development & O&M Specialist
Short description	The WUG Development & O&M Specialist is a hired project staff stationed at national level for an 18-month period who provides backstopping to PICSA staff (deputed and hired) in strengthening water user groups' capacities in using, caring for and improving their irrigation systems; <i>inter alia</i> by making use of PICSA support.
Objective	WUGs are able to ensure continued care, utilisation and improvement of their irrigation systems
Results	<ul style="list-style-type: none"> <li>• Guidelines for orientation of WUGs towards better management of their system and organisation</li> <li>• Capacities in DAFO/Dol of orienting WUGs on better management of systems and organisations</li> <li>• A clear focus in WUGs and Dol on improving system and on-farm water management (rather than on provision of new infrastructure)</li> </ul>
Reporting to	National Chief Technical Advisor, District Coordinator
Tasks	<ul style="list-style-type: none"> <li>• Guide the implementation of steps 4, 5 and 6 of component 1 (Train water WUGs, Coach WUGs, Support WUG investments through PICSA financing facility</li> <li>• Coordinate activities closely with the On-farm water management specialist</li> <li>• Prepare training programmes for WUG orientation, based on interactive methodologies and including site visits;</li> <li>• Prepare a PICSA guideline on participatory water management, for use by the Dols at PAFO and DAFO;</li> <li>• Orient PAFO and DAFO irrigation staff on participatory irrigation management through interactive methodology, including on-site application of the lessons learned (hands-on learning);</li> <li>• Contribute to lessons learned and policy recommendation with respect to Participatory Irrigation Management</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Irrigation engineer with five years' experience supporting participatory water management organisations (WUAs, WUGs). Experience in hill irrigation is a pre</li> <li>• Experience with pressurised irrigation, and irrigation of other crops than paddy</li> <li>• Demonstrated skills in training and coaching</li> <li>• Basic English language skills</li> <li>• A problem-solving attitude</li> </ul>

**Position 13: On-Farm Water Management Specialist**

Job title	On-Farm Water Management Specialist
Short description	The On-Farm Water Management Specialist is a hired project staff stationed at national level for an 18-month period who provides backstopping to PICSA staff (deputed and hired) in strengthening water user groups' capacities in enhancing the productivity of their irrigation systems; inter alia by making use of PICSA support.
Objective	WUGs are able to establish cropping patterns that make the most out of the available water resources
Results	<ul style="list-style-type: none"> <li>• Guidelines for orientation of WUGs towards better productivity and higher cropping intensity of their system</li> <li>• Capacities in DAFO/Dol for orienting WUGs on irrigation agronomy</li> <li>• A clear focus in WUGs and Dol on improving system and on-farm water management (rather than on provision of new infrastructure)</li> </ul>
Reporting to	National Chief Technical Advisor, District Coordinator
Tasks	<ul style="list-style-type: none"> <li>• Guide the implementation of steps 4, 5 and 6 of component 1 (Train water WUGs, Coach WUGs, Support WUG investments through PICSA financing facility</li> <li>• Coordinate activities closely with the WUG Development &amp; O&amp;M Specialist</li> <li>• Prepare training programmes for WUG orientation, based on interactive methodologies and including site visits;</li> <li>• Prepare a PICSA guideline on irrigation agronomy, for use by the Dols at PAFO and DAFO;</li> <li>• Orient PAFO and DAFO irrigation staff on irrigation agronomy through interactive methodology, including on-site application of the lessons learned (hands-on learning);</li> <li>• Contribute to lessons learned and policy recommendation with respect to <u>Participatory Irrigation Management for commercial smallholder agriculture</u></li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Irrigation agronomist with five years' experience supporting crop diversification under irrigated conditions.</li> <li>• Experience with pressurised irrigation, and irrigation of other crops than paddy</li> <li>• Demonstrated skills in training and coaching</li> <li>• Basic English language skills</li> <li>• A problem-solving attitude</li> </ul>

**Position 14: International Irrigation O&M Specialist**

Job title	International Irrigation O&M Specialist
Short description	The International Irrigation O&M Specialist is a hired project staff working from the PGT at national level for a total of 12 months of intermittent missions throughout the implementation period of PICSA; charged with enhancing the quality of the project support towards irrigated commercial smallholder agriculture and with making available the lessons learned for review of national policies.
Objective	MAF, PAFO and DAFO irrigation staff are more capable to support WUGs in enhancing the productivity and profitability of irrigation
Results	<ul style="list-style-type: none"> <li>• Quality assurance of the combined Guidelines for support to participatory irrigation management and irrigated crop diversification under PICSA</li> <li>• Consistency between and quality of the inputs of the WUG Development &amp; O&amp;M Specialist and the On-Farm Water Management Specialist</li> <li>• A clear contribution to decision-making at national level with respect to <u>participatory irrigation management policies and their implementation</u></li> </ul>
Reporting to	National Chief Technical Advisor
Tasks	<ul style="list-style-type: none"> <li>• Guide the implementation of steps 4, 5 and 6 of component 1 (Train water WUGs, Coach WUGs, Support WUG investments through PICSA financing facility</li> <li>• Backstop activities and products of the WUG Development &amp; O&amp;M Specialist and the On-Farm Water Management Specialist</li> <li>• Engage with senior irrigation staff on overall policy and approaches towards participatory irrigation management; including diversification of irrigation technology and irrigated crops</li> </ul>

<b>Job title</b>	International Irrigation O&M Specialist
	<ul style="list-style-type: none"> <li>• Prepare in an interactive manner lessons learned and policy recommendation with respect to Participatory Irrigation Management for commercial smallholder agriculture</li> </ul>
<b>Qualifications</b>	<ul style="list-style-type: none"> <li>• Irrigation engineer or agronomist with ten years' experience supporting participatory irrigation management. Experience in South East Asia and hill irrigation is a pre</li> <li>• Excellent advisory skills and experience with policy development</li> <li>• Analytical skills and presentation skills</li> </ul>

**Position 15: Agricultural Extension Expert**

<b>Job title</b>	Agricultural Extension Expert
<b>Short description</b>	The Agricultural Extension Expert is a hired project staff working with the District Project Implementation Team to ensure that a diverse and effective extension effort gets underway with the help of PICSA resources, and which aims to inspire (groups of) smallholder farmers to invest in existing and new agricultural practices that create greater returns.
<b>Objective</b>	DAFO agricultural extension staff and representatives of other departments are able to provide or organise extension services (including from private suppliers, knowledge institutions, model farmers and through farmer-to-farmer exchange); which support intensification of agriculture for commercial purposes; and which stimulate application to the Farmer Group Investment Facility.
<b>Results</b>	<ul style="list-style-type: none"> <li>• Agricultural intensification is promoted by diverse and highly relevant extension providers and methods;</li> <li>• DAFO extension staff is able to stimulate and where need be coordinate these diverse services and methodologies</li> <li>• Farmer groups make full use of the investment facility for agricultural intensification</li> </ul>
<b>Reporting to</b>	District Coordinator, National Chief Technical Advisor
<b>Tasks</b>	<ul style="list-style-type: none"> <li>• Guide the implementation of steps 7, 8 and 9 of component 1 (Identify extension priorities, plan and implement extension priorities, establish farmer investment groups)</li> <li>• Collaborate with and support the extension staff attached to the DPIT as well as the DAFO extension staff in general;</li> <li>• Identify with the DPIT extension staff the extension priorities based on village profiles/assemblies; value chain priority commodities and other commercial opportunities and highly potential innovations available in knowledge institutions and other areas;</li> <li>• Prepare with the DPIT extension staff an extension action plan comprising department-led extension and supplementary extension by third parties including other farmers and farmer groups;</li> <li>• Backstop extension activities and provide guidance on effective and interactive methods to DAFO extension staff;</li> <li>• Pay specific attention to the proper use of farmer-to-farmer extension, including the use of model farmers (supported by component 2) and the use of well-structured exchange visits</li> <li>• Contribute to the preparation of District-level AWPBs, with respect to the utilisation of resources for extension;</li> <li>• Contribute to the monitoring and evaluation of extension activities and the drawing of lessons from this</li> </ul>
<b>Qualifications</b>	<ul style="list-style-type: none"> <li>• Graduate agronomist (crop, fisheries or small livestock) with 5 years' experience in agricultural extension. Formal education on extension methodologies is a pre</li> <li>• Experienced in facilitation of model farmer-led extension and in organisation of farmer-to-farmer exchanges</li> <li>• Excellent communication skills</li> <li>• A problem-solving attitude</li> </ul>

**Position 16: Farmer Group Investment Advisor**

Job title	Farmer Group Investment Advisor
Short description	The Farmer Group Investment Advisor is a hired project staff working with the District Project Implementation Team to lead the Farmer Group Investment (FGI) team, which is tasked to support farmer groups in the preparation, application, implementation and evaluation of investments and to link them to relevant services, markets and sources of knowledge.
Objective	To ensure smooth processes of investment identification, planning, grant application and implementation of investments supported under the Farmer Group Investment Facility in order to optimise its long-term benefits to target farmers and the wider farming community.
Results	<ul style="list-style-type: none"> <li>• Identification, preparation and successful implementation of investments supported under the Farmer Group Investment Facility</li> </ul>
Reporting to	District Coordinator, National Chief Technical Advisor
Tasks	<ul style="list-style-type: none"> <li>• Align and coordinate with relevant actors on district level: notably DAFO – Departments of Extension, Irrigation, Crop Production and Livestock, District Socio-Economic Development Committee, District Office for Trade and Commerce, District Youth Union, Lao Women's Union.</li> <li>• Participate and contribute to Multi-Stakeholder Platform events organised at district level.</li> <li>• Train and supervise Cluster Facilitators in their role of coaching of farmer groups.</li> <li>• Participate at preparatory village assemblies and contribute with relevant information.</li> <li>• Facilitate identification of supported commodities and model farmers, and formation of farmer groups for investment purposes.</li> <li>• Support identified candidates and groups in writing applications for the FGI facility.</li> <li>• Support linking model farmers and farmer groups with traders, technical support and input providers.</li> <li>• Supervise the investment processes until completion.</li> <li>• Prepare brief post-investment evaluations of the investments.</li> <li>• Provide reports and information as required by project management and M&amp;E division.</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Completed tertiary education on relevant fields: agriculture, (farm) business management (BSc level or higher);</li> <li>• At least 3 years' experience with farmer extension, farm investment, marketing of agricultural products or similar. Working experience with ODA projects is a pre</li> <li>• good understanding of basic farm economics</li> <li>• Good team player with facilitation and networking skills</li> <li>• A problem-solving attitude</li> </ul>

**Position 17: International Value Chain Expert**

Job title	International Value Chain Expert
Short description	The International Value Chain Expert is a hired project staff working from the PGT at national level for a total of 10 months of intermittent missions throughout the implementation period of PICSA; charged with enhancing the quality of the project support towards development of value chains benefiting smallholder farmers in the Project area
Objective	POCT and DOCT staff are more capable to support micro-, small- and medium enterprises in developing their business capacities especially in relation to products sourced from local smallholder farmers
Results	<ul style="list-style-type: none"> <li>• Quality assurance of the processes used for the Multi-Stakeholder Platforms (MSP) and the Agro-enterprise Investment Facility (AIF)</li> <li>• Updated Guidelines for the Farmer Group Investment Facilities and the Agro-enterprise Investment Facility (drafts available)</li> <li>• Backstopping to PICSA staff (seconded and hired) in the field of commercialisation of agriculture</li> </ul>
Reporting to	National Chief Technical Advisor
Tasks	<ul style="list-style-type: none"> <li>• Guide the implementation of steps 6 and 7 of component 1 (Establish</li> </ul>

Job title	International Value Chain Expert
	<p>farmer groups, support FGIF applications) and steps 1 to 5 of component 2 (Identify commodities and analyse value chains, MSPs, prepare AIF candidates; facilitate coordination, support utilisation of AIF)</p> <ul style="list-style-type: none"> <li>• Backstop activities of the concerned staff at Provincial and District level</li> <li>• Enhance consistency in the implementation of the FGIF and the AIF across Districts and Provinces</li> <li>• Support continued and enhanced cooperation with the Small Business Service Centre of the Chamber of Commerce</li> <li>• Engage with senior Trae and Commerce staff to address strategic concerns in value chain approaches that aim to benefit smallholder farmers</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Tertiary education within relevant field: agriculture, business management or similar</li> <li>• 10 years working experience with agro-enterprises, Value Chain promotion and/or SME promotion</li> <li>• Required set of skills: Analytical skills and strategic oversight</li> </ul>

