



Report No: PAD4041

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT AND GRANT

IN THE AMOUNT OF SDR10.9 MILLION
(US\$15MILLION EQUIVALENT)

TO THE

SOLOMON ISLANDS

FOR A

SOLOMON ISLANDS AGRICULTURE AND RURAL TRANSFORMATION PROJECT

FEBRUARY 24, 2022

Agriculture and Food Global Practice
East Asia and Pacific Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective January 31, 2022)

Currency Unit = Solomon Islands Dollar (SBD)

SBD 8.11 = US\$1

US\$1.39178 = SDR 1

FISCAL YEAR

January 1 - December 31

ABBREVIATIONS AND ACRONYMS

ABPO	Agribusiness Producer Organization
ASGIP	Agriculture Sector Growth and Investment Plan
CA	Conservation Agriculture
CERC	Contingent Emergency Response Component
CERCPIM	CERC Project Implementation Manual
CFO	Chief Field Officer
COCO	Connect Online-Connect Offline
CRI	Corporate Result Indicator
CRP	Community Resource Person
CSA	Climate-Smart Agriculture
CVO	Chief Veterinary Officer
DA	Designated Account
DFAT	Australia Department of Foreign Affairs and Trade
DME	Direct Micro Expeller
EAP	Emergency Action Plan
ECOP	Environmental Code of Practice
EIRR	Economic Internal Rate of Return
EoI	Expression of Interest
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESRS	Environmental and Social Review Summary
ESS	Environmental and Social Standards
EX-ACT	Ex-Ante Carbon-balance Tool
FAFF	Faculty of Agriculture, Forestry, and Fisheries
FAO	Food and Agriculture Organization
FCV	Fragility, Conflict, and Violence
FM	Financial Management
GAP	Good Agriculture Practices
GBV	Gender-Based Violence
GDP	Gross Domestic Product

GHG	Greenhouse Gas
GRM	Grievance Redress Mechanism
HIES	Household Income and Expenditure Survey
ICT	Information and Communication Technology
IDPM	Integrated Disease and Pest Management
IFAD	International Fund for Agricultural Development
IPF	Investment Project Financing
LMP	Labor Management Procedures
MAL	Ministry of Agriculture and Livestock
MIS	Management Information System
MNPDC	Ministry of National Planning and Development Coordination
MOFT	Ministry of Finance and Treasury
MOU	Memorandum of Understanding
NDC	Nationally Determined Contribution
NDS	Solomon Islands National Development Strategy
NGO	Nongovernmental Organization
NPV	Net Present Value
OAG	Office of the Auditor General
OIE	World Organization for Animal Health
PAD	Project Appraisal Document
PDO	Project Development Objective
PHAMA	Pacific Horticultural and Agricultural Market Access
PIM	Project Implementation Manual
PMU	Project Management Unit
PO	Producer Organization
PP	Procurement Plan
PPSD	Project Procurement Strategy for Development
PPT	Provincial Project Team
PSC	Project Steering Committee
RDP	Rural Development Program
SAP	Sustainable Agriculture Practices
SCALE	Strengthening Competitiveness, Agriculture, Livelihoods and Environment
SDGs	Sustainable Development Goals
SEP	Stakeholder Engagement Plan
SI ART	Solomon Islands Agriculture and Rural Transformation
SIDS	Small Island Developing States
SIG	Solomon Islands Government
SINU	Solomon Islands National University
STEP	Systematic Tracking of Exchanges in Procurement
ToR	Terms of Reference
ToT	Training of Trainer
USAID	United States Agency for International Development
WHO	World Health Organization
WP	With Project
WoP	Without Project
YP	Young Professional

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DATASHEET

BASIC INFORMATION				
Country(ies)	Project Name			
Solomon Islands	Solomon Islands Agriculture and Rural Transformation Project			
Project ID	Financing Instrument	Environmental and Social Risk Classification		
P173043	Investment Project Financing	Substantial		
Financing & Implementation Modalities				
<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input checked="" type="checkbox"/> Contingent Emergency Response Component (CERC)			
<input type="checkbox"/> Series of Projects (SOP)	<input checked="" type="checkbox"/> Fragile State(s)			
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input checked="" type="checkbox"/> Small State(s)			
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country			
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict			
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster			
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS)			
Expected Approval Date	Expected Closing Date			
17-Mar-2022	31-Dec-2026			
Bank/IFC Collaboration				
No				
Proposed Development Objective(s)				
To increase agricultural production and improve market access in selected value chains in the Project Provinces, and in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.				
Components				
Component Name		Cost (US\$, millions)		



Component 1: Agribusiness and Infrastructure Investments	11.20
Component 2. Institutional Capacity Development	1.80
Component 3. Project Management	2.00
Component 4. Contingent Emergency Response Component	0.00

Organizations

Borrower: Solomon Islands

Implementing Agency: Ministry of Agriculture and Livestock

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	15.00
Total Financing	15.00
of which IBRD/IDA	15.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	15.00
IDA Credit	6.00
IDA Grant	9.00

IDA Resources (in US\$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Solomon Islands	6.00	9.00	0.00	15.00
National PBA	6.00	9.00	0.00	15.00
Total	6.00	9.00	0.00	15.00



INSTITUTIONAL DATA

Practice Area (Lead) Contributing Practice Areas

Agriculture and Food

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	● Substantial
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Substantial
8. Stakeholders	● Moderate
9. Other	● Substantial
10. Overall	● Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[] Yes [✓] No

Does the project require any waivers of Bank policies?

[] Yes [✓] No

**Environmental and Social Standards Relevance Given its Context at the Time of Appraisal**

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants**Sections and Description**

The Recipient shall, through MAL to, by no later than three (3) months from the Effective Date, establish and thereafter maintain, throughout the entire period of implementation of the Project, a Project Steering Committee ("Project Steering Committee") with terms of reference, composition and resources satisfactory to the Association. The Project Steering Committee shall be chaired by the Permanent Secretary of MAL and include at least one representative from each of the following ministries: (i) the Recipient's Ministry of Finance and Treasury; (ii) the Recipient's Ministry of National Planning and Development Coordination; (iii) the Recipient's Ministry of Infrastructure Development; (iv) the Recipient's Ministry of Health and Medical Services; (v) the Recipient's Ministry of Provincial Government; and (vi) the Recipient's Ministry of Education, as well as the Secretary of each of the Project Provinces. (Section I.A.3 of Schedule 2 to the Financing Agreement).

Sections and Description

The Recipient shall, through MAL, no later than three (3) months from the Effective Date, establish and thereafter



maintain, throughout the entire period of implementation of the Project, a PMU within MAL, with terms of reference, composition and resources satisfactory to the Association, which shall be responsible for carrying out day-to-day management and implementation of the Project. (Section I.A.4 (a) of Schedule 2 to the Financing Agreement).