#### Position 18: Agro-enterprise advisor

Job title	Agro-enterprise advisor
Short description	The Agro-enterprise advisor is a hired project staff working from the PPIT at Provincial level; and has the lead of a Provincial Agro-Enterprise Development team located in the Provincial Office for Industry and Commerce, Department of SME Promotion. The team organises district-level Multi-Stakeholder Platforms that facilitate and improve linkages between Value Chain actors, and identifies and supports small and medium-sized agro-enterprises with good potential for development in capacity development, preparation, application, implementation and evaluation of investments and strengthen their linkage to producers and relevant Business Development Services
Objective	Priority value chains are more profitable for all through better coordination of producers, regulators and buyers and through higher business acumen in especially small- and medium sized enterprises
Results	<ul style="list-style-type: none"> <li>• Commodity-based Multi-Stakeholder Platforms leading to new and better relationships between relevant Value Chain actors</li> <li>• Agro-enterprises with good potential to increase value of traded commodities for mutual benefit of enterprise and producer</li> </ul>
Reporting to	Provincial Director, National Chief Technical Advisor
Tasks	<ul style="list-style-type: none"> <li>• Align and coordinate with relevant actors on national, provincial and district level, notably the Provincial Office for Industry and Commerce, the Provincial Agriculture and Forestry Office, the Provincial Chamber of Commerce and Industry, the District Agriculture and Forestry Office, District Office for Trade and Commerce, District Socio-Economic Development Committee, District Youth Union, District Lao Women's Union, the Lao Farmers' Network, agricultural colleges, traders, input suppliers and others</li> <li>• Train and supervise District Farmer Group Investment teams</li> <li>• Organise commodity-based Multi-Stakeholder Platforms with at least annual assembly meetings, subgroup and bilateral follow-up meetings and other events</li> <li>• Facilitate trade contracts between producers/farmer groups and supported agro-enterprises</li> <li>• Identify and preselect potential candidate agro-businesses for support via the Agro-enterprise Investment Facility</li> <li>• Link identified candidates to training providers and counsellors that support them in writing applications for the AI facility</li> <li>• Support AI facility applicants links with traders, technical support and input providers</li> <li>• Supervise the investment processes until completion</li> <li>• Prepare brief post-investment evaluations of the investments</li> <li>• Provide reports and information as required by project management and M&amp;E division</li> </ul>
Qualifications	<ul style="list-style-type: none"> <li>• Tertiary education within relevant field: agriculture, business management or similar</li> </ul>

<b>Job title</b>	Agro-enterprise advisor
	<ul style="list-style-type: none"> <li>• 5 years working experience with agri-enterprises, Value Chain promotion and/or SME promotion</li> <li>• Required set of skills: Facilitation, networking, team working, supervision, good understanding for Value Chain approach and SME promotion.</li> </ul>

**Position 19: Rural Road Specialist**

<b>Job title</b>	Rural Road Specialist
<b>Short description</b>	The Rural Road Specialist is a hired project staff stationed at national level for an 18-month period who provides backstopping to PICSA staff (deputed and hired) involved in development of farm tracks and village-to-village tracks by making use of PICSA support.
<b>Objective</b>	Farmer groups and Village Authorities are able to ensure the proper use and upkeep of farm tracks and village-to-village tracks constructed with support from PICSA
<b>Results</b>	<ul style="list-style-type: none"> <li>• Guidance for planning, design, construction and management of farm tracks and village tracks under PICSA</li> <li>• Capacities in Farmer Groups, Village Authorities and DAFO (Rural Development) with respect to planning, design, construction and management of farm tracks and village tracks</li> <li>• Clear arrangements for road management and maintenance</li> </ul>
<b>Reporting to</b>	National Chief Technical Advisor, District Coordinator
<b>Tasks</b>	<ul style="list-style-type: none"> <li>• Guide the implementation of steps 6, 7 and 8 of component 2 (support farm tracks, select priority village tracks, plan and implement village tracks)</li> <li>• Coordinate activities closely with the District engineer in charge of road development under PICSA; and the Procurement officer at the PGT</li> <li>• Develop basic guidance for planning, design, construction and management of farm tracks and village tracks under PICSA</li> <li>• Provide backstopping to District staff and Village Authorities involved in improving rural access</li> <li>• Provide guidance on proactively dealing with environmental and social concerns and on reporting of the same;</li> <li>• Report any irregularity with respect to social and environmental impact to the Project management</li> </ul>
<b>Qualifications</b>	<ul style="list-style-type: none"> <li>• Roads engineer with five years' experience supporting rural access tracks. Experience in hill roads is a pre</li> <li>• Experience with earthen and soft-topped roads, with cross drainage and with bio-engineering solutions</li> <li>• Experience with tender procedures</li> <li>• Basic English language skills</li> <li>• A problem-solving attitude</li> </ul>

**Position 20: Nutrition Advisor**

<b>Job title</b>	Nutrition Advisor
<b>Short description</b>	The Nutrition Advisor is a hired project staff working from the PGT at national level for a period of 2 years; charged with enhancing the intensity and quality for the PICSA-supported activities in the field of nutrition in the project area
<b>Objective</b>	The convergence agencies at District level are strongly oriented towards promoting behavioural change for better nutritional intake through well-prepared and joint activities with respect to nutrition education around integrated food production in schools and around homesteads
<b>Results</b>	<ul style="list-style-type: none"> <li>• Guidance on implementation of the PICSA activities in the field of nutrition</li> <li>• Consistency between nutrition activities and investments across Districts and Provinces</li> <li>• Capacity of DPIT nutrition staff in delivering activities aimed at behavioural change</li> </ul>
<b>Reporting to</b>	National Chief Technical Advisor, District Coordinator
<b>Tasks</b>	<ul style="list-style-type: none"> <li>• Ensure nutrition is adequately integrated in work instructions, the M&amp;E system, the Annual Working Plans/Budget and Progress reports;</li> <li>• Assist DPITs in implementing all steps under component 3 (targeting, school</li> </ul>

<b>Job title</b>	<b>Nutrition Advisor</b>
	<p>gardens, ponds, water supply, nutrition education around schools, school meals, perceptions survey (KAP), integrated homestead food production, nutrition extension around the homesteads).</p> <ul style="list-style-type: none"> <li>• In collaboration with the M&amp;E Officer, define the to-be-collected data on nutrition indicators and support take part in analyses of the same;</li> <li>• Design a survey of Knowledge Attitudes and Practice with respect to food and nutrition practices</li> <li>• Support the documentation of best practices and lessons learned for in-country and global dissemination;</li> <li>• Ensure collaboration with other in-country IFAD supported projects with a nutrition component</li> <li>• Establish and maintain working relationships with the line ministries (such as health, gender, education) to build synergy in nutrition-sensitive interventions in project interventions and support existing coordination mechanisms to improve nutrition governance;</li> <li>• Support the Chief Technical Advisor to establish local partnerships on nutrition (e.g. with development partner organizations, UN agencies, the private sector, civil society organizations, etc.) to support implementation and the provision of technical assistance;</li> <li>• Facilitate the implementation of nutrition-sensitive activities in close collaboration with relevant stakeholders (e.g. implementing partners, extension workers, community service providers);</li> <li>• Develop practical guidance for the implementers of the PICSA nutrition component</li> <li>• Coordinate capacity building and training sessions on nutrition-sensitive interventions for PICSA staff (deputed and hired);</li> <li>• Perform other duties related with nutrition, as required in the overall operations of the project.</li> </ul>
<b>Qualifications</b>	<ul style="list-style-type: none"> <li>• Advanced University Degree in Nutrition (Master or equivalent)</li> <li>• A minimum of 7 years of progressively responsible experience in major nutrition programmes</li> <li>• Field experience in multi-sector development or food and nutrition security programmes and policies</li> <li>• Experience in training, capacity building and knowledge management/sharing is a strong asset</li> </ul>



## **Appendix 5: Memoranda of Understanding**

1. This appendix contains building block for the Memoranda of understanding that need to be developed for the implementation of (i) the capacity building of small- and medium enterprises in connection to the Agro-enterprise Investment Facility, where is the intended implementation partner; and (ii) of the implementation support for nutrition activities in Luan Prabang, for which save the Children is the intended implementation partner
2. The drafts provided here are to be developed further in an applicable MoU format. Both agreements need prior review from IFAD and may be subject to legal review.

### **Memorandum of Understanding between the Ministry of Agriculture and Forestry and the Lao National Chamber of Commerce and Industry**

Whereas the Lao PDR Ministry of Agriculture and Forestry (MAF), represented by the Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA) project financed by the IFAD, pursues the goal of strengthening Agricultural SMEs in inclusive rural value chains; and

Whereas the Lao National Chamber of Commerce and Industry (LNCCI), represented by the SME Service Centre with TA by the ILO, coordinates SME technical advisory services for improved SME investment planning and management skills.

The PICSA-MAF and the SSC-LNCCI (the “Parties”) agree as follows:

#### **I. Scope of the Agreement**

I.I. This document and its two annexes form the entire MoU between the Parties (the “MoU”). The annexes:

- Annex 1: PICSA Guidelines for the Agro-Enterprise Investment Facility;
- Annex 2: SSC Laos In Business Package.

I.II. The objective of the partnership is to:

- Jointly identify and support Agro-enterprises as lead SMEs interlinked with project-supported farmer groups in inclusive rural value chains;
- Help the Agro-enterprises prepare Business Plans and Financial Plans by using the “Laos In Business” toolkit;
- Based on Business Plans and Financial Plans, develop applications for co-financing of Agro-enterprises’ proposed investments to the Agro-Enterprise Investment Facility and to financial institutions;
- Support Agro-enterprises to successfully implement the investments supported by the Agro-Enterprise Investment Facility.

#### **II. Commitments by the parties**

II.I. The SSC-LNCCI, commits to the following:

- (a) Coordinate, monitor and provide quality assurance for a Business Development Service (BDS) network;
- (b) Through provincial Chambers of Commerce and through participation in commodity-based local Multi-Stakeholder Platforms, identify Agro-enterprises in PICSA target areas as potential candidates for support from the Agro-Enterprise Investment Facility of PICSA;

- (c) Coordinate the roll-out of the “Laos In Business” BDS service package with identified Agro-enterprises, against payment for the services directly by the Agro-enterprises; This includes: (i) Support the Agro-enterprises in drafting their business plans, financial plans and grant applications according to PICSA standard; (ii) Provide individual and group-based business management assistance to the Agro-enterprises in successful implementation of their investments.

**II.II The PICSA-MAF commits to the following:**

- (a) Within the framework of local, commodity-based Multi-Stakeholder Platforms, with participation of LNCCI-SSC, Provincial Chambers of Commerce and Sector Associations, identify and preselect Agro-enterprises in target areas as potential candidates for support from the Agro-Enterprise Investment Facility;
- (b) Provide up to USD 1,000 per applicant as capacity building grant to up to 224 identified Agro-enterprises in the target area, to be used for procurement of Business Planning BDS support services through the SSC network and other capacity building measures;
- (c) Upon approval by the respective District Socio-Economic Development Committees, provide co-financing to Agro-enterprises ; The co-financing is in three categories (i) Category I: 100% grant finance for investments up to USD 2,500, (ii) Category II: 50% grant finance for financial investment between USD 2,501 and 15,000, (iii) Category III: 25% grant finance for financial investment between USD 15,001 and up to USD 50,000.

**II.III The Parties assign reference focal points in Vientiane Capital, **xx xx**, to serve as direct liaison to coordinate the joint activities.**

**II.IV. The Partnership Activity will be performed from the date of signing and will be completed by **xx xx** or other date fixed by any extension approved by the Parties.**

The undersigned, duly appointed representatives of the Parties, confirm this Agreement.

**Ministry of Agriculture and Forestry Lao National Chamber of Commerce and Industry**

Title: \_\_\_\_\_ Name: \_\_\_\_\_  
Title: \_\_\_\_\_ Name: \_\_\_\_\_

Place and Date:

Place and Date:

## **Memorandum of Understanding between the Ministry of Agriculture and Forestry and Save the Children**

**Save the children will:**

- be the implementing agency for SCALING
- Follow agreed criteria for the selection of eligible schools for nutrition supported by PRISCA
- Establish School gardens to increase the availability and accessibility of food, especially vegetables, with high nutrient value
- Follow procurement procedures in line with IFAD policies
- Submit relevant data for monitoring purposes and project progress reports

The IFAD supported project PISCA is dedicating agreed funds to Save the Children to:

- Support SCALING by establishing school gardens and water systems providing safe drinking water throughout the year and potentially providing water for irrigation
- Support nutrition education through the development or multiplication of relevant IEC material
- Enhance the consumption of healthy diets among pupils in selected schools in Luang Prabang Province
- Support the National Nutrition Strategy and Plan of Action and its convergence approach



## **Appendix 6: Farmer Group Investment Facility Guideline**

*Available under separate cover*



## **Appendix 8: Agro-enterprise Investment Facility Guideline**

*Available under separate cover*



## **Appendix 9: PICSA Household Resilience Index**

3. The purpose of the index is to present a set of questions for monitoring changes in resilience that can be integrated into the PICSA's M&E system in line with the project's theory of change, outcomes and outputs. The approach draws on a set of guidelines<sup>7</sup> developed by DFID to enable projects that they support to report resilience (mainly resilience to climate change). These guidelines are being tested and adapted by IFAD in a few countries.
4. Resilience is defined as the ability of a system, household or person to cope with changes and shocks (recover, learn and adapt or transform). There are multiple factors that can determine resilience. Typically these include the status of: social networks / community institutions and their relationships to higher level institutions and organisations; land and natural resource governance systems; diversity in: crops / livestock, income sources and livelihoods opportunities; wealth and asset ownership; quality of diets (health and nutrition); savings and access to finance; access to markets, transport and social services; and early warning systems and preventive strategies.
5. As a starting point the index considers the main risks of shocks or gradually increasing stresses related to climate change, natural, economic and social events that could negatively impact on the livelihoods of different project target households / groups and which may prevent them from exiting poverty or cause them to fall back into poverty. Based on this assessment a set of simple questions have been identified which relate to certain project outputs that are considered key for improving resilience of the project target groups.
6. The factors identified as being key for improving resilience that PICSA is anticipated to have a significant impact on, are: access to community / social networks, institutions and organisations; access to land and water; nutrition / quality of diets; diversity of income sources; and level of savings (cash and in assets) and access to emergency relief (cash or food).
7. The following key questions have been identified for monitoring resilience against the above factors (overleaf):

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<sup>7</sup> See [DFID KPI4-methodology](#).

<b>Questions</b>	<b>Score<sup>8</sup></b>
1. Are you or someone in your household a member of one of the following groups: Producer Group? <input type="checkbox"/> Water User Group? <input type="checkbox"/> Other? <input type="checkbox"/> If other, please specify: _____	
2. Have you or someone in your household participated in planning for the development of your village? Yes <input type="checkbox"/>	
3. Does your household have access to land for productive use in: Upland or hillside areas? <input type="checkbox"/> Lowlands? <input type="checkbox"/>	
4. Do you have access to water for production in: Wet season? <input type="checkbox"/> Dry season? <input type="checkbox"/>	
5. Have you experienced in the past year damage to your property or loss of crops or livestock due to flooding, landslides, erosion or a lack of water? No <input type="checkbox"/>	
6. Does your household grow vegetables during the: Wet season? <input type="checkbox"/> Dry season? <input type="checkbox"/>	
7. Do all members of your household eat animal source protein (meat, fish, frogs or insects): (a) At least 3 days a week? <input type="checkbox"/> (b) Every day? <input type="checkbox"/>	
8. Is there a period in the year when you have to skip or reduce or change your meals because of food shortages? No <input type="checkbox"/>	
9. What sources of income do you have? Sale of crops / livestock? <input type="checkbox"/> Processing or trading? <input type="checkbox"/> Employment? <input type="checkbox"/> Other? <input type="checkbox"/> If other, please specify: _____	
10. To help you in an emergency or sudden difficult situation, do you have access to: Savings? <input type="checkbox"/> Assets (or livestock) you can sell? <input type="checkbox"/> Village "rice bank"? <input type="checkbox"/> Emergency credit? <input type="checkbox"/> Other? <input type="checkbox"/> If other, please specify: _____	
<b>Total score:</b>	

<sup>8</sup> Each box ticked gets a score. For question 7 only one box (or none) can be ticked, not two. For question 7, if you answer yes for (a) you get 1 point and if you answer (b) you get 2 points. For the rest you get 1 point per box ticked. This would mean that the total maximum score would be 24 assuming we don't give different score weightings for certain questions.

**Attachment 1: Analysis of key risks, potential impacts, project interventions and resilience scorecard questions.**

The following matrix presents the summary analysis of the key vulnerability risks, their potential impact on the PICSA target groups, a summary of how the project interventions will address these risks and the associated scorecard questions aimed at monitoring changes in resilience.

Type of risk	Potential impacts	Project interventions	Resilience scorecard questions
Social networks / community organisations			
• Weak social networks & participatory community planning processes.	• Social exclusion & lack of support during crises, especially for ethnic minorities.	• Water User & Producer Group formation & training / capacity building. • Village participatory planning of project investments.	1 Are you or someone in your household a member of one of the following groups? Producer Group? <input type="checkbox"/> Water User Group? <input type="checkbox"/> Other? <input type="checkbox"/> If other, please specify. 2 Have you or someone in your household participated in planning for the development of your village? Yes <input type="checkbox"/>
Land & water			
• Lack of access to land & water for production. • Extreme weather conditions. • Inadequate O&M of infrastructure.	• Greater incidence of poverty due a limited land (& water) access, especially for people living in upland areas. • Flooding, land-slides & water-logging during wet seasons & water shortages during dry periods or droughts.	• Improve access to water for production in both lowlands & uplands, incl. climate proofing of infrastructure & other climate adaptation measures (see note on climate risk assessment & adaptation measures). • For landless poor, provide off-farm & other employment opportunities (addressed in Q11, below). • Training & capacity building for WUGs in O&M.	3 Does your household have access to land for productive use in: Upland or hillside areas? <input type="checkbox"/> Lowlands? <input type="checkbox"/> 4 Does your household have access to water for production during the: Wet season? <input type="checkbox"/> Dry season? <input type="checkbox"/> 5 Have you experienced in the past year damage to your property or loss of crops or livestock due to flooding, landslides, erosion or a lack of water? No <input type="checkbox"/>
Food security & nutrition			
• Limited crop diversity / heavy reliance on rice as the primary source of food. • Inadequate nutrition knowledge. • Cultural "taboos" in food consumption amongst ethnic minorities, especially for women & children. • Early marriage by girls.	• Extreme malnutrition & stunting, especially affecting woman & children.	• Support crop diversification, specifically increased vegetable production in both upland & lowland areas & in wet & dry seasons (several, interrelated interventions). • School-based nutrition interventions, incl. est. of gardens & ponds, preparation of healthy meals & training in nutrition, sanitation & hygiene. • Village group investments in various projects for improving nutrition & village level training on production of nutritious foods, healthy diets, household economy, food taboos, intra-household food distribution, women's workload, early marriages, teenage pregnancies, water sanitation and hygiene.	6 Does your household grow vegetables during the: Wet season? <input type="checkbox"/> Dry season? <input type="checkbox"/> 7 Do all members of your household eat animal source protein (meat, fish, frogs or insects): (a) At least 3 days a week? <input type="checkbox"/> (b) Every day? <input type="checkbox"/> 8 Is there a period in the year when you have to skip or reduce or change your meals because of food shortages? No <input type="checkbox"/>
Income, savings & emergency relief			
• Limited diversity of income sources & lack of savings / access to emergency relief.	• Lack of cash to address immediate needs during a crisis or to invest in recovering from a crisis / set-back.	• Several interventions to diversify and increase income and to make better investment decisions.	9 What sources of income do you have: Sale of crops / livestock? <input type="checkbox"/> Processing or trading? <input type="checkbox"/> Employment? <input type="checkbox"/> Other? <input type="checkbox"/> If other, please specify. 10 To help you in an emergency or sudden difficult situation, do you have access to: Savings? <input type="checkbox"/> Assets or livestock you can sell? <input type="checkbox"/> Village "rice bank"? <input type="checkbox"/> Emergency credit? <input type="checkbox"/> Other? <input type="checkbox"/> If other, please specify.

## **Attachment 2: List of additional or alternative questions.**

The following list of additional or alternative questions were also considered, which could still be adapted and included or replace those selected above.

Does the village headmen and the village committees contribute to the living conditions of your household?

Can you rely on support from your VDC?

Is your village a good village to live in?

Does your family have access to: rain-fed hillside lands?  irrigated hillside lands?  rain-fed land in the lowlands?  lowlands irrigated land?

Does your family: a) collect resources from forests?  b) use community grazing lands?

Do you have access to safe drinking water throughout the year? Yes

Do children in your family suffer from *diarrhoea at least once a week at certain times in the year*? No

Do you earn an income from: cultivation of lowlands in the wet season; cultivation of lowlands in the dry season; cultivation of sloped land in the wet season; cultivation of sloped land in the dry season; rearing of livestock; processing of agricultural products; products collected from the forest.

Are you able to save (cash or other)? Yes

Do you have reserves that you can use in case of an emergency or sudden difficult situation? Yes

Does one or more members of your household migrate for more than three months per year to earn money for the household?

Multi-stakeholder Platform? More reliable market relations? Do you have a good understanding with the buyers of your products?

Experience periodic water shortages?

[increased] crop diversification?

Access to (high value) vegetable crops?

Access to school meals?

Diversified income / livelihoods?

Diversity of assets?

Savings (>\$yy)?

[Improved / increased] Access to credit?

Involved in a business enterprise?

Employed?

[Improved / increased] Road access?

[Improved / increased] Market access?

Received training in .... ?



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## **Lao People's Democratic Republic**

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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 9: Integrated Risk Framework (IRF)**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



Risk categories	Risk Probability	Risk Impact	Mitigations/comments
1. Political and governance	Medium	Medium	<p>Country risk whether the Government is able to provide the resources and the resolve needed to strengthen the role of the Districts in accordance to its own Sam Sang policy.</p> <p>LogFrame assumption: Government maintains its support for a strong implementation role of the Districts (Sam Sang decree put to practice)</p> <p>Country risk whether civil servants continue for adequate periods of time in their positions</p> <p>LogFrame assumption: Adequate continuity in the positions and postings of government staff at all levels</p>
2. Macroeconomic	Medium	Medium	<p>Country and operational risk whether Government debt burden does not affect its capacity to finance the project loans and to commit to its counterpart funding.</p> <p>Mitigation: Include explicit text in the Financing Agreement on counterpart funding – including district levels – and loan recovery</p> <p>Macro-economic policy and trade relations with neighbouring countries may negatively affect prospects for commercial irrigated smallholder agriculture in target area</p> <p>LogFrame assumption: Economic and social stability in target provinces and districts</p>
3. Sector strategies and policies	Medium	Medium	<p>Operational risk whether rice self-sufficiency targets do not contradict policy directions on high value cropping and commercialisation of smallholder agriculture.</p> <p>LogFrame assumption: Production targets, if any, reflect policies of diversification and commercialisation</p> <p>Mitigation: Include Province, District and Village authorities in steering groups with concerned departments; include Province in SIS-mission wrap-up meetings</p> <p>Operational risk whether concerned entities coordinate their activities under the nutrition convergence approach.</p> <p>LogFrame assumption: Collaboration and commitment among agencies involved in national convergence approach</p> <p>Mitigation: Project funding for nutrition interventions is conditional upon concerted actions by nutrition convergence agencies</p>

Risk categories	Risk Probability	Risk Impact	Mitigations/comments
4. Technical aspects of project or program	Low	Low	<p>Operational risk of communities, agricultural production groups and water user groups not taking responsibility for the upkeep of the facilities procured with the help of the Project  LogFrame assumption: Communities assume responsibility for use, maintenance, and management of facilities invested in by the Project, as well as in recovery of related costs  Mitigation: Exit strategy included from the start in project design, emphasising ownership, joint responsibility and commitment to local economic development. Matching grant mechanism and close monitoring of investments made. Attention to establishing group rules and service fees (esp. water user groups)</p> <p>Operational risk of the Project funding ineffective investments in agricultural profitability and market linkage development  Mitigation: Involvement of senior expertise in key fields (irrigated agronomy, business development); support for capacity building in parallel to preparation of matching grant submissions; close monitoring and use of peer to peer extension methods (which is based on proven good practices)</p> <p>Operational risk whether enhanced and intensified agricultural production is not affected by labour shortage  LogFrame assumption: Greater local economic development results in a stabilisation or reduction of out-migration  Mitigation: Project invests in farm models that have a return on labour above the market rate</p> <p>Operational risk whether farmers / households / companies are willing to invest in matching grants and willing to pay for enhanced services  LogFrame assumption: Farm households and local enterprises are able to finance their part of the investment facility.</p>
5. Institutional capacity for implementation and sustainability	Medium	Medium	<p>Operational risk whether lack of capacity with respect to administrative processes affect implementation of technical activities  Mitigation: Financial and administrative support at all implementation-levels financed under the Loan.</p> <p>Operational risk whether implementation capacity of Districts is enough to meet the intensive support required to be given to communities and groups during PICSA implementation  Mitigation: Additional staff engaged for community facilitation and for specific technical fields of work</p>

Risk categories	Risk Probability	Risk Impact	Mitigations/comments
6. Financial management	High	High	IFAD funded projects in Lao PDR usually require considerable time to set-up appropriate financial management systems due to the low capacity of financial management staff. This limits the performance of the projects and consequently results in a lack of automated financial reporting, which at the beginning is normally done manually and reporting relies on excel spreadsheets, adversely impacting the accuracy, timeliness and efficiency of financial information. An off-the-shelf software has to be introduced from the very beginning of the project with intensive training to improve the accounting and financial reporting of the project.
7. Procurement	High	High	Operational risk whether decentral implementation levels can correctly handle procurement processes, Mitigation: Financial and administrative support at all implementation-levels financed under the Loan. Clear guidelines on procurement procedures; Procurement packages are kept small.
8. Stakeholders	Low	Low	<p>Operational risk whether market partners are willing to source products from project area  LogFrame assumption: Private investors are interested in investing in business opportunities in smallholders agriculture along conditions promoted by the project  Mitigation: Identification of potential market partners above District level supported by clear communication and a matching grant facility</p> <p>Operational risk whether concerned departments co-operate in development of market linkages and profitable agriculture; as well as in the nutrition convergence approach  LogFrame assumption: Collaboration and commitment among agencies involved in national convergence approach and in promoting commercialisation of smallholder agriculture  Mitigation: Include Province, District and Village authorities in steering groups with concerned departments. Project funding for nutrition interventions is conditional upon concerted actions by nutrition convergence agencies</p>