Sections and Description

The Recipient shall, through MAL, no later than six (6) months from the Effective Date, recruit, and thereafter maintain, within the PMU, throughout the entire period of implementation of the Project, at least the following specialists: (i) a Project manager, responsible for the coordination and day-to-day implementation of all Project activities; (ii) a senior financial management specialist; (iii) a procurement specialist; (iv) a social safeguards specialist; (v) an environmental safeguards specialist; (vi) a monitoring & evaluation specialist; and, (vii) a communications specialist, each with terms of reference, qualifications and experience satisfactory to the Association. (Section I.A.4 (b) of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall, through MAL, by no later than three (3) months from the Effective Date, establish and thereafter maintain, throughout the entire period of implementation of the Project, a Provincial Project Team ("Provincial Project Team") in each of the Project Provinces for the purposes of overall coordination of the Project activities within the respective Project Province, all with terms of reference, composition and resources satisfactory to the Association. (Section I.A.5 of Schedule 2 to the Financing Agreement)

Sections and Description

The Recipient shall through MAL, by no later than six (6) months after the Effective Date (or such other date as agreed by the Association)): (a) prepare and furnish to the Association, for its review and no objection, a Project Implementation Manual, which shall set forth, inter alia, the following detailed arrangements and procedures for the implementation of the Project: (i) institutional arrangements for the day to day execution of the Project; (ii) the preparation and successive updates of the Procurement Plan and its implementation arrangements; (iii) implementation arrangements for the Environmental and Social Commitment Plan ("ESCP"); (iv) detailed financial management regulations including planning and budgeting, disbursement, accounting system, internal controls, financial reporting, and auditing arrangements, and arrangements for interim support; (v) Project monitoring, reporting, evaluation and communication arrangements; (vi) eligibility and other criteria, procedures, and requirements for: (A) the selection, establishment and registration of ABPOs; (B) the selection of CRPs, Young Professionals, interns selected for the purposes of Part 2.1(b) of the Project, and Training providers under the relevant parts of the Project; (C) the provision of ABPO Grants; (D) the selection of Private Sector Entities and for carrying out of Sub-grants, including the template Sub-grant Agreement; and (E) the internship program under Part 2.1(b) of the Project, including for the financing of Stipends; (vii) procedures to carry out the Annual Innovation Competition under Part 2.3 of the Project; and (viii) any other administrative, financial, technical and organizational arrangements and procedures as shall be necessary for the implementation of the Project and the achievement of its development objectives

(Section I.B.1(a) of Schedule 2 to the Financing Agreement).

Sections and Description

The Recipient shall carry out, jointly with the Association, not later than three (3) years after the Effective Date, or



such other period as may be agreed with the Association, a mid-term review of the Project (the “Mid-Term Review”) to assess the status of Project implementation, as measured against the Project indicators acceptable to the Association, and compliance with the legal covenants included or referred to in this Agreement. Such review shall include an assessment of the following: (a) overall progress in implementation; (b) results of monitoring and evaluation activities; (c) progress on procurement and disbursement; (d) progress on implementation of safeguards measures; (e) implementation arrangements and Project staff turnover; and (f) the need to make any adjustments to the Project to improve performance. To this end, the Recipient shall prepare and furnish to the Association, at least one (1) month before the date of the Mid-Term Review, a report, in scope and detail satisfactory to the Association and integrating the results of the monitoring and evaluation activities performed pursuant to Section II.12 of this Schedule 2 and the General Conditions, on the progress achieved in the carrying out of the Project during the period preceding the date of such report and setting out the measures recommended to ensure the efficient carrying out of the Project and the achievement of the objectives thereof. (Section II.2.(i) of Schedule 2 to the Financing Agreement).

Sections and Description

1. The Recipient shall prepare and furnish to the Association, by not later than six (6) months after the Effective Date and September 15 of each subsequent year during the implementation of the Project (or such later interval or date as the Association may agree), for the Association’s review and no-objection, an Annual Work Plan and Budget, which shall include, inter alia: (a) a list of all activities (including Operating Costs, Stipends and Training) proposed to be implemented under the Project during the following fiscal year of the Recipient; (b) provide a budget for their financing; and (c) describe the measures and actions taken or planned to be taken in accordance with the provisions of Section I.E of this Schedule 2. (Section I.E.1 of Schedule 2 to the Financing Agreement).

Sections and Description

The Recipient, through MAL, no later than [twelve (12)] months from the Effective Date, enter into a memorandum of understanding with Solomon Islands National University, in order to coordinate and effectively implement the internship program under Part 2.1(b) of the Project and setting out, inter alia, the eligibility and selection criteria for interns, conditions for admission to the internship program, and procedures for payment of Stipends, in a manner satisfactory to the Association (as further detailed in the Project Implementation Manual). (Section I.A.4(d) of Schedule 2 to the Financing Agreement).

Conditions

Type Disbursement	Financing source IBRD/IDA	Description No withdrawal shall be made for ABPO Grants under Category (2), unless and until the Grants Manual satisfactory to the Association has been prepared and adopted by the Recipient. (Section III.B.1(b) of Schedule 2 to the Financing Agreement).
Type Disbursement	Financing source IBRD/IDA	Description No withdrawal shall be made for Emergency Expenditures under Category (4), unless and until all of the following conditions have



		<p>been met in respect of said expenditures:</p> <p>(i) (A) the Recipient has determined that an Eligible Crisis or Emergency has occurred, and has furnished to the Association a request to withdraw Financing amounts under Category (4); and (B) the Association has agreed with such determination, accepted said request and notified the Recipient thereof; and</p> <p>(ii) the Recipient has adopted, in form and substance acceptable to the Association: (A) the CERC Manual; (B) the Emergency Action Plan; and (C) the environmental and social instruments in accordance with Section I.G.3(a) of Schedule 2 to this Agreement (Section III.B.1(c) of Schedule 2 to the Financing Agreement).</p>
Type Disbursement	Financing source IBRD/IDA	Description <p>No withdrawal shall be made: for payments made prior to the Signature Date. (Section III.B.1(a) of Schedule 2 to the Financing Agreement).</p>



I. STRATEGIC CONTEXT

A. Country Context

1. **The Solomon Islands is an archipelago of 997 islands in the southwest Pacific with a population of 694,619¹ and a total land area of about 28,400 km² spread over 1.34 million km² of ocean.** The population is dispersed across 90 inhabited islands, with one of the lowest population densities (20.8 persons per km²) in the world. Distances between islands are significant and distances to major export markets are even greater, with the capital, Honiara, being over 2,000 km from urban centers in Australia. The population is divided not only by the ocean between islands but also by mountainous terrain within most islands. The islands are volcanic, with 8 volcanoes (4 of them are considered active and 4 are submarine volcanoes)².
2. **The Solomon Islands is classified as a least developed country as well as a fragile and conflict-affected state.** Per the latest update on the Human Capital Index in 2020,³ a child born in the Solomon Islands today will be 42 percent as productive when s/he grows up as s/he could be, if s/he enjoyed complete education and full health. This is lower than the average for the East Asia and Pacific region. The Solomon Islands' Human Development Index ranking is 153 out of 189 countries, similar to that of Papua New Guinea, but below the other countries of the Melanesian group (Vanuatu at 141 and Fiji at 98).⁴ Based on the 2012–2013 Household Income and Expenditure Survey (HIES), about 12.7 percent⁵ of the population of the Solomon Islands lived below the basic needs poverty line.
3. **The Solomon Islands has made significant progress in restoring stability following a period of conflict from 1998 to 2003.** The conflict, locally known as ‘the tensions’, emerged as a result of grievances between local Guadalcanal landowners and migrants, predominantly from the most populous island of Malaita, drawn by economic opportunities. While often characterized as an ethnic conflict, ‘the tensions’ had multiple political and economic causes, including the disproportionate concentration of economic development in and around Honiara, compared to the rest of the country. Rapid social change associated with increasing urbanization also contributed to stresses, including the erosion of customary authority, disenchantment among young people, and a loss of social cohesion. In the decade since ‘the tensions’, elections were held successfully in 2006, 2010, 2014, and 2019, and the country has been largely peaceful, except for bouts of unrest such as recently, in November 2021 when, what started as political demonstration from a Malaitan protest group in Honiara City, quickly escalated into wider social unrest. East Honiara and Chinatown became the focus of looting of shops, burning of buildings and violence over a period of three days. Three deaths were reported. The situation triggered SIG to implement a temporary lockdown and curfew order, resulting in the arrival of the Australian Federal Police, Australian, PNG and Fijian Defense Forces to assist the Royal Solomon Islands Police to maintain law and order. The lockdown and curfew order has since been lifted and daily activities have resumed. However, widespread damage

¹ Solomon Islands National Statistics Office at <https://www.statistics.gov.sb/statistics/social-statistics/population>.

² Source: https://volcano.si.edu/volcanolist_countries.cfm?country=Solomon%20Islands

³ https://databank.worldbank.org/data/download/hci/HCI_2pager_SLB.pdf.

⁴ UNDP. 2019. “Human Development Index Ranking.”

⁵<http://documents1.worldbank.org/curated/en/158941528204217521/pdf/Solomon-Islands-PEB-Spring-2018.pdf>.



and loss to the local economy is estimated to be around SBD 227 million (US\$28 million equivalent) with further negative impacts on employment and job losses.

4. **The COVID-19 pandemic has had a severe impact on the economy.** The Solomon Islands economy grew by 3.9 percent in 2018, driven by a strong performance in logging, infrastructure spending, fisheries, agriculture, and manufacturing. However, growth slowed to 2.5 percent in 2019 from weakening logging exports and the temporary pause in economic activity around the election period. Inflation remained subdued at an annual rate of 1.7 percent in August 2019. The current account deficit has widened with higher infrastructure imports, but international reserves remain comfortable. The economy contracted by 5 percent in 2020 due to COVID-19, compared to projected GDP growth of 2.5 percent in the pre-pandemic baseline. The sharp fall in growth is expected to result in economic hardship for the poor and other vulnerable groups. The recently enacted COVID-19 economic stimulus package of SBD 319 million is expected to partly offset the contraction in demand. However, the fiscal deficit is expected to widen over the medium term to support economic recovery and medium-term growth. The overall deficit is expected to increase from 2.5 percent of GDP in 2021 to 4.8 percent of GDP in 2024.

5. **The immediate economic impact of COVID-19 and subsequent loss of income for workers and entrepreneurs are being felt by hotels, market vendors, and street vendors, among others.** People have fallen back on their social networks by returning to their villages. As less money is brought back to villages, people may need cash and/or food to ensure food resilience. Apart from cash crop harvesting, all other agriculture activities have halted. The Ministry of Agriculture and Livestock (MAL) has recommended and encouraged farmers to do more home gardening and to adopt good agriculture practices (GAP) in growing their own food. Presently, all shops are well stocked with food and other goods.

B. Sectoral and Institutional Context

6. **Agriculture is an important sector for the Solomon Islands' national economy.** It sustains 85 percent of the rural population with food crops, cash crops, and livestock for their daily livelihoods, food, and social security. Agriculture holdings account for 40 percent⁶ of the landmass of the country. About 35 percent of GDP is generated by subsistence agriculture, and nationwide, 92 percent⁷ of the population is engaged in agriculture in some way, increasing to as much as 95 percent in Malaita, Makira, Isabel, Central, and Rennell-Bellona Provinces. Of the estimated 111,117 agriculture holdings, 85 percent are individual holdings and 15 percent are family holdings. Most farmers produce crops organically, as the use of inorganic fertilizers and pesticides is limited (4 percent and 2 percent of farmers, respectively).

7. **There is potential to increase production of food crops to sustainably supply the rural and urban markets.** The main food crops in the Solomon Islands are sweet potato, cassava, yam, taro, banana, pumpkin, and vegetables. However, dietary patterns and eating habits have changed and rice has become the major source of energy intake, with sweet potato and cassava second to rice. Coconut and cocoa are the main cash crops for majority of the rural households. A few commercially oriented farmer-processor-traders are involved in processing and value adding, mostly in cocoa and copra. Spice crops, such as vanilla, cardamom, chili, ginger, and turmeric, are currently minor cash crops but have generated considerable

⁶ Solomon Islands Government. 2019. *Report on National Agricultural Survey 2017*.

⁷ Solomon Islands Government. 2019. *Report on National Agricultural Survey 2017*.



interest. Spices for export are a small niche market and many parts of the country are suitable for spice production, as they are labor intensive and well suited to the Solomon Islands' farming households. High-value subsistence crops, such as slippery cabbage, peanut, ngali nut, watermelon, sweet potato, cassava, yam, and taro also have strong potential to have their own value chains in domestic markets.

8. Over half of rural households in the three proposed project provinces of Guadalcanal, Malaita, and Makira keep pigs or poultry. These provinces have a total smallstock⁸ population of 100,000 pigs, 97,000 indigenous poultry, and 200,000 commercial broilers or layers. Smallstock production is carried out at three levels: (a) high-input/high-output commercial broiler, layer, and pig production depending entirely on imported breeding stock and feed, the supply chains of which are presently disrupted by COVID-19 and constrained by limited port offloading capacity at Honiara; (b) semicommercial smallstock production relying on greenfeed, agro-industrial by-products including copra, millrun, brewers' grain and fish offal, and cassava; and (c) low-input/low-output rural household-owned smallstock of less than 10 poultry or pigs, spread across the islands, using a variety of local feedstuffs. Indigenous poultry are used mostly as ready household cash, for home consumption, or social gifting.

9. Increased production and productivity of smallstock, which has a rapid turnover compared to other livestock, is the quickest and most cost-effective way to increase domestic meat production. Several factors contribute to the low levels of production and productivity of smallstock. These include limited domestic feed crop production, limited feed crop land, the lack of feed milling capacity, and difficulties in transporting bulky feedstuffs within and between islands. Household production is the largest as well as the least productive segment of the country's livestock subsector. In addition, rural households devote an average of 0.8 ha garden to grow vegetables and fruit trees, with an average 0.9 ha of additional unused land with the potential for feed crop production.

10. Between 2000 and 2017, domestic meat production increased by only 16.4 percent, whereas meat imports increased by 64 percent (FAOSTAT). Commercial broiler and layer production depends entirely on imported feed and breeding eggs which are hatched and distributed locally. The supply chains of imported breeding eggs and feed are fragile. COVID-19 has interrupted the supply of breeding eggs flown in from New Zealand, thereby severely constraining local broiler and egg production. Sea freight offloading capacity at Honiara Port is limited and can constrain the supply lines of imported feed. Agriculture extension services⁹and the provision of veterinary services to livestock are limited due to a limited number of field staff, lack of veterinary drugs and equipment from the MAL, intra-and inter-island transportation constraints, and the remoteness of many villages.

11. Like all Small Island Developing States (SIDS), the Solomon Islands has been identified as one of the most vulnerable to the adverse impacts of climate change. According to the Solomon Islands National

⁸ Smallstock is defined as pigs and poultry.