Risk categories	Risk Probability	Risk Impact	Mitigations/comments
9. Environment and social	Medium	Medium	<p>Operational risk of environmental impact, land appropriation and compensation issues for investments in infrastructure        Mitigation: IFAD to be informed whether SRIWMSP investments in irrigation works and roads comply to ADB safeguards; IFAD supports PICSA investment in minor irrigation infrastructure and last-mile roads but only investments that do not require land acquisition are eligible; PICSA infrastructure investments to be planned by Districts and Villages under conditions of no appropriation of land, guarantees for proper management and inclusive targeting.</p> <p>Operational risk that agricultural intensification may coincide with a greater use of pesticides, herbicides, chemical fertiliser and plastics.        Mitigation: PICSA will promote the use of organic fertilisers, pest and weed control, which are already practiced. Market opportunities exist for expanding organic production of high value crops. Extension efforts that will accompany the intensification will focus on minimizing potential negative impacts arising from intensification.</p> <p>Country risk that weather extremes affect the productive potential of (part of) the project area        Mitigation: PICSA includes measures to avoid, adapt to or mitigate the specific climate risks (see section 3.J of the PDR).        LogFrame assumption: Sound disaster risk management and disaster response.</p>
Overall	Medium	Medium	



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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex 10: Exit Strategy**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



## Annex 10: Exit and Scaling Strategy

1. Reference is made to sections 2.G.h and 4.L of the main text. The PGT is responsible to use its growing understanding of the Project and of what works well and what works less well to define and refine the PICSA Exit and Scaling Strategy.
2. The PICSA management's thinking on sustainability is shaped by the development – during the course of the project – of an exit strategy and a strategy for scaling-up and scaling-out project achievements. Together, these strategies address three questions:
  - (a) Exit strategy – What needs to be done to ensure the Project is successfully completed?
  - (b) Scaling strategy (scaling-up) – What needs to be done to ensure the benefit flow of the Project increases during and beyond the course of the Project?
  - (c) Scaling strategy (scaling-out) – What needs to be done to apply Project's successes elsewhere?
3. Zero Version. The Project's Exit and Scaling Strategies needs to be refined in the course of the Project, taking benefit of lessons learned on what works and what doesn't; while gradually shifting focus from sustaining Project benefits to scaling-up and scaling-out those benefits. To facilitate the PGT in further elaborating the Exit and Scaling Strategies; this annex suggests includes five draft strategies.
  - (a) Exit strategy 1 – ownership. The first constituent strategy is securing ownership of project interventions at all levels. Benefiting household-, group- and enterprise contributions are matched by Project subsidies. Leadership and decision-making by village, District and Provincial authorities is matched by prioritised investments by the Project.
  - (b) Exit strategy 2 – partnership. PICSA requires farmers to invest as groups. Village authorities and Districts work jointly in group identification and formation; with the former focussing on inclusiveness and the latter on technical quality. District and Provincial Departments converge in their tasks in connection with nutrition; and in linking markets to agricultural opportunity.
  - (c) Exit strategy 3 – commitment. PICSA's overall objective goes beyond 'producing more' or 'feeding better'. The aim of inclusive and sustainable local economic development – if earnestly communicated and practiced by the Project – places a responsibility on stakeholders to work for the greater good of their community. This defines the Project as a technical undertaking with a socio-economic drive.
  - (d) Scaling strategy 1 – irrigation policies. The Project's knowledge management will focus on contributing lessons from experience to the national debate on irrigation management policy. The Project will contribute to national learning with respect to the 2012 Irrigation Law and its application;
  - (e) Scaling strategy 2 – modular project design. PICSA is set-up to help make intensified agriculture the driver for inclusive and sustainable local economic development. It does not invest in large infrastructure, but seeks to enable the target group to use of opportunities for betterment. PICSA is designed to accompany a Project with investments of scale and the concept can easily be added-on to similar infrastructure projects, as well as be applied in situations where such investment is not available.



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### **Partnerships for Irrigation and Commercialisation of Smallholder Agriculture (PICSA)**

#### **Project Design Report**

#### **Annex: PICSA Finance Management Manual**

Document Date: 22/07/2019

Project No. 2000001892

Asia and the Pacific Division  
Programme Management Department



**Partnerships for Irrigation and Commercialisation of  
Smallholders Agriculture Project (PICSA)**  
*IFAD Loan No.*

**Finance Management Manual**

Vientiane, Lao PDR  
April 2019

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## **ABBREVIATIONS**

ADB	Asian Development Bank
BOL	Bank of Lao
CAS	Computerised Accounting System
EA	Executing Authority
DAFO	District Agriculture and Forestry Office
DPIT	District Implementing Unit
FMM	Finance Management Manual
IFAD	International Fund Agriculture Development
IPSAS	International Public Sector Accounting Standards
LWU	Lao Women Union
MAF	Ministry of Agriculture and Forestry
MoF	Ministry of Finance
PAFO	Provincial Agriculture and Forestry Office
PICSA	Partnerships for Irrigation and Commercialisation of Smallholders Agriculture Project
PGT	Programme Governance Team
PPIT	Project Implementing Unit
PV	Payment Voucher
RFSP	Rural Financial Services Programme
SOE	Statement of Expenditure
YTD	Year to Date

# **1. BACKGROUND**

Project objectives. The Goal to which PICSA contributes is enhanced livelihood resilience and sustainability within the Project intervention area. The Development Objective – to be attained by the beneficiary communities using the outputs provided by the Project – is sustainable and inclusive local economic development.

IFAD overall and country-specific results framework. PICSA contributes to IFAD's strategic objectives of increased production; increased market participation; greater resilience; and mainstreaming of priorities (gender & social inclusion, youth, nutrition, environment & climate). It contributes to the 2018-2024 COSOP: adoption of climate smart technology for production diversity (1.2); increased productivity (1.3); diverse, nutritious and safe diets (1.4); increased cash value of agricultural and livestock products from smallholders (2.2) and rural youth employment (2.3).

# **2. INTRODUCTION**

This Finance Management Manual (FMM) is aimed at giving the finance staff of the project basic accounting procedures to follow in performing their work duties in compliance to IFAD's requirement. The FMM should be distributed and followed by all project management and finance staff that are likely to originate financial transactions including the provinces and districts. It should assist the individuals concerned in allocating correct account codes to income sources and expenditure items and also assist PGT in implementing the computerised accounting system.

A Computerised Accounting System (CAS) is maintained by the Project Governance Team (PGT) at the Ministry of Agriculture and Forestry (MAF). The Provincial Project Implementing Team (PPIT) maintains a cashbook by using excel spreadsheet consolidating project expenditures incurred by the District Project Implementing Team (DPITDPIT). At the end of every month, PPIT submits the cashbook summary plus original supporting documents to PGT. The project follows a standardised chart of account and the accounting forms have been designed and provided in the attached Annex 3.

The objective of the computerised accounting system is to incorporate financial information from all Cost Centres (PGT, PPIT, DPIT, Government and Beneficiary Contribution) and ultimately consolidate them into common sets of financial statements based on the format provided by IFAD (refer Annex 2).

# **3. THE PROJECT**

## **3.1 Project Cost and Financing**

The duration of PICSA is six years with an intended start in January 2020. The total investment is estimated at USD 29.36 million. The draft budget, including a funding gap, is shown in **Annex 1**. PICSA requires external financing of USD 20.9 million or 71% of total costs. This includes USD 11.4 million (55%) for Component 1: Intensified Agricultural Development; USD 5.6 million (27%) for Component 2: Value

Chain Development; USD 1.5 million (7%) for Component 3: Improved Nutrition Practices. Project management requires USD 2.4 million (11%). The proportion of project management costs would be higher, if additional funding is not provided. PICSA is part of a larger programme with a total outlay estimated at USD 117 million with ADB, EU and GCF contributing USD 34.7 million (30%), USD 4.5 million (4%) and USD 46 million (40%) respectively. National resources (Government, private sector, beneficiaries) contribute around 8% (See Annex 1).

## 3.2 Component/Outcome and Activities

**Component 1 – Intensified agricultural development.** This component prepares and assists local authorities and farmer groups to optimise and sustain productive use of natural resources, by enabling, promoting and starting-up agricultural intensification in areas where conditions allow (esp. in and around irrigated and irrigable lands).

**Output 1.1- District staff and village authorities trained.** The Project builds the capacity of district technical staff and of village committees. Capacity building supports the decentralisation policy (Sam Sang). Village Heads and Committee members and District staff will be trained on the objectives and working procedures of the Project. They are partners in project planning, implementation and monitoring. The training strengthens their partnership and coordination.

**Output 1.2 – Water User Groups (WUG) trained.** This aims to enhance productivity and profitability of irrigated farming and the sustainability of irrigation systems. WUG executive committees will be trained on operation, maintenance and system adaptations; on internal rules and on administration. Experts on O&M and irrigation agronomy help improve performance of irrigation systems and prepare WUGs for submitting proposals for agricultural intensification (Output 1.4).

**Output 1.3 – Extension Services provided.** Knowledge on improved agricultural practices and technology is required to make farmers' investments successful. Existing technical support by Districts will be supplemented by (i) project-hired technicians and extension agents; (ii) private extension agents and service providers; (iii) partnerships between farmer groups and the private sector; and (iv) farmer-to-farmer exchanges. Sustainable Land Management / Climate Change Adaption (SLM/CCA) model productions will be established at farm level, to serve as hubs for local introduction of well-established intensive production systems. Extension stimulates farmer groups to submit for agricultural intensification (Output 1.4).

**Output 1.4 – Farmer Group Investment Facility established.** The Farmer Group Investment Facility enables groups (farmer groups, WUGs) to draw on Project resources for capacity building, minor infrastructure investments and input packages for agricultural intensification. The facility supports investment in line with recipients' financial capacity.

**Component 2 – Value chain development.** This component promotes further commercialisation of smallholder agriculture by enabling, promoting and starting-up market linkages that benefit smallholder farmers.

**Output 2.1 Multi-Stakeholder Platforms (MSPs) established.** The MSPs aim to improve value chain governance by enhancing coordination and by strengthening relationships between actors within selected value chains. This starts with identification of priority commodities and includes identification of challenges, development of mutual understanding, definition of roles and joint actions.

**Output 2.2 Agribusiness Investment Facility established.** The Agribusiness Investment Facility (AIF) supports small and medium agro-enterprises to enhance their business skills and to invest with support from a start-up facility. Enterprises are required to contribute either from their own capital or from formal credit. Furthermore, the facility will target youth to start business in farming, transport, processing, storage, trade and related field in support of the value chain development.

**Output 2.3 – Access improved.** This output aims to provide last mile connectivity beyond the 15 irrigation commands supported by SRIWMSP. PICSA contributes to improved access conditions for smallholder farmers, by (i) co-investing in basic village to farm access tracks implemented by farmer groups; (ii) Investing in village to village access tracks, which will be implemented by contractors procured at District level.

**Component 3. Improved nutritional practices.** This component promotes improved dietary intake among nutritionally vulnerable groups. Efforts to increase availability and accessibility of food with high nutrient value are accompanied by nutrition education. Nutrition interventions are carried out in Xayaboury and Luang Prabang Provinces, similar to EU-funded SRIWMSP activities in Xieng Khouang and Houaphan. Nutrition interventions are complementing nutrition activities of partners and are in support of the National Nutrition Strategy and Action Plan.

**Output 3.1: School-based nutrition interventions established.** In (primary and lower secondary) schools, gardens and where possible ponds with fish and frogs will be established to produce ingredients for healthy meals and to educate pupils, parents and teachers. Members of the Lao Women Union (LWU) will be engaged in preparation of meals for pupils and pre-schoolers. Nutrition education includes sanitation and hygiene.

**Output 3.2: Increased dietary intake and improved dietary quality** for nutritionally vulnerable groups. Nutrition interventions under PICSA are aligned to the Lao PDR National Nutrition Strategy to 2025 and Plan of Action 2016-2020. Supporting the convergence approach by addressing nutritional challenges in a multi-sectoral manner includes support to District Nutrition Committees and Village based nutrition groups and committees. Agricultural and health extension agents will promote food production and nutrition knowledge and train Village Nutrition Teams. Nutrition education addresses entire households and cover nutrient requirement, healthy diets, household

economy, food taboos, intra-family food distribution, women's workload, early marriages, teenage pregnancies, water, sanitation and hygiene.