⁹ Oakley, Peter, and Christopher Garforth. 1985. "Guides to Extension Training." FAO. "An agricultural extension service offers technical advice on agriculture to farmers, and also supplies them with the necessary inputs and services to support their agricultural production. It provides information to farmers and passes to the farmers new ideas developed by agricultural research stations. Agricultural extension programmes cover a broad area including improved crop varieties, better livestock control, improved water management, and the control of weeds, pests or plant diseases. Where appropriate, agricultural extension may also help to build up local farmers' groups and organizations so that they can benefit from extension programmes. Agricultural extension, therefore, provides the indispensable elements that farmers need to improve their agricultural productivity."



Adaptation Programme of Action, climate change is the most important developmental and environmental issue for the country and poses a significant impediment toward meeting its development goals. The Solomon Islands has a tropical, humid, and wet climate. The country is situated within the earthquake belt or 'Ring of Fire' which makes it extremely vulnerable to the effects and impacts of earthquakes. With the majority of the population living within 1.5 km of the coastline, a considerable portion of the country's economy, infrastructure, and livelihoods is vulnerable to changes in climate.¹⁰ Climate change impacts are already being felt, such as increased intensity and frequency of extreme events including droughts, cyclones, and rising sea levels. Some of the country's smaller atolls are suffering the impacts of saltwater intrusion, storm surges, and flooding. Coastal areas where large portions of agriculture are found are likely to continue to suffer particularly from cyclones, storm surges of seawater, and saltwater intrusion into freshwater aquifers. Many of these events lead to crop damage, pest attack, transportation disruptions, and ultimately food insecurity. It is estimated that nearly 17 percent of households in the Solomon Islands are affected by storms or floods.¹¹ Over the past 36 years, there have been eight major disasters triggered by natural hazards, resulting in the loss of life and severe adverse economic impacts. The country experienced severe natural disasters such as flash floods in 2009 and 2014 with high mortality and serious damage to the rural and agriculture sector, followed by a severe drought in 2015–2016. Climate change combined with uncontrolled deforestation is exposing the Solomon Islands to a higher level of natural risks and extreme vulnerability. Therefore, the Solomon Islands is highly vulnerable to both climate change and geophysical risks.

12. Both women and men in the villages are engaged in subsistence and semi-commercial agriculture and fisheries. Female- and male-headed households comprise 13.4 percent and 86.7 percent of households, respectively.¹² To secure cash income, rural women are gradually turning to cash crops which are more lucrative. Women play a significant role in subsistence agriculture by growing root crops, tubers, and vegetables for both household consumption and sale in local markets and are the predominant keepers of village poultry, which are a ready source of household cash. Broadly speaking, men control most of the productive resources, assets, and technical information and are the primary decision-makers. Women dominate subsistence agriculture and the markets as vendors, which poses risks due to long hours away from home. There is an increased tendency to consume less nutritious homegrown food, which is being replaced by imported and less nutritious foods.¹³

13. The agriculture extension service under MAL is extremely weak. In the National Agricultural Survey conducted in 2017, only 3.6 percent of farmers received extension services and 30.8 percent were receiving agricultural information from radio and newspapers. Currently, 138 technical staff, including 37 female staff, are employed at the national, province, and ward levels. Malaita has the highest number of agriculture extension staff (47) including 8 female staff. The extension staff at all levels are responsible for a large number of activities, including coordination, monitoring and evaluation (M&E), implementation of projects, and report writing, which limits the time they can devote to providing actual extension services. The ratio of farming households per extension staff is 788 (or nearly 3,940 people). This situation is further exacerbated by a lack of roads, means of transport, and the dispersion of communities.

¹⁰ Climate Risk and Adaptation Country Profile, April 2011.

¹¹ Solomon Islands Government. 2019. *Report on National Agricultural Survey 2017*.

¹² Solomon Islands Government. 2019. *Report on National Agricultural Survey 2017*.

¹³ FAO. 2019. *Country Gender Assessment of Agriculture and Rural Sector in Solomon Islands*.



14. **Several forms of producer organizations (POs) exist in various types and nomenclature, such as farmers' associations, farmers groups, land purchase cooperatives, and community-based companies.** POs mobilize farmers to aggregate their produce and engage in local-level processing and value addition for higher price realization. The Government has made provisions to register these community institutions under the Co-operative Societies Act 1953, or in Community-Based Companies. POs under the Co-operative Societies Act or Community-Based Companies can engage in business activities earning a profit. POs in the Solomon Islands come in both formal and informal forms. Those that are formally registered with central and/or provincial authorities are smaller in number compared to the informal ones.¹⁴ Existing POs are active on a wide range of crops and activities such as smallstock (piggery and poultry), cocoa, coconut, honey, ngali nut, vegetables, and root crops (including sweet potatoes, taro, and cassava). These POs are also playing the role of service providers (providing inputs, infrastructure to support processing), as buyers of products and their transportation, and linking farmers to markets. Some POs are successful and continue to serve their members. Others are struggling or have been inactive or dissolved. Major challenges to PO operations include external factors such as limited access to resources (for example, land, capital, productive infrastructure, and facilities); fluctuations in market prices; and logistics adversities as well as internal organizational ones such as the lack of or limited commitment and trust and poor perception among its members.

C. Relevance to Higher Level Objectives

15. The project activities will contribute to the World Bank's twin goals of ending extreme poverty and boosting shared prosperity in a sustainable manner by targeting vulnerable communities to enhance their agricultural production as well as investing in sustainable and climate-resilient agricultural infrastructure and activities to promote increased income at the household level, in particular for women. In supporting farmers to increase smallstock and crop productivity and access to markets, the project will contribute to the Sustainable Development Goals (SDGs). The project will particularly work toward SDG1 (no poverty), SDG2 (zero hunger), SDG3 (good health and well-being), SDG5 (gender equality), SDG8 (decent work and economic growth), SDG10 (reduced inequalities), and SDG13 (climate action).

16. The World Bank Group's Solomon Islands Country Partnership Framework (FY2018–2023) (Report No. 122600) highlights three focus areas: (i) strengthening the foundations of well-being, (ii) promoting inclusive and sustainable growth, and (iii) managing uneven development. Of these, this project will directly contribute to focus area (ii) and its objective to "increase productive opportunities in agriculture." The Solomon Islands Systematic Country Diagnostic 2017 (Report No. 115425-SB) also identified agriculture as having significant growth potential, highlighting that the productivity and resilience of subsistence and semicommercial agriculture are of immediate and direct importance to the well-being of the population. The project will focus more on semicommercial farmers, as well as POs and other parties along the value chain, to improve productivity and access to markets, strengthen farmer resilience to the impacts of climate change, and reduce gender inequalities. Investments will also build on World Bank knowledge and experience, including from the Rural Development Program II (RDP II) (P149282), which supported agricultural productivity and rural income improvements in selected crops.

¹⁴ World Bank. 2020. "Producer Organization Review Study for SI ART (DRAFT)."



17. The Solomon Islands National Development Strategy (NDS) (2016–2035) maps out a strategic direction for the future development of the country, with a national vision of “improving the social and economic livelihoods of all Solomon Islanders.” The NDS highlights agriculture as part of Objective 1 (sustained and inclusive economic growth) as well Objective 2 (poverty alleviated across the whole of the Solomon Islands, basic needs addressed, and food security improved; benefits of development more equitably distributed). The Solomon Islands Agriculture and Rural Transformation (SI ART) Project will contribute to both objectives through its focus on agricultural production and commercialization of smallholder farmers and increased commercialization and export potential through the growth of agribusiness POs. Related to these, the proposed project will contribute to the Medium-Term Strategies 1 and 5, through activities aimed at enhancing sustainable and climate-resilient farming systems, supporting the policy and regulatory framework for food crop and smallstock production, encouraging the growth of key food and feed crop production as well as cash crops and access to markets, and supporting development along the value chain.

18. The SI ART will also contribute towards the Solomon Islands’ nationally determined contribution (NDC), which sets a target to reduce emissions by 30 percent below 2015 levels by 2030 and 45 percent conditional on international assistance. The NDC also recognizes the growing climate vulnerabilities of the agriculture sector and need for adaptation measures. As shown from the greenhouse gas (GHG) Ex-Ante Carbon-balance Tool (EX-ACT) analysis, the project will result in a positive carbon sequestration balance (see Figure 2). The activities will also contribute to the World Bank’s Climate Change Action Plan (2021–2025). The Solomon Islands Agriculture Sector Growth and Investment Plan (ASGIP) for 2021–2030 presents MAL’s vision of “a sustainable, competitive and profitable agricultural sector enhancing economic growth, food sovereignty and prosperity for all Solomon Islanders.” The expected outcomes for the ASGIP are as follows: (a) MAL operates as a professional, client-oriented, effective, and accountable institution offering equal opportunities to women and men; (b) enhanced food and nutrition security for all rural as well as urban areas; (c) sustainably increased production and productivity of the livestock and crops subsectors to supply domestic as well as export markets; and (d) improved efficiency and profitability for all actors along agricultural value chains. To achieve these outcomes, the ASGIP proposes four programs of investments and actions: (a) Governance, Knowledge Management, and Innovation; (b) National Food and Nutrition Security; (c) Livestock Production for Import Substitution; and (d) Crop Production for Export Earnings. The SI ART is fully aligned with the proposed ASGIP and the project scope will contribute to all four programs. The SI ART will be well positioned for the operationalization of the ASGIP through its mainstreaming into MAL and focus on rural communities with the proposed interventions.

19. Proposed investments are also taking a fragility-informed approach that is aligned with the World Bank Group Strategy for Fragility, Conflict, and Violence (FCV) and the IDA19 Special Theme on FCV. The project activities will support communities to improve their ability to cope with potential crisis situations related to food production challenges as well as support stronger institutions with more transparent decision-making processes and equitable access to resources.



II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

20. **The project development objective (PDO)** is to increase agricultural production and improve market access in selected value chains in the Project Provinces, and in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.

21. PDO level indicators are as follows:

- (a) Beneficiary agri-producers reporting increased agricultural production (Percentage)
- (b) Increase in sales, by quantity, reported by farmers participating in agribusiness producer organizations (Percentage) (presented by three commodity-specific indicators of cocoa, coconut, and poultry)
- (c) Farmers adopting improved agricultural technology (number, disaggregated by gender)
- (d) Direct project beneficiaries (disaggregated by gender).

22. The project will support climate-smart agriculture (CSA) activities across three provinces: Guadalcanal (including the capital city of Honiara), Makira, and Malaita. These provinces have a total population of around 425,000, out of which 384,000 people (around 90 percent) have agricultural holdings. It is expected that around 25,000 people from 4,640 households will be direct project beneficiaries through support to Agribusiness Producer Organizations (ABPOs) as well as those receiving training from the project. In addition, the productive infrastructure investments under the project are expected to directly benefit around 60,000 people. Thus, the total direct beneficiaries of the project are expected to be 85,000 people. The training modules, materials, audiovisuals developed under this project will be used in all the provinces by MAL through its provincial MAL office.

23. The three proposed project provinces were selected because they contribute the largest share of agriculture holdings and agricultural production base in the country. While additional provinces would also benefit from increased investment in agriculture, it was agreed that the three provinces would be targeted under this project, given the available funding. If future funding is available, MAL may consider scaling up these activities to other provinces, while also allowing time for any lessons to be incorporated.

B. Project Components

24. Preparation of the SI ART was initiated at the request of the Solomon Islands Government (SIG) through MAL just before the onset of the global COVID-19 pandemic. In view of the adverse impacts caused by COVID-19 in the country, its design has been retrofitted to help address both short and medium term COVID-19 response and recovery needs for economic growth by strengthening the capacity of households and communities for increased agricultural production, while also promoting sustainable production growth and commercialization over the medium to longer term to meet growing domestic and export demand. Achieving the PDO, as stated above, will also contribute to: (a) the SIG's stimulus package



in response to the COVID-19 pandemic and the country's recovery phase; (b) import substitution and increase in the supply and consumption of domestically produced food, smallstock feed and meat products; (c) boosting exports of selected commodities; and (d) strengthening resilience of smallholder and semicommercial farming households to climate change and climate-induced disasters (cyclones, heavy rains, prolonged dry seasons, flood, landslides, pests).

25. It is important to note the sequential nature of many of the project activities where key, foundational investments are prioritized during early implementation, followed by activities which either build on or scale up from those before it. Details of this are outlined in Annex 3. The project has four components:

- (a) Component 1: Agribusiness and Infrastructure Investments (US\$11.2million)
- (b) Component 2: Institutional Capacity Development (US\$1.8million)
- (c) Component 3: Project Management (US\$2.0 million)
- (d) Component 4: Contingent Emergency Response Component (US\$0 million).

26. **Component 1: Agribusiness and Infrastructure Investments (US\$11.2million).** This component aims to: (a) increase agricultural production and promote agriculture commercialization in selected value chains, and (b) develop productive infrastructure to facilitate the economic activities under (a). This Component is structured into two sub-components of (1) Agribusiness Producer Organizations which involves organizing smallholder farmers at the semicommercial production level into groups around a common commodity/value chain, improving their production capacity, productivity and improving their links to markets; and (2) Infrastructure Investments which address directly MAL's infrastructure investment needs to improve its service capacity as well as facilitate value chain developments.

27. **Subcomponent 1.1: Agribusiness Producer Organizations (ABPOs) (US\$5.8million).** The project will support: (a) the registration of existing ABPOs, (b) the formation and registration of new ABPOs, (c) development of ABPOs' Business Plans ('Business Plans'), and (d) provision of grants to ABPOs to execute activities proposed under their Business Plans. ABPOs will be involved in cash crops such as coconut, cocoa, honey, and smallstock production, given that these are well-known value chains for exports (cocoa and coconut) or serve domestic markets (honey, poultry, and pigs). However, the subcomponent is also open to support the cultivation of new cash crops, food crops, and feed crops which are fetching a higher price for farmers and are established in the market. These could be grown in the field and also in home nutrition gardens as relevant. Under this subcomponent, the grant to ABPOs would finance activities under the ABPO's Business Plans, including: (a) training of ABPO members; (b) supporting the training of Community Resource Persons (CRPs) and para-veterinarians (or commonly known, and subsequently referred to, as paravet) (c) honorarium for CRPs and paravets; (d) production of cash crop, food crops, and feed crops, including climate-smart production and productivity enhancement; (e) semicommercial smallstock raising; (f) nurseries and seed banks; (g) purchase and installation of value chain assets; (h) machine hiring center (including repair and maintenance); (i) improvement of sheds, fencing, and other housing infrastructure for smallstock raising; (j) disease control; (k) digital tablet devices; (l) books of records; and (m) other expenditures related to the operations of ABPOs. A separate Grant Manual will be developed by the project to guide ABPOs for grant management. Adoption of a satisfactory Grant Manual is a disbursement condition for the ABPO Grants. Trainings provided at the community level will



incorporate lessons such as: (a) holding them at times when women and men can attend; (b) providing childcare, if needed; and (c) including breaks to allow mothers to breastfeed or parents to tend to children.