## 4. ACCOUNTING PRINCIPLES

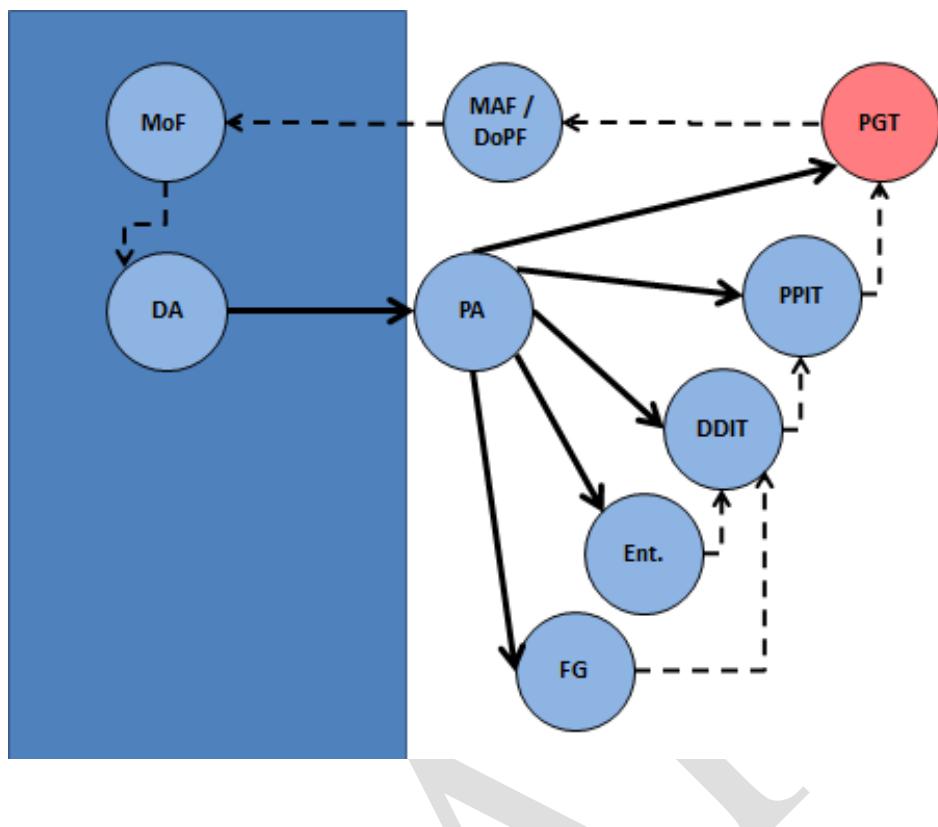
The following accounting principles used for the Partnerships for Irrigation and Commercialisation of Smallholders Agriculture Project (PICSA) is based on IPSAS Cash Basis as follows:

- Double entry accounting principle is used for recording accounting transactions
- Accounts Receivables and Payables are recorded off the system and tracked by using spreadsheet.
- Sources of fund and expenditures of the project are accounted for on a cash basis.
- Accounting period is based on budget year of the project starting from 1<sup>st</sup> January to 31<sup>st</sup> December.
- Currency for accounting is USD and KIP. Transactions occurred in KIP are converted into USD based on the rate of the day of withdrawal. Loss and gain on exchange rate are accounted for in the Sources and Uses of Funds Statement.
- Expenditures paid directly by IFAD are incorporated in the CAS.
- Expenditures paid from designated accounts and sub accounts are incorporated in the CAS.
- Lao Government and Beneficiary Contributions in cash and in kind are included in the Sources and Uses of Funds Statement.
- Project expenditures for investment costs such as equipment, vehicle, furniture, civil works etc. are treated as expenses for the period.
- Fixed Asset Register is used for keeping track of project fixed assets.

## 5. FUND FLOW ARRANGEMENTS

The Ministry of Finance (MoF) maintains and operates a Designated Account (DA) denominated in US dollars in the Bank of Lao PDR to receive the loan proceeds. The DA is administered following imprest account arrangements, in which an initial amount of the loan is advanced and then replenished periodically based on justified expenditures. The maximum advance provided by IFAD to the DA is established as an Authorised Allocation (AA) in the LTB. The AA to the Designated Account is foreseen as USD 2 million and may be amended by IFAD during the course of Project implementation.

**Figure 1 and 2 : Fund Flow**



## Flow of Funds

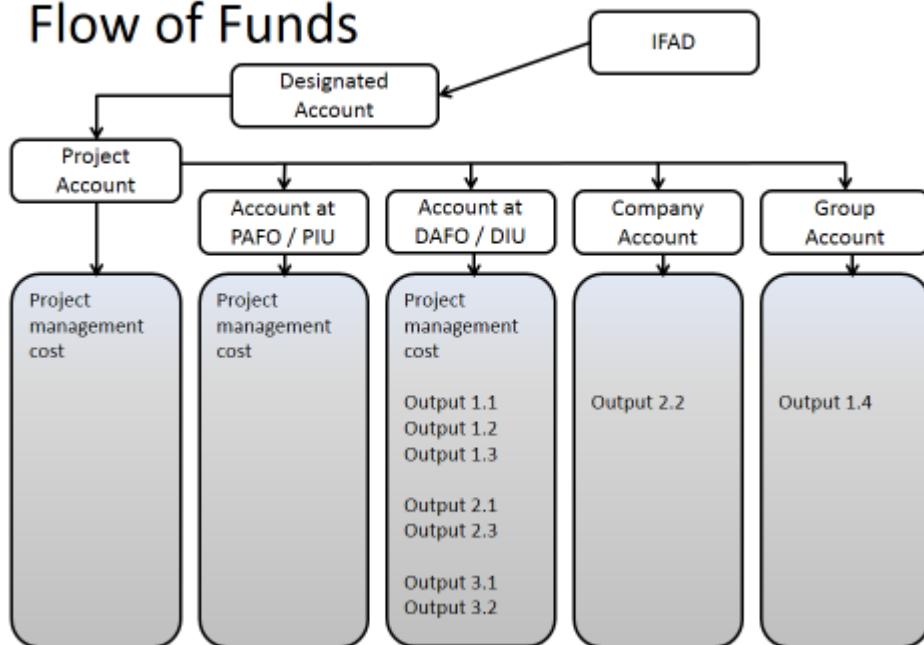


Figure 1 and 2: presents the flow of funds from IFAD to the Government of Lao.

### 5.1 Disbursement – Funds flow

IFAD funds (except direct payments made by IFAD) are transferred to the project's Designated Account (DA), managed under imprest arrangements by the National Treasury (MOF) at the Bank of Lao (BoL) in USD.

The PGT maintains a Project Account (PA) in Lao Kip (LAK) in a commercial bank for day-to-day project management operations. The PA shall be funded and replenished as necessary from the Designated Account. Requests for transfers, including supporting documents, shall be forwarded from the PGT to MoF via the MAF Department of Planning and Finance (DOPF), as per the standard practice in GoL.

The Provincial Agriculture and Forestry Offices (PAFOs) and the District Agriculture and Forestry Offices (DAFOs) maintain institutional project bank sub-accounts in commercial banks for day-to-day project management operations and specific investment activities of the PPITs and DPITs. The project sub-accounts are funded and replenished on a monthly basis from resources held in the Project Account, upon approval and request from the PPIT to PGT, via DOPF. Transfers to the Project sub-accounts are treated as Advances (Accounts Receivable) and registered in the accounting software.

PPITs and DPITs will submit monthly reports and supporting documentation to the PGT for the liquidation or replenishment of the advances provided. Original supporting documents shall be kept on site for verification of the PGT periodically. The advance threshold is based on a monthly estimate of expenditures and won't exceed the following thresholds. These thresholds may be amended during the course of Project implementation.

	Advance threshold for Project accounts (USD)
PGT (1)	300,000
PPIT (4)	5,000
DPIT (19)	2,000

For the implementation of the investment facilities (matching grants) at the District level, upon receiving complete and sufficient documentation from the DPITs, the PGT requests via DOPF the transfer of funds from the PA account directly to the enterprises and farmer groups targeted by the project. Direct, rather than cascading fund flows help maintain the pace of implementation.

## 5.2 Government Contribution

The Government contribution to PICSA covers salaries of Government staff assigned to the project, taxes and duties and the cost of the project's premises.

The Government contribution will be incorporated in the Annual Work Plan and Budget (AWPB) cycle for all PPITs and DPITs and is consolidated at the PGT level. The MoF will pay the salaries of Government staff assigned to the project on a monthly basis following its own procedures (check). The PGT will establish appropriate procedures with MoF to receive monthly reports of payments under the government contribution to quantify and register it in the accounting software of the project.

Output 1.2 Agribusiness Investment Facility and Output 1.5 - Farmer Group Investment Facility. As part of this mechanism, the farmer groups and private providers will contribute a counterpart fund established in their investment plans. This counterpart fund will have to be deposited in the Company account or Group account in which the matching grant will be received. This counterpart funding is part of the eligibility criteria for the grant.

The beneficiary contribution could also be in-kind, for which the Investment Fund managers – be it the PPIT or the DPIT – will ensure that the counterpart funding in-kind is quantified and measured at fair market value and in compliance with the criteria of eligibility of the matching grants.

The Beneficiary contribution (cash and in-kind) will be incorporated in the Annual Work Plan and Budget for all PPITs and DPITs and consolidated at the PGT level. Similar to the Government contribution, the PGT will ensure that the Beneficiaries contribution is accounted and registered in the accounting software of the project.

### **5.3 Government Taxes**

PICSA will ensure that all applicable taxes are always deducted from the invoices and paid from government resources. PICSA will apply a consistent approach across all cost centres of the project for a proper implementation of this. PICSA will ensure that every transaction accounted with tax exemption is registered properly in the accounting software of the project.

IFAD funding cannot be used to pay indirect taxes such as the goods and services taxes or the value-added tax (VAT). However, in line with IFAD General Condition the payment of taxes is permitted provided that the Borrower has informed IFAD in writing that it is impossible or impractical to exempt the project from certain taxes. This is subject to IFAD's policy of requiring economy and efficiency in the use of its Financing. Therefore, if the Fund at any time determines that the amount of any such Tax is excessive, discriminatory or otherwise unreasonable, the Fund may, by notice to the Borrower, reduce the percentages of Eligible Expenditures to be financed by the Financing which are specified in the Financing Agreement.

### **5.4 Expenditure Approval/Payment Flow**

The procedures for expenditure approval and payments are as follows:

1. Based on the annual approved budget work plan (ABWP) by the IFAD, the PGT, PPITs and DPITs has the authority to incur expenditures within the budget ceiling of each Component.
2. When invoices are received from the suppliers, the accountant prepares payment vouchers (PV).
3. The Project Coordinator/PPIT/DPIT Coordinator approves the PV.
4. The cheque is then raised and signed by the PPIT/DPIT Project Coordinator.
5. The Project Accountant records the expenditure transactions into the computerised accounting system.

## **6. AUTHORISATION**

### **General conditions for authorisation**

Allocated authorisation must always be exercised within the frame of:

- Financing Agreement
- Project Implementation Manual (PIM)
- Stated regulations and contract agreements
- Organisational position and job description
- Approval work plan and budget.

The PGT/PPIT/DPIT Coordinator has the authority to incur project expenditures and approve payments from the sub bank account.

### **Types of authorisation**

#### **1) Authorisation for signing agreements/contracts and making decisions for purchasing.**

Approval (signing the document) means:

- The agreement/decision is within the agreed work plan and budget
- The agreement/decision follows the stated regulations, policy and guidelines of the project
- The budget line (account number) is correct
- The supporting documents are complete
- The required controls have been performed e.g. tendering, quotations etc.
- That he/she is responsible for the decision

#### **2) Authorisation for withdrawal of funds from a bank account (signing cheques) must always be preceded with control that:**

- The payment is correct (the amount on the PV corresponds to the supporting documents).
- The supporting documents are complete and correctly authorised.

## **7. WITHDRAWAL APPLICATION**

PICSA's withdrawal of funds and its use of loan proceeds are governed by the IFAD's Loan Disbursement Handbook (LDH). Applicable procedures of disbursement, financial reporting and maintenance of appropriate project records are described in detail in a Letter to the Borrower, once the Financing Agreement between IFAD and the Government of Lao PDR has entered into force.

An online guided overview of IFAD financial management practices and procedures is available for PICSA staff<sup>1</sup>. PICSA staff is encouraged to avail of this training to ensure an efficient disbursement and an appropriate fiduciary control.

Three standard disbursement procedures are available for PICSA's withdrawal of financing:

<sup>1</sup> <https://www.ifad.org/web/knowledge/publication/asset/39631355>

- Advance withdrawal
- Direct payment
- Reimbursement

**Advance withdrawal.** The Advance withdrawal is foreseen to be the principal method to be used for the disbursement of PICSA. The main conditions precedent to withdrawal the initial advance from the Loan Account to the Designated Account (DA) of the Project are: (i) evidence that the DA has been opened; (ii) authenticated specimen signatures of each authorised person that will operate the DA; and (iii) sufficient evidence of the authority of the persons who will sign the withdrawal applications on behalf of the government.

The **PGT** ensures a proper cash flow from the Loan Account to the DA to ensure the implementation of the project is not hindered. PICSA will use the **IFAD Client Portal (ICP)** for the submission of withdrawal applications.

To justify advances and seek reimbursements PICSA supports its Withdrawal Applications by using the **Statements of Expenditure (SOE)** facility, supported by an adequate accounting system, sound internal controls and audit procedures. The **SOE threshold**, foreseen as **USD 50,000**, will be established in the LTB and could vary during Project implementation.

Supporting documents and records for the expenditures claimed under the SOE facility should be maintained and be readily available for review by IFAD's supervision missions and external audits. The PGT will be responsible to ensure the SOEs are elaborated in accordance to IFAD requirements. Withdrawal applications for contracts or invoices with amounts higher than the SOE threshold must be accompanied by copies of relevant supporting documents evidencing eligible expenditure.