28. With these supports, ABPOs are expected to benefit from: (a) improved agriculture extension on climate smart agriculture (CSA), (b) increased awareness from market intelligence, and (c) creation of value chain assets for local-level value addition and processing. Technical assistance on CSA such as intercropping, multiple cropping, feed crop production and processing, flowers as boundary crops to dissuade insects, low external input sustainable agriculture, use of high-quality seed varieties and seed treatment, use of plant and animal extracts to control insect-pest, and white/yellow sticky trap, will be provided to farmers through CRPs. Regular weather information will be disseminated among ABPO members to take precautionary measures to develop climate resilience.

29. The ABPO Business Plan must include contributions from the ABPO comprising, in monetary terms, at least 10 percent of the total business plan budget. The grant will cover the remaining 90 percent and the estimated amount to an ABPO with 50 members is approximately US\$58,000¹⁵. Eligible expenditures include purchasing value chain assets (equipment and machinery, tools, and implements); working capital; capacity building; books of register; tablets; training of CRPs and paravets; payment for CRPs and paravets; storage sheds; and operating costs. Working capital will be a revolving fund included in the Business Plan budget, which can be used as gap financing for ABPO members to borrow for relevant purchases and which would be repaid from payments received by the ABPO from buyers. Training and capacity building on postproduction, value addition, and installation of equipment and machinery will be paid by ABPOs to agribusiness partners/companies as relevant. Value chains such as honey, where women traditionally play a larger role, as well as equipment which has been shown to increase female involvement in commercial activities, such as solar dryers for cocoa, will be encouraged.¹⁶ Priority will be given to the purchase of equipment that ensure a sustainable and climate-smart value chain. This will include the building of facilities such as storage facilities using climate sturdy equipment that is resilient to climate extremes and that minimizes emissions. Priority will be given to energy-efficient equipment and the application of renewable energy where possible.

30. The same process will be applied to smallstock ABPOs. Support will be provided to improve housing, husbandry tools, fencing, feed crop production with an emphasis on cassava production to counter the increasing cost of other available feedstuffs, small to medium-scale feed crop processing and milling, and other inputs along the smallstock production chain. Investments may include the construction or upgrading of pig and poultry sheds and night shelters; poultry nesting boxes to improve egg hatching rates and reduce chick mortality; small-capacity, solar-powered egg incubators to produce day-old chicks; pig farrowing crates to reduce piglet mortality; seeds, feed crop planting materials, mini-feed mills, and equipment for the production and processing of feed crops; and small-scale insect protein poultry feed production equipment. ABPOs organized by youth and women's groups involved in smallstock production will also be encouraged. All structures and installations across the smallstock production chain will be optimized for energy efficiency and renewable energy such as solar power. Breeding pigs will be supplied by pig multiplier farms which will be supported by the project to upgrade their stock and farm housing.

¹⁵ Proportionately, project support will vary depending on the number of members per PO.

¹⁶Anan (2018) found there was a notable increase in the involvement of females in drying beans and selling dry beans after the introduction of solar dryers (Anan, Kosuke.2018. *Gender Inclusive Value Chains*).



31. Several activities will be applied to both types of ABPOs such as digital intervention, finance management and statutory obligations, and management of value chain assets. Digital intervention includes the introduction of tablets and smartphones to capture field data in a connect online-connect offline (COCO) system; support for geotagging of agriculture landholding of farmers and sheds of smallstock farmers; and regular dissemination of weather, market, and shipping information. Digital extension services will include short video shows on new climate-smart technologies, improved agricultural practices, value addition and processing, animal health services for smallstock, housing and feed management of chickens and pigs, and so on. The tablet will be part of the ABPO investment fund package. Digital extension services are likely to reduce the carbon footprint of extension services, while ensuring more timely delivery of climate information and preparedness of farmers, thereby building their resilience to climate hazards, such as cyclones and drought.

32. Financial management and statutory obligations would involve developing and distributing standardized books of registers for recording regular transactions in ABPOs. Training and demonstration programs on bookkeeping and finance management will be provided by MAL. Province MAL staff will facilitate the opening of bank accounts, ABPO registration, obtaining of a business license, audits, and other statutory obligations. Agriculture is often considered a 'risky' business due to uncertain cash flows and production, particularly in the face of climate change. To 'de-risk' farmers moving into more commercial activities, the project will promote adoption of innovations in climate-smart technologies and tools which, it is anticipated, will provide more stable returns to the farmers and ABPOs. Regular weather information, timely harvesting, value addition such as processing, grading, moisture measurement, packing, and efficient storage will assist in maintaining the quality of produce and will reduce the postharvest waste and losses substantially. The project funds, with expected finance for ABPOs from banks and microfinance institutions, will also reduce private sector investment risk by subsidizing new technologies, while allowing market pull through ABPOs determining more appropriate investments.

33. Climate-smart production and extension services would involve sharing of regular weather information, modification of cropping schedule, intercropping, and transplanting of seedlings in the north-south direction. It will also promote integrated disease and pest management (IDPM) practices, integrated nutrient management practices, regenerative agriculture, and different seed varieties, low heat intensity smallstock housing designs which can withstand climatic hazards such as flood and drought.

34. **Management, repair, and maintenance of value chain assets.** ABPOs will select one or two youth(s) from member households to be trained to undertake the repair and maintenance activities. MAL will provide skill development training and demonstration, and these trained youth will be able to provide repair and maintenance services on a fee-for-service basis to both ABPO and non-ABPO member households. Expenditures on repair and maintenance of major equipment and machinery will be borne by the ABPO. The training cost of the youth will be part of the Community Managed Extension System (Subcomponent 2.1).

35. **Subcomponent 1.2: Infrastructure Investments (US\$5.4 million).** Productive infrastructure under the SI ART will focus on targeted investments which provide the foundation for economic and production activity and generate positive spillover benefits. Investments will directly enhance MAL's service and research capacity, MAL's provincial offices and facilitate market access in Makira Province. The project will finance the site clearing, design and construction of a training center and a research center in Tenaru, Guadalcanal; rehabilitation of MAL's national research headquarters; site clearing, design and



construction of MAL's new Pig Breed Improvement Facility in Tenaru, Guadalcanal; site clearing, design and construction of a market in Makira and a storage facility in Kira-Kira, Makira; and site clearing and demolition, design and construction of MAL's provincial offices in Makira and Malaita Provinces. The expected number of direct beneficiaries for these proposed investments is around 60,000 people throughout the project's lifespan. MAL will be the direct investment owner and operator for these investments, except for the market and storage facilities in Makira which are owned by the Makira Provincial Authority, and MAL will work closely with the authority to manage those investments. It is expected that the large investment to build the Pig Breed Improvement Facility in Tenaru will increase the supply of pig breeding stock to semi-and fully commercial pig farmers. The new farm will have an 80-sow herd, which will provide sufficient offspring to supply existing commercial and semi-commercial farms, and multiplier farms, with breeding boars and sows. The breeding stock from the Honiara pig breeding farm will be transferred to the new Tenaru farm. To counter the increasing costs of imported and locally available feedstuffs, and to support the addition of pig multiplier farms, support will be provided to grow and process cassava as an important source of pig feed. Other infrastructure investments to MAL facilities are expected to boost MAL's enabling services and its research capacity in feed crop production for national coverage, beyond the three project provinces.