**Direct payments.** The procedure of disbursement through Direct Payments will need to be accompanied by a signed copy of the contract and relevant supporting documents evidencing the eligibility of the expenditure.

Reimbursement??? Possibly applicable if the FISP PFF is used. I think?

## 7.1 Replenishment of Sub Bank Accounts

The ceiling for sub bank accounts are: PPIT 5,000 and DPIT 2,000. This amount is advanced from the Designated Bank account. When the funds in the sub bank accounts are drawn down by **30%**, PGT requests via DOPF the transfer of funds from MoF directly from the DA to the sub accounts and enterprises and farmer groups targeted by the project. The detailed expenditure summary is attached to the request.

## 7.2 Replenishment of Designated Bank Accounts

The float ceiling for DA is USD100,000. PGT is responsible for submitting withdrawal applications through MoF to IFAD for disbursements when the funds are drawn down by **30%**. The following forms must be prepared:

**FORM 100/A** – Application to Initiate Withdrawal from the Designated Account signed by the authorised individuals.

**FORM 100** - Application for Withdrawal signed by the authorised individuals.

**FORM 101**- Application Summary Sheet with supporting documentation covering the expenditures above the SOE threshold.

**FORM 102/A** – SOE covering the expenditures below the SOE-threshold (required for each category of expenditure, with subcategory indication where necessary)

- Form 104 (104/A for imprest account and 104/B for revolving fund)** - Designated Account Reconciliation Statement accompanied by a) Bank statement(s) of the DA and b) Statement(s) of any other operating/district/project accounts.

**C10 Register of contracts** - To be included in the WA. It contains references to the Procurement plan/AWPB for each contract.

**C11 contract monitoring form** - Mandatory for each contracts with more than one payment.

**Form 105 checklist**

### 7.3 Direct Payment

**Direct payments.** The procedure of disbursement through Direct Payments (**Form 101**) will need to be accompanied by a signed copy of the contract and relevant supporting documents evidencing the eligibility of the expenditure.

## 8. INTERNAL CONTROL SYSTEM

Designing, Installing, and maintaining a system of internal financial control is an integral part of the Financial management function. Internal financial controls aim to ensure) efficiency, ii) reliability, of financial reports and iii) compliance with applicable laws and regulations including the conditions set forth in the financing agreement. The key features of the internal control system are summarised below:

- Segregation of duties;
- Authorisation;
- Reconciliations and checks;
- Restricted access; and
- Monitoring and review.

The financial staffing of the project both at the PGT and the PPIT/DPIT requires staffing of at least one accountant and one cashier.

For internal control purposes, it is crucial that there is segregation of duties between the project staff as follows:

- The person authorising payments must not be involved in the financial processing activities.
- The cashier shall not be involved in recording/reporting expenditures and verification of cash counts.
- The accountants shall not handle cash.

The financial duties and responsibilities of the project accountants, PPIT/DPIT accountants and cashier are provided as follows:

### **8.1 Duties of Project Accountants at PGT**

- Maintaining Project's Computerised Accounting Systems
- Payment of invoices
- Bank reconciliation
- Advance and receivables reconciliation
- Provide training to the PPIT/DPIT accountants
- Produce financial reports on a monthly, quarterly and yearly basis and sent to the IFAD and the government.
- Replenishment of Designated bank accounts
- Replenishment of PPIT/DPIT sub-accounts
- Liaise with the external auditors.
- Apply for tax exemption to MoF for all procurements
- Consolidate fixed asset register for the Project
- Maintain contract management register for the Project
- Maintained logbooks on project vehicles.

### **8.2 Duties of PPIT/DPIT accountants**

- Payment of invoices
- Produce expenditure summaries at the end of every month to be submitted to PGT for inputting into the computerised accounting system
- Bank reconciliation
- Maintain fixed asset register
- Maintain contract management register for their own province
- Maintained logbooks
- Prepare replenishment requests to PGT

### **8.3 Duties of Cashiers**

- Maintaining petty cash
- Reconciliation of petty cash on hand
- Produce petty cash expenditure summaries for replenishment

## 9. CHART OF ACCOUNT

### Account Grouping

The designated chart of accounts is aimed at covering all sources of funds, income and expenditure accounts of the Project.

The accounting system consists of the following four data group/classes:

**Assets**

**Source of Funds**

**Expenditures**

**Liabilities and Funds**

The Chart of Account consists of 8 **digits** as follows:

**Account No.: XXXXX-A-BB**

Where **X** being the **Account Codes**

**A** being the **Fund Source**

**BB** being the **Province/District Code**

1) **Account Classes Code (X)**

- Class 1 = Assets
- Class 2 = Funds and Liabilities
- Class 3 = Sources of funds
- Class 4 = Expenditures
- Class 5 = Retained Earnings

2) **Account Element Codes (xxxxxx)**

The six digits represent the actual account element code, for example, the same code will be used for office supply regardless of the project Fund Source/Province/Districts.

3) **Project Component Code (A)**

- 1 = IFAD Loan
- 2 = Beneficiaries
- 3 = Government

4) **District/Province Segment Code (BB) segment**

<b>01 PGT</b>	15 DPIT Nan
<b>02 PPIT LPB Huaphan</b>	16 DPIT Xieng Nguen
03 DPIT Sam Neua	17 DPIT Luang Prabang
04 DPIT Aed	18 DPIT Chomphet
05 DPIT Sobba	<b>19 PPIT Xayaboury</b>
06 DPIT Viengsay	20 DPIT Thongmixay
<b>07 DPIT Xieng Kho</b>	21 DPIT Saysathanh
<b>08 DPIT Sam Tay</b>	22 DPIT Sayaboury
<b>09 PPIT Xieng Khouang</b>	23 DPIT Phieng
10 DPIT Pek	24 DPIT Paklaiy

11 DPIT Khoun	
12 DPIT Kham	
13 DPIT Phaxay	
<b>14 PPIT Luang Prabang</b>	

### **Account Headings**

The chart of accounts has four main groups of headings:

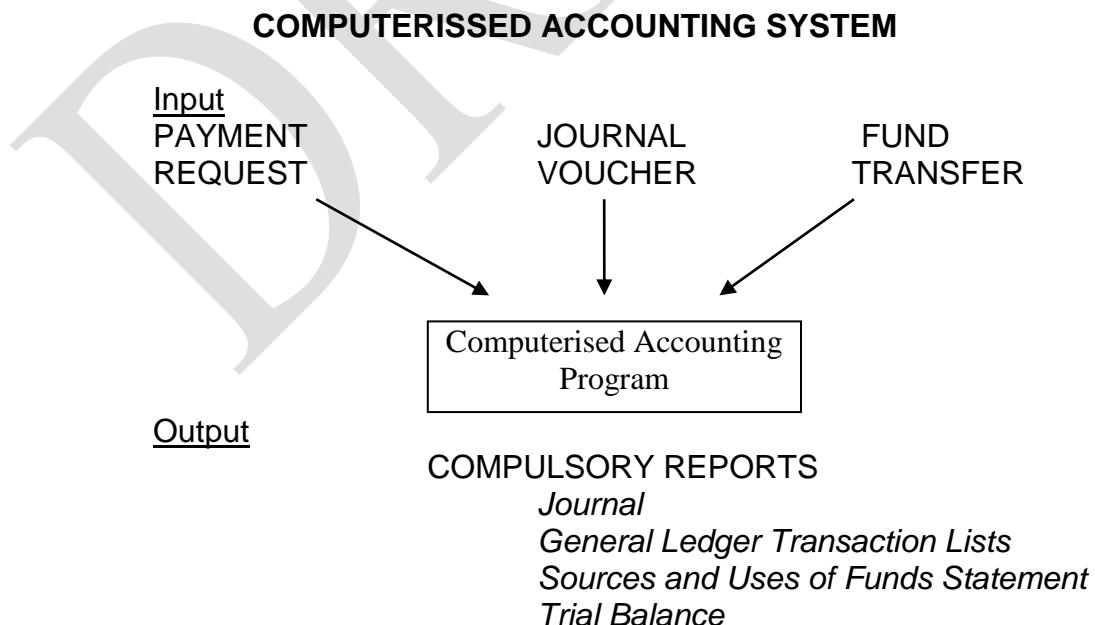
- |               |                              |
|---------------|------------------------------|
| <b>100000</b> | <b>Assets</b>                |
| <b>200000</b> | <b>Funds and Liabilities</b> |
| <b>300000</b> | <b>Sources of funds</b>      |
| <b>400000</b> | <b>Expenditure</b>           |
| <b>500000</b> | <b>Retained Earnings</b>     |

The chart of account should be strictly followed by the project staff in allocating correct account codes to income source and expenditure items in order to obtain accurate financial information from the computerised accounting system.

The role of managers and financial staff in correctly allocating income source and expenditure codes are very vital. The entire accounting system and the quality of the financial report it produces is dependent on the accuracy of the allocation of these account codes.

## **10. ACCOUNTING SYSTEMS**

Computerised accounting system processes the accounting information inputted into the system and it presents this information in the form of computer listings and financial reports. A description of the system is described below.



## **10.1 Financial Processing**

All expenditures incurred by the project at the PGT, PPITs, DPITs, Government and Beneficiary contributions, and direct payments made by IFAD must be incorporated in the central computerised accounting system.

At the beginning of every month, the PPITs shall provide a cashbook summary of all expenditure transactions for the month and forwarded to the PGT for inputting in to the computerised accounting system. The original documents and receipts should be attached to the summaries.

Project records and accounts will be maintained centrally in the PGT office. The supporting documents will be made available for subsequent audit by an independent external auditor and review by IFAD.

The Project accountant input accounting information into the computerised accounting system from the following documents:

1. Payment Voucher (**Annex 3, Table 1**)
2. Cashbook summary from the Provinces (**Annex 3, Table 2**)
3. Journal Voucher for any adjustments entries (**Annex 3, Table 3**)
4. Advance/Expenditure Summary (**Annex 3, Table 4**)
5. Petty Cash Summary (**if applicable**)

### **Exchange Rate:**

The exchange rate to be applied in converting KIP expenditures to USD is to use the rate of the day of fund withdrawal.

## **10.2 Issuing Payment Vouchers**

Payment Vouchers must be issued for every expenditure transaction made from the **sub bank accounts**.

Relevant supporting documents must be attached to the Payment Voucher for justification of expenditures such as:

- Invoice
- Activity Budget Form/Purchase Order
- Quotation
- Contracts etc.

## **10.3 Filing**

The filing of documents should be maintained in the following logical order:

1. Payment Voucher
2. Budget Activity/Purchase Order Form
3. Supporting Invoices
4. Contracts etc.

Payment Vouchers should be filed in the voucher *number sequential order*.

The Project Accountant shall set up the following files:

1. Payment Vouchers
2. Reconciliations
3. General Ledger Listing
4. Financial Reports
5. Petty Cash
6. Bank Statements
7. Advances and Receivables

For summary of advances, it is important that the supporting receipts attached to the summary are filed in voucher numerical order. For instance, on the summary sheet, cross-referencing numbers should be made to the attached original receipts or invoices.

## **10.4 Petty Cash**

In cases of emergencies and minor purchases it is necessary for PGT/PPIT/DPIT to have access to petty cash.

This means the petty cash holder can make payments without raising the Payment Voucher, but approval must be obtained from the PPIT/DPIT Coordinator for each expenditure item paid. The Petty Cash Voucher should be used for every petty cash transaction.

Petty cash shall have a **fixed amount float/ceiling of 5,000,000 Kip** for PGT and **2,000,000 Kip** for PPIT. That is: the total number of payments made and the remaining cash balance is always equal to the total amount of petty cash float.

The cash should be kept in a safe to which only the cash holder has access to the cash and who is the only person holding the key.

When replenishment of the cash is needed, the cash holder should make a summary of the receipts and invoices and submitted to the accountant for replenishment.

In no circumstances should the cash holder have the duty or functions of processing the accounts, handles the bookkeeping or perform any other accounting duties. This is to prevent possible bookkeeping manipulation and misuse of Project funds.

The Finance team from PGT will arrange periodic cash verification with reference to relevant cashbooks and periodic surprise cash count.

## **10.5 Cash Advances**

Payment Voucher for advances shall be raised and approved before payment is made. The following supporting documents are required:

Advance for field trip:	Approved activity work plan/budget
Other Advances:	Proforma Invoice
	Purchase Order
	Quotations

The advance holder (person receiving the money) shall sign on the receipt for the amount of money received. This receipt should later be attached to the advance summary when acquitting the advance.

**The advance holder is personally responsible for the money and also for summarising (acquitting) the advances.**

Directly after returning from the trip, the advance shall be summarised and acquitted no later than 10 days.

The summary has to be done by the **advance holder**. The form enclosed in (**Annex 3, Table 4**) should be used and all original receipts should be attached.

The summaries shall be signed by the advance holder and certified by the accountants. Any surplus balances - money not spent should be returned to the Finance Office for depositing back into the bank account.

**Reconciliation of the advance account in the general ledger** shall be made by the Project accountant on a periodical basis, at least at the end of every month. The outstanding advance listings shall be prepared. Old outstanding advances more than **three months** should be promptly followed up.

## **10.6 Travel Allowances**

Travel allowance for domestic travel is based on the Lao government established rates.

For domestic or international travel, the **Travel Budget (Annex 3, Table 5)** and **Per Diem Allowance** forms (**Annex 3, Table 6**) must be completed and approved. This form must be attached to the Payment Voucher when requesting for cash advances. The advance payment shall be made strictly in accordance to the approved budget plan.

Travel advances shall be acquitted without delay. No further advances shall be rendered without the settlement of prior advances.

# **11. ACCOUNTING SYSTEM FOR PPITs and DPITs**

The accounting system for PPITs/DPITs are done manually whereby all expenditures are recorded in the daily cashbook. Sample cashbook format is provided in **Form 17**.

Expenditures for operating costs which include activity costs, fees, travel costs, office expenses etc. are paid from the PPIT sub-accounts. At the end of every month, the Provincial Offices submit expenditure summaries to PGT.

## **11.1 Month End Closing**

At the end of every month on the **25th**, the PPIT accountants shall undertake the following actions:

- Reconcile bank, advances and petty cash accounts

- Close the cashbook by ruling a line under the very last transaction of the month and start new pages for the following month's transactions.
- Forward copies of the summary and the relevant cashbook pages to the PGT for inputting into the computerised accounting system.
- Original copies of supporting documents shall be attached and sent together with Cash Book Summary.

## **11.2 Fund Transfers to PPIT/DPIT Sub-Accounts**

The ceiling for PPIT Kip sub-account is equivalent to *USD5,000* and DPIT Kip sub-account is equivalent to *USD2,000*. When fund balances are low (70% balance remaining), the PPITs/DPITs accountants submit replenishment request to PGT and the following supporting documents must be attached:

- Transfer Request
- Bank Reconciliation
- Cashbook

The PGT accountant prepares replenishment request to the MAF for approval and forward to MOF requesting transfer of funds from the DA to the PPITs/DPITs Kip bank account.

## **12. FIXED ASSET MANAGEMENT**

All Project investment expenditures such as equipment, vehicles, furniture etc. are expensed as they are incurred.

### **12.1 Fixed asset registers**

The Project shall maintain an up to date asset register of all purchased vehicles, machinery, furniture, equipment etc.

Fixed asset registers should be maintained for each of the following classifications:

- Plant, Equipment and Machinery
- Furniture and Fittings
- Office Equipment
- Motor vehicles

The asset register should record the following information for each individual piece of equipment: 1) Asset description, 2) Asset number, 3) Serial number of the item, 4) Officer responsible for asset, 5) Funding of asset (IFAD, government etc..), 6) Location; Date of purchase; and 7) Estimated life.

Provincial accountants should be responsible for maintaining fixed asset registers for their own Province. The lists shall be forwarded to the PGT at the end of **every months** for consolidation. PGT has the responsibility to consolidate all fixed asset registers of the Project and have them up dated at least every three months.

A well maintained fixed asset registers has a significant positive impact on the Project's internal control assessment when the external auditor conducts field audit at the end of every financial period.

## **12.2 Logbooks**

All fixed assets of the project shall not be used for private purposes. A logbook shall be maintained for each project's vehicle. Details on the logbook such as time of travel, meter reading, fuel usage, purposes of trips, driver's name and signature must be filled in every time the vehicle is used. The logbook must be reconciled at the end of every month by comparing the odometer reading on the book against the mileage shown on the vehicle.

The accountant should on a monthly basis review the mileage and fuel usage as well as any undertaken service as reported in the log book of each car and compare these with the official invoices and travel authorisations etc. to make sure the numbers are accurate.

An insurance policy must be taken by the PGT to ensure all cars and passengers against all risks, including damage, theft, fire, as well as injury and property damage to third parties. The insurance must also cover the same risks when the cars are used by the recipient staff members outside of normal working hours.

## **12.3 Asset Verification Review**

The PGT must ensure that a verification count of all equipment recorded in the fixed asset register is performed at least once a year. This should include the following checks:

- Verify that all equipment is still held in the location recorded on the register; and
- Check that equipment is still in a reasonable state of repair.
- Discrepancies between the verification exercise and the fixed asset register should be investigated. Where assets are missing or seriously damaged, they should be removed from the asset register. The removal should be formally documented and approved by the appropriate authority.

The verification review must be performed by different staff from those who use the equipment, to ensure adequate segregation of duty.

# **13. FINANCIAL REPORTING**

The PGT will be responsible to consolidate financial information from the PPITs and DPITs into quarterly and annual financial statements for all relevant parties. The Financial Statements will be consistent with IPSAS cash basis and the project's Finance Management Manual. Quarterly Financial Reports with accurate and updated financial information will be prepared by the PGT for submission to IFAD *within 15 days from the end of each quarter*.

## **13.1 Financial Reports**

Financial Reports (**Annex 2**), prepared by Component and by Disbursement category, will be produced directly from the accounting system of the project, and not from any

other stand-alone manual or electronic system. The PGT will need to have the capacity to record GoL and beneficiary cash contributions, as well as the financial value of in-kind contributions of private companies and farmer-groups.

The annual Financial Statements of the project will include:

- a) Statement of Sources and Uses of Funds;
- b) Statement of Cash Receipts and Payments;
- c) Statements of Comparison of Budget and Actual Amounts;
- d) Notes to the Financial Statements (Accounting policies);
- e) Withdrawal Application Statement;
- f) Fixed Asset schedule;
- g) Designate Account statement and reconciliation.

## **13.2 Progress Reports**

Periodic financial progress reports are a formal requirement of the IFAD Financing Agreement. Sufficient information must be made available about what money is spent on, how much is spent and what the results are. The major financial reports include the following: AWPB, monthly financial reports, periodic financial progress reports, supervision reports, annual financial statements and audit reports.

In addition to the AWPB, supervision reports and audit reports, the PGT will ensure that the following financial reports are prepared in a timely manner and submitted to IFAD in due time (applicable to reports 2-4 only):

1. Monthly financial reports for Project internal use only. These reports will be verified during IFAD supervision missions.
2. Periodic (semi-annual) progress reports, to be provided to IFAD within 45 days after the reporting period
3. Annual financial statements, to be provided to IFAD within 4 months after the end of the project fiscal year.
4. Annual financial statements audited by an independent auditor acceptable to the Fund and in accordance with internationally accepted auditing standards and terms of reference cleared by IFAD, to be provided to IFAD within 6 months after the project fiscal year.

## **14. BUDGETING and PLANNING**

PGT is responsible for developing an Annual Work Plan and Budget (AWPB). The AWPB is expected to contain several key elements such as:

- i) Introduction and brief background;
- ii) Strategic focus and outputs;

- iii) Major risks and mitigation actions;
- iv) Budget and Financing plan;
- v) Procurement plan;
- vi) Training and technical assistance schedule and,
- vii) Staff development plan

The budget and financing plan can be described as a detailed statement of the expected resources available to the project and the planned use of those resources for the upcoming project year. The AWPB and especially the budget and financing plan is an important tool for managing the financial performance of the project and to ensure sufficient cash flow.

### **14.1 Development of the AWPB**

Before the beginning of each fiscal year for the project, PGT should in consultancy with other project staff and stakeholders, prepare the AWPB for the next year reflecting any updates to the project cost tables detailed in the project design. The budget and financing plan should be prepared and presented on an annual basis. The data on the number of activities to be implemented in the coming year and the estimates of the total funds needed to finance them should be presented by component and sub-component, by expenditure category as well as by financier.

After preparing the draft AWPB, it will be sent to the Project Director and Steering Committee for review and clearance/approval before sending it to IFAD for no objection. In accordance with the FA, a draft AWPB has to be submitted to IFAD no later than 60 days before the beginning of the relevant fiscal year of the project. If required the PGT can propose adjustments in the AWPB during the relevant project year, which would become effective after IFAD's approval.

The AWPB must be accompanied by a procurement plan prepared by the Procurement Officer. The first Procurement plan should cover the first 18 months of the project lifecycle while the subsequent procurement plans should cover 12 months of the project lifecycle.

### **14.2 Review of the AWPB**

Every quarter, the PGT should review the costs incurred during this time period. In case of differences between the planned and actual costs presented in the Annual Budget, and identify the reasons for those differences and detail them in the periodic Financial Reports presented to IFAD. In case of internal problems identified during the costs review, the management should take the necessary steps to eliminate or rectify them. Otherwise, the budget for the next quarters should be readjusted to reflect the difference between actual and planned figures.

### **14.3 Budgetary Control**

Budgets can be used as a control measure by comparing actual expenditures with the planned budgets. The computerised accounting system can generate the financial statement called "**Statement of Cash Receipts and Payment and Comparison of Budget and Actual Amount**", refer format in **Annex 2**. At the end of each quarter, PGT shall produce print out of the financial statements for analytical and decision making purposes.

The Project management can use the financial information to control their budgets by comparing the actual expenditure against the planned budgets. The column called "Budget Balance" gives indication whether or not the budget for each particular expenditure item has been exceeded. The minus signs means the budget for that particular expenditure item has been overspent. This means there are no more funds left to spend on this expenditure item and the management must provide explanations for major negative variances.

## **15. AUDITING**

### **15.1 Audit Arrangements**

PICSA's annual accounts will be audited by a private firm in accordance with International Standards on Auditing (ISA) and following the IFAD Handbook for Financial Reporting and Auditing. The audited project financial statements together with the auditor's opinion will be submitted to IFAD in English within 6 months from the end of the fiscal year.

The objective of PICSA's annual audit is to enable the auditor to express an opinion on whether PICSA's financial statements present fairly, in all material respects, its financial position at the end of the fiscal year, and if the results of its operations and cash flow are in conformity with the accounting standards applied by PICSA. Auditor's opinion should be issued following the ISA 705.

Compliance with financial reporting, auditing requirements and performance of the auditor will be monitored regularly and during supervision missions.

IFAD promotes public disclosure of projects financial information to enhance transparency and accountability. IFAD will disclose PICSA's audit reports, as appropriate, in line with the IFAD's disclosure policy. Management Letters issued by auditors are not subject to public disclosure by IFAD.

### **15.2 The Audit Cycle and Appointing the Auditor**

The complete audit cycle can be divided into the three main roles carried out by the Project, the Auditor and IFAD.

The Project and the financial officer will:

- Timely prepare TORs of the Audit and submit these to the Fund for no objection,
- manage the selection process of the auditor (if relevant)

- and appoints the auditor.
- Prepare the financial statements for reporting period
- Make available all the financial information necessary to the auditors.
- PGT should respond to the audit findings and recommendations.
- Submit the audit report to IFAD no later than 6 months after the end of the project fiscal year.

The Auditor will:

- perform the audit work including the three audit opinions
- Indicate any ineligible expenditures
- Provide a management letter

IFAD will:

- Provide a no objection to the auditors TORs
- Monitor timely submission and review of audit reports
- Follow up on remedial action\apply sanction and /or remedies if relevant including suspension of disbursement and or cancellation of loan balance (Legal Notice is sent to the Executing Agency after 3 months of delay. Suspension of disbursement to the project after 6 months delay.)

When appointing the auditor the financial officer will need to ensure that the following steps are followed:

- a) Financial Officer/PGT prepares TORs for the auditor and sends it to IFAD for review and no-objection.
- b) IFAD communicates “no objection” to borrower.
- c) Financial Officer/PGT initiates the procurement process using the agreed TORs.
- d) Financial Officer/PGT informs IFAD of the name of proposed auditor and the procurement process followed for the selection.
- e) IFAD communicates “no objection” to borrower on the selection of proposed auditor upon performance of the necessary due diligence.
- f) Financial Officer/PGT appoints the auditor.
- g) The auditor appointed normally issues a formal engagement letter

### **15.3 ToRs of the Auditors and the Engagement Letter**

When preparing auditors TORs the financial officer should address the point outlined below:

- a) Description of the employing project authority or entity;
- b) Term of the auditor’s engagement, namely whether it is for a fiscal year or some other period;
- c) Description and the timing of the financial statements and other material to be provided by project management for the audit;
- d) Terms for delivery of the audit report;
- e) Specification that the audit be carried out in accordance with internationally accepted auditing standards;

- f) Provision of a management letter;
- g) Statement of access to project records, documents and personnel available to the auditor;
- h) Details regarding submission of a proposal and work plan by the auditor.

To enable the auditor to understand their nature, objectives and activities, the following additional information should also be considered:

- c) Organisational charts;
- d) Names and titles of senior managers;
- e) Names and qualifications of officers responsible for financial management, accounting and internal audit;
- f) name and address of any existing external auditor, if a change is made;
- g) Description of information technology facilities and computer systems in use; and
- h) Copies of the latest financial statements, financing agreement, minutes of financing negotiations, project design document, AWPB, if it is available.

The auditors are required to provide a formal engagement letter confirming their acceptance of the appointment and outlining the methodology, scope and responsibilities under the audit. The borrower's representative will sign and return a copy of the letter to the auditor.