36. No land acquisition will be required in this project. Locations for MAL facilities have all been identified as having secured land lease or are MAL-owned land with regard to upgrading of existing infrastructure. For the market and storage facilities in Makira, MAL and Makira Provincial Authority will conduct due diligence consultations to participatorily identify relevant locations that would best serve the needs of local people and businesses to facilitate the value chains and economic activities of the province. MAL has developed some design layouts and sample designs for MAL provincial offices are currently available to expedite the preparation process. A selected MAL training center and a selected MAL research center, to be financed under the SI ART, will strengthen the training division of the ministry to organize continuous training programs which will build the capacities of extension service providers¹⁷ and farmers to improve the performance of the agriculture and smallstock subsector. The project will include climate-resilient designs such as flood risk management and the promotion of energy efficiency/renewable energy in the infrastructure investment decisions. The project will also reconstruct and/or adopt improved engineering designs using international best practices to enhance their climate resilience.

37. **Component 2: Institutional Capacity Development (US\$1.8 million).** This component aims to improve the agriculture and smallstock extension system of MAL by improving the knowledge, skills, and capacity of current staff and to strengthen MAL's outreach capacity through the engagement of young professionals (YPs) and interns. It will also support renewal of the smallstock sector and train additional paravets to provide smallstock farm biosecurity and provide basic animal health services. Development Market Place events will be organized to show case and give awards to high-quality produce or commodities and best practices or innovations for establishing market links and scaling up.

38. **Subcomponent 2.1: Community Managed Extension System (US\$1.0 million).** This subcomponent will focus on five areas outlined below. Training of MAL staff, YPs, and CRPs will be prioritized at the start of the project to ensure proper technical assistance is ready and available before rolling out support to ABPOs under Component 1. Extension services are one of the leading ways to ensure the adoption of CSA practices. This activity will ensure that CSA is mainstreamed in all training of MAL

¹⁷Extension service providers include extension staff, YPs, CRPs, and so on.



staff, YPs, and CRPs, and the extension services they offer through CSA training modules use of information technology to distribute climate information through digital extension by organizing video shows at the doorstep of farmers.

- (a) Training of trainers (ToTs) will use modular training to develop new knowledge and enhance the skills of extension staff in MAL. Where necessary, an outside institution will be contracted by MAL to develop training modules and organize the ToTs. These training modules may include formation, nurturing, and strengthening of ABPOs; bookkeeping and financial management (FM) of ABPOs; GAPs and productivity enhancement methods/practices of commodities, such as climate-smart practices.
- (b) CRP (and paravet) training will be done by MAL extension staff at the province level, with technical support from Solomon Islands National University (SINU) or any other training service providers when needed. Trainings will be developed in local languages and include demonstrations, simulations, and video shows in the project provinces. Extension staff will develop and provide the training aids to each participant, with audiovisuals loaded on their tablets. After each training, extension staff will develop an action plan for CRPs and organize demonstrations in the villages.
- (c) CRPs will provide one-day training programs to ABPO members or their families. CRPs will visit the agriculture fields and smallstock farms of ABPO members to provide doorstep extension services and will also capture project progress in the digital management information system (MIS). A detailed guideline on selection, training, tasks, outputs, and incentive payment of CRPs will be developed by the project.
- (d) Degree/diploma graduates of the Faculty of Agriculture, Forestry, and Fisheries (FAFF) of SINU and/or from other recognized agriculture universities in the Pacific countries will be recruited as YPs on a contract basis (as project consultants) and placed where there is an absence of extension officers in the catchment area of the ABPO. YPs will be responsible for providing support activities around the development and rollout out of ABPO Business Plans, technical assistance, marketing, monitoring, as well as providing general agriculture extension. Graduates will stay in villages of ABPOs while on the job and the project will aim for 50 percent of YPs to be women which will be possible based on current levels of female enrollment in FAFF.
- (e) Students pursuing diplomas/degrees¹⁸ will be inducted as interns from FAFF (SINU) during their scheduled internship program. Based on the project requirements, best suited students will be selected as interns who will be supported with relevant training and small stipends to conduct their internships in the project areas. The project will also facilitate FAFF to include the students' learning on CSA from the internship to be discussed in the classroom and include in the course curriculum as relevant. The internship program will be financed by the project through a memorandum of understanding (MOU) to be signed between MAL and FAFF, SINU. Such financing on training and stipends for the selected interns will be up to the project's closing date. MAL and SINU may wish to use their own funding to continue with the internship program as relevant.

¹⁸ Including Diploma in Agriculture, Bachelor of Science in Tropical Agriculture (Agronomy-Livestock and Crops), Bachelor of Science in Tropical Agriculture (Extension and Education), and Bachelor of Science in Tropical Agriculture (Economics and Business).



39. **Subcomponent 2.2: Smallstock Sector Renewal (US\$0.55 million).** This subcomponent will support the MAL Division of Livestock to enlarge its Pig Breed Improvement Program by increasing and upgrading pig multiplier farms through the provision of training and equipment in the project provinces as well as upgrading of household-based and semicommercial poultry production; provide small-scale slaughter facilities for pigs and poultry; support feed crop research; and improve animal health service support. It is expected that these interventions will lead to improved production and productivity, reduced mortality, increased consumption of animal protein, increased body weight, and increased sales of pig and chicken meat in domestic markets. The activities under this subcomponent are as follows:

- (a) **Smallstock slaughter infrastructure.** Pig and poultry slaughter slabs will be established at the ABPO level in strategic locations with high smallstock concentrations (most likely near Honiara and Auki). Expressions of Interest (EoIs) to build, own, and operate the slaughter slabs will be sought from the private sector (agribusiness companies and registered ABPOs). Project support to the selected private sector entity will be in the form of a Sub-grant in an amount up to US\$15,000 or 49 percent of the total estimated costs for each slab, whichever is the smallest. The Project Implementation Manual (PIM) will set forth a template Sub-grant Agreement and detailed eligibility and other criteria, procedures, and requirements for carrying out the Sub-grants. The Sub-grant can only be implemented once a satisfactory PIM is adopted, and a satisfactory Sub-grant Agreement is signed with the Private Sector Entity receiving the Sub-grant. The waste management system, which is an integral part of the slaughter slabs, will be designed to treat liquid and solid waste, the latter by means of biogas production where possible. The project will support the training of four meat inspectors from MAL to attend a three-month training course in Australia. Upon successful completion, they would receive an international slaughter certificate, which, together with slab design and slaughter operations, opens the way to best practice Hazard Analysis and Critical Control Points (HACCP) hygienic slaughter accreditation.
- (b) **Adaptive research in feed crops.** New high-protein climate-resilient feed crops such as pulses, beans, winged bean, cassava, and cowpea as well as small-scale insect protein feed production for households producing poultry will be introduced. Field trials on new high-protein feed crops will be conducted on participating households and lead farmer plots to ensure that the applied research conducted will be adapted to field conditions. Training and demonstrations will be organized for the CRPs who will in turn train ABPO members, and MAL extension staff will provide technical advisory support.
- (c) **Animal health support services.** The project will finance the supply of veterinary drugs to the MAL central veterinary laboratory and one veterinary laboratory in each of the three project provinces, and the purchase and supply of toolkits to selected paravets, to support basic disease control and animal health services. In the absence of graduate veterinarians, paravets will have to take over significant parts of the animal health duties normally carried out by veterinarians. Additional paravets will be trained by using the internet paravet training course provided by the South Pacific Community and will be equipped with field kits of basic diagnostic tools. The CRPs, with support from paravets, will be trained to provide simple diagnostic and treatment procedures, such as hygiene, farm biosecurity, parasite counts, castration, injections, and vaccinations. The project will support a veterinary consultant to assist MAL to conduct a national livestock disease survey, which has not been updated since 1997. The survey will contribute to the Government's intention to gain membership into the World Organization for Animal Health (OIE).



(d) **Pig Breed Improvement Program.**¹⁹The project will finance relevant technical support for the Pig Breed Improvement Program which will be based at a new Pig Breed Improvement Facility at Tenaru, Guadalcanal (to be designed and constructed under Subcomponent 1.2 to replace the existing farm in Ranadi, Honiara). The program will be developed gradually, starting with 30 sows transferred from the existing pig breeding farm near Honiara and eventually reaching 80 sows. The project will provide training and relevant equipment intended to enhance the operation of selected pig farms and pig multiplier farms. Offspring from these sows will be sold as replacement or expansion stock to existing multiplier farmers, who are willing to sell stock to commercial pig farmers. The Tenaru farm will use cassava as a main feed ingredient and purchase the raw product from surrounding farmers and farmer ABPOs.

40. **Subcomponent 2.3. Innovations and Development Market Place (US\$0.25 million).** This subcomponent will focus on promoting and supporting the exchange of ideas as well as innovations/best practices, which are successfully implemented or demonstrated among youths, ABPOs, entrepreneurs, buyers, policy makers, and investors.

41. This subcomponent has two parts: (a) Annual Innovation Competition and (b) Development Market Place. Under the Annual Innovation Competition, the project will invite submissions of innovations from individuals, ABPOs, and entrepreneurs on an annual basis. MAL and the Project Management Unit (PMU) will set up a committee with members from MAL and relevant agencies to assess the submissions. It is expected that five innovations per year will be selected and awarded with a certificate and a prize (in the form of farm tools or farm equipment with small value of up to SBD10,000 (approximately US\$1,200) in an event to celebrate and recognize the winners and their innovations. The awards will be strong incentives for more innovations, especially among rural youths to boost their interest in agriculture and rural enterprise. This has been proved successful under RDPII. Winners may be invited to work with existing ABPOs/develop a new ABPO or to associate with the project as resource person to work, guide, and scale up innovations among the ABPOs in the project provinces.

42. A physical Development Market Place event will be organized in Year 3 of the project to further facilitate the exchange of innovations and interactions among ABPOs, buyers, traders, and so on, for replication and scaling up of innovations. This will be organized by the PMU with support of an outside expert agency to select innovations in a transparent manner, for showcasing and wider adoption. Selected best practice innovations can be scaled up among ABPOs as relevant. Apart from this, the best quality products from selected commodities/value chains will also be chosen for establishing market links with national and international buyers. The selected innovations will be showcased, celebrated, and awarded with a certificate and a prize (in the form of farm tools or equipment with small value of up to SBD10,000 (approximately US\$1,200) in the Development Market Place event to encourage continuous innovations. The innovations will be invited, short-listed, and evaluated based on predetermined indicators such as innovativeness, applicability, sustainability, outreach, and ability to scaleup. Innovations that promote climate-smart approaches in the production of commodity value chains will be prioritized. Selected innovations will also be screened for climate relevance as part of the selection criteria.

¹⁹ The Pig Breed Improvement Program is developed and implemented by MAL to produce and distribute improved pig breeding stock by means of a multiplier system, in which approved lead farmers will receive breeding stock from the Pig Breed Improvement Facility in Tenaru, Guadalcanal (to be built by MAL) for multiplication and sale to semicommercial and fully commercial pig farmers.



43. **Component 3: Project Management (US\$2 million).** This component will establish the PMU within MAL which will be responsible for the overall implementation of the SI ART Project. Key positions will include a project manager as well as FM, procurement, M&E, environmental safeguards, social safeguards, and communications specialists. Additional support and technical positions will be brought in, as needed. The PMU will be responsible for the day-to-day project activities, compliance with provisions of the Financing Agreement and SIG policies and guidelines, project administration, preparation of grant withdrawal applications, and maintenance of records. Key activities will be the MIS development as well as baseline and end line impact assessment surveys and the preparation and implementation of a communications strategy, a grievance redress mechanism (GRM), and training and workshops to upskill other MAL staff. Under this component, the project will aim for at least half of the participants in workshops, training events, seminars, and conferences to be women.

44. **Component 4: Contingent Emergency Response Component (CERC) (US\$0 million).** Following an eligible crisis or emergency, the recipient may request the World Bank to reallocate project funds to support emergency response and reconstruction. This component would draw upon the uncommitted credit/grant resources from other project components to cover the emergency response. A 'CERC Project Implementation Manual' (CERCPIM), acceptable to the World Bank, will be prepared by MAL for the implementation of the CERC by the recipient's Ministry of Finance and Treasury (MOFT) and constitute a disbursement condition for this component. Should the CERC be triggered, MOFT will be the implementing agency of the CERC.

Project Sequencing and Internal Phasing

45. The project is designed to facilitate continuous learning and integrate lessons into the project activities for improving performance. The sequencing and phasing follow the results chain. Phase I will cover the first 18 months of the project. This phase will be for setting up the project system, structure, groundwork, and essential training for capacity building of MAL extension staff, who will implement the project at the province level. The implementation architecture will be strengthened with the inclusion of high-quality YPs from FAFF. Extension pilots will be carried out in a few villages during Phase I to fine-tune the procedures and processes information and registration of ABPOs. Phase II will be from the second half of Year 2 through to the midterm review of the project. The project will roll out all of its activities in this phase with new ABPOs formed or existing ABPOs strengthened based on the established systems and processes developed from Phase I. Training will be organized for the ABPOs and extension services will be strengthened by developing a CRP within each ABPO. An assessment of ABPOs, based on systems and processes described in the PIM and Grant Manual, will determine their eligibility to develop a Business Plan, with support from YPs or agribusiness companies/lead partners, who wish to provide support and purchase their commodities to export. Value chain assets will be financed at the ABPO level to strengthen the postproduction and processing activities for better market access. Productive infrastructure investments will be supported to enhance MAL's enabling capacity and services. Adaptive research on feed crops for smallstock will be carried out for adoption in the crop/smallstock cycles. Phase III will be from the midterm review through to