## **15.4 The Audit Report**

The Audit Report must include the following elements which should also be reflected in the auditor's TORs:

- An opinion on the Project's financial statements
- A separate opinion on the eligibility of expenditures included in the WA /Statement of Expenditure procedure
- A separate opinion if the use of the Special Account/Designated Account is in compliance with the financing agreement
- In addition to the audit report, the independent auditor will prepare a management letter. This will include comment and recommendations on the adequacy of the financial management system, and on the system of internal control. The management letter should also include a follow up section on the status of implementation of previous years recommendations

## **15.5 Internal Audit**

Since the project implementation is very diverse, internal audit and control is a crucial tool available for managements to monitor the performance and expenditure of the whole project. The PGT shall perform internal audit function to monitor the provinces. An internal audit team should be established, say of two finance staff that will every month travel to the provinces and conduct the following internal audit function:

- Analyse variances between budget and actual expenditure level from the financial statement obtained from the computer system called "**Statement of Cash Receipts and Payment and Comparison of Budget and Actual Amount**". Obtain explanations for major overspending.

- Perform cash count on the petty cash. The certificate shall be prepared and signed by the cashier and the internal auditor.
- Review the systems established to ensure compliance with the project's policies and procedures.
- Review the means of safeguarding assets and as appropriate, certify the existence of such assets.
- Review the logbook and verify the mileage reading on the odometer against the book record.
- Advise on corrective action to be taken.

## **16. ANTICORRUPTION POLICY**

The management of the project funds shall be sufficiently rigorous to safeguard against Fraud and Corruption. Fraud and corruption include, but are not limited to:

- corrupt practice - offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party
- fraudulent practice - any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation
- collusive practice - an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party
- coercive practice - impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party

IFAD applies a zero-tolerance policy towards fraudulent, corrupt, collusive or coercive actions in projects financed through its loans and grants. "Zero tolerance" means that IFAD will pursue all allegations falling under the scope of this policy and that appropriate sanctions will be applied where the allegations are substantiated. IFAD takes all possible actions to protect individuals who submit allegations of fraudulent or corrupt practices in its activities from reprisal. The IFAD anticorruption policy is available on IFAD website at [www.ifad.org/governance/anticorruption/index.htm](http://www.ifad.org/governance/anticorruption/index.htm)). The IFAD website also provides instructions on how to report any alleged wrongdoing to the Office of Audit and Oversight (<http://www.ifad.org/governance/anticorruption/how.htm>).

Where it is determined that fraudulent, corrupt, collusive or coercive practices have occurred in projects financed through its loans and grants, IFAD applies a range of sanctions, including disciplinary measures for IFAD staff; and pursues the recovery of any losses in accordance with the provisions of the applicable IFAD rules and regulations and legal instruments.

It is the Project Director's responsibility to make sure that all PGT staff including the provincial and district financial department are aware of IFADs and the lead project agency's anticorruption policy and whistle blowing procedures.

## 17. CONTRACT MANAGEMENT

A record of the contracts awarded within a calendar month that are to be financed – in part or in full from IFAD's proceed must be submitted to IFAD using a duly completed Form C-10 - Register of Contracts. When a contract is amended, the amendment will be recorded in the register of contracts for the reporting calendar month in which the amendment occurred.

If a contract is cancelled or declared ineligible for financing by IFAD, this information should be included in the register of contracts for the reporting calendar month in which the cancellation or financing ineligibility was declared, by indicating:

- (i) the contract serial number;
- (ii) the date of cancellation or financing ineligibility in column;
- (iii) 'cancelled' or 'ineligible for financing', as the case may be, in the 'remarks' column. If no contract award has taken place during a calendar month, the register for that month will be submitted to IFAD indicating 'NIL' in column 1.

For contracts against which several payments will be made, Form C-11 - Contract Payment Monitoring Form must be kept by the project to record and keep track of summary payments. This form is submitted with each WA for which payments against the contract are being made to enable IFAD to determine the payment status of each contract.

There must be:

- A filing system with limited accessibility of all documents related to each contract, using chrono-files per contract;
- A register of contracts, with an overview of the entry of key documents

## 18. PROCUREMENT

The project should follow regulations on procurement in accordance to IFAD's Procurement Guideline and Procurement Handbook. Reference should also be made to procurement section in the PIM.

The project can purchase only equipment and materials mentioned in a Procurement Plan, which has been approved by the project steering committee and IFAD in accordance to the Annual Work Plan and Budget.

PGT shall compile project procurement lists in accordance with the AWPB, and then furnish them to the steering committee for review and provide them to IFAD for approval. In case of changes to the procurement plan, the same above-mentioned

authorisation procedures apply. Project procurements carried out by PPITs/DPITs shall be supervised by the PGT.

## 19. BACK UP

The computer containing the accounting information and computerised accounting program must have password and the **back-up** of accounting data files needs to be performed **daily**. The current data files shall be loaded into the second computer for back up security purposes. The data files from computerised accounting system shall be copied onto the USB. The USB must be kept off site away from the office in case of theft and fire.

## ANNEX 1

# Project Cost and Financing

## Annex 1: Preliminary project cost tables by component / co-funding overview

Table 1: Preliminary cost tables by component and sub-component

#	Component / sub-component	Total cost		IFAD11-Loan		GoL contribution		Beneficiary cont.		Private sector cont.		Funding gap	
		10 <sup>6</sup> USD	%	10 <sup>6</sup> USD	%	10 <sup>6</sup> USD	%						
1	Intensified Agricultural Development												
1.1	District and Village Authorities trained	2.12	7%	1.14	9%	0.28	14%	0.00	0%	0.00	0%	0.69	9%
1.2	Water Users Groups trained	1.71	6%	0.94	7%	0.20	10%	0.00	0%	0.00	0%	0.57	7%
1.3	Extension Services	1.95	7%	1.08	8%	0.22	10%	0.00	0%	0.00	0%	0.65	8%
1.4	Farmer Group Investment Facility	11.31	39%	3.83	29%	0.04	2%	4.90	100%	0.00	0%	2.54	32%
	<b>Sub-total component 1</b>	<b>17.09</b>	<b>58%</b>	<b>6.99</b>	<b>54%</b>	<b>0.74</b>	<b>36%</b>	<b>4.90</b>	<b>100%</b>	<b>0.00</b>	<b>0%</b>	<b>4.45</b>	<b>57%</b>
2	Value Chain Development												
2.1	Multi-stakeholders Platform	0.90	3%	0.36	3%	0.02	1%	0.00	0%	0.00	0%	0.52	7%
2.2	Agribusiness Investment Facility	3.59	12%	1.44	11%	0.08	4%	0.00	0%	1.50	100%	0.57	7%
2.3	Improved Access	3.04	10%	1.70	13%	0.30	15%	0.00	0%	0.00	0%	1.03	13%
	<b>Sub-total component 2</b>	<b>7.52</b>	<b>26%</b>	<b>3.50</b>	<b>27%</b>	<b>0.40</b>	<b>19%</b>	<b>0.00</b>	<b>0%</b>	<b>1.50</b>	<b>100%</b>	<b>2.12</b>	<b>27%</b>
3	Improved Nutrition Practices												
3.1	Increased dietary intake and quality	1.32	4%	0.75	6%	0.11	5%	0.00	0%	0.00	0%	0.46	6%
3.2	School-based nutrition interventions	0.27	1%	0.15	1%	0.03	1%	0.00	0%	0.00	0%	0.09	1%
	<b>Sub-total component 3</b>	<b>1.59</b>	<b>5%</b>	<b>0.90</b>	<b>7%</b>	<b>0.13</b>	<b>6%</b>	<b>0.00</b>	<b>0%</b>	<b>0.00</b>	<b>0%</b>	<b>0.55</b>	<b>7%</b>
	<b>Project management</b>	<b>3.16</b>	<b>11%</b>	<b>1.60</b>	<b>12%</b>	<b>0.80</b>	<b>39%</b>	<b>0.00</b>	<b>0%</b>	<b>0.00</b>	<b>0%</b>	<b>0.75</b>	<b>10%</b>
	<b>Total Project cost</b>	<b>29.36</b>	<b>100%</b>	<b>13.00</b>	<b>100%</b>	<b>2.08</b>	<b>100%</b>	<b>4.90</b>	<b>100%</b>	<b>1.50</b>	<b>100%</b>	<b>7.88</b>	<b>100%</b>

# **ANNEX 2**

## **Financial Statement Format**

## **Annex 2: Financial Statement Format**

Table 1: Statement of Sources and Uses of Funds

## Annex 2: Financial Statement Format

Table 2: Statement of Cash Receipts and Payments

<b>Partnerships for Irrigation and Commercialisation of Smallholders Agriculture Project (PICSA)</b>						
IFAD Loan No. _____						
STATEMENT OF CASH RECEIPTS, PAYMENTS AND COMPARISON OF BUDGET AND ACTUAL AMOUNTS						
For The Period Ended _____						
USD						
YEAR TO DATE						
BUDGET    ACTUAL    VARIANCE %						
<b>1) RECEIPTS</b>						
Loan from IFAD						
Total Receipts						
<b>2) PAYMENTS by COMPONENT</b>						
<b>Component 1 : Intensified agricultural development actors</b>						
1.1 District staff and village authorities trained						
1.2 Water User Groups (WUG) trained						
1.3 Extension Service provision through public, private and farmer-to-farmer channels						
1.4 Farmer Group Investment Facility						
Subtotal: Component 1						
<b>Component 2 : Value chain development actors</b>						
2.1 Multi-Stakeholder Platforms						
2.2 Agribusiness Investment Facility						
Subtotal: Component 2						
<b>Component 3 : Improved nutritional practices</b>						
3.1 Increased dietary intake and improved dietary quality for nutritionally vulnerable groups						
3.2 School-based nutrition interventions						
Subtotal: Component 3						
<b>Total Payments by Component</b>						
	YEAR TO DATE					
	BUDGET	ACTUAL	VARIANCE %	BUDGET	ACTUAL	VARIANCE %
<b>3) PAYMENTS by CATEGORY</b>						
Cat I: TBA						
Cat II: TBA						
Cat III: TBA						
Cat IV: TBA						
Cat V: TBA						
Cat VI: TBA						
Cat VII: TBA						
<b>Total Payments by Category</b>						

# **ANNEX 3**

# Accounting Forms

### **Annex 3: Accounting Forms**

Table 1: Payment Voucher

## **Partnerships for Irrigation and Commercialisation of Smallholders Agriculture Project (PICSA)**

**IFAD Loan No.**

PV No.

## Payment Voucher

**Requesting Province/District:** \_\_\_\_\_

Supplier: \_\_\_\_\_ Date: / /

## **Journal Entry**

<b>Certified by:</b>	<b>Prepared by:</b>
<b>Date</b> _____	<b>Date</b> _____
<b>Approved by:</b>	<b>Payment made by Cash/Cheque No.</b> _____
<b>Date</b> /    /	<b>Received by:</b> _____ <b>Date</b> /    /

### **Annex 3: Accounting Forms**

Table 2: Cashbook Summary from the PPITs/DPITs

## **Annex 3: Accounting Forms**

Table 3: Journal Voucher

**Partnerships for Irrigation and Commercialisation of  
Smallholders Agriculture Project (PICSA)**

IFAD Loan No. \_\_\_\_\_

<b>Journal Voucher</b>				Voucher No.	<b>JV</b>
Issued By:				For the Month:	
Authorized By:					
Date	Description	A/C Code	Category	USD	Rate
Total					



### **Annex 3: Accounting Forms**

Table 4: Advance/Expenditure Summary

**Partnerships for Irrigation and Commercialisation of  
Smallholders Agriculture Project (PICSA)**  
*IFAD Loan No. \_\_\_\_\_*

**Advance Summary**

Cost Center: \_\_\_\_\_ Cheque No. \_\_\_\_\_ Date \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Reference Payment Voucher No.: \_\_\_\_\_

Purpose of Advance: \_\_\_\_\_

Description	Reference	A/C Code	Rate	KIP	USD
TOTAL					
ADVANCE received					
BALANCE					

Approved By:



Advance Holder

Prepared By:

### **Annex 3: Accounting Forms**

Table 5: Travel Authorisation Budget

### **Partnerships for Irrigation and Commercialisation of Smallholders Agriculture Project (PICSA)**

**IFAD Loan No.** \_\_\_\_\_

#### **Travel Authorization/Budget**

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Cost Center: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Purpose of Travel: \_\_\_\_\_

Requested by: \_\_\_\_\_

Approved by: \_\_\_\_\_

#### **Budget Provision for Traveling:**

Departure Time/Date	Return Time/Date	Number of Days/Nights
---------------------	------------------	-----------------------

Description	No.of Days	Rate	Amount ( )
Hotel Domestic/Abroad			
Airfares			
Per diem			
Petrol/Fuel			
Terminal Fees			
Others			
<b>Total Budgeted Amount</b>			

Approved by:

Calculated & Certified by:

## **Annex 3: Accounting Forms**

Table 6: Per diem Allowances

# **Partnerships for Irrigation and Commercialisation of Smallholders Agriculture Project (PICSA)**

*IFAD Loan No.*

## **Per Diem Allowance**

**Cost Center:** \_\_\_\_\_

**Duration of Travel/Activity:** \_\_\_\_\_

Starting Date:      /      /

**Ending Date:**      /      /

Approved by:

Prepared by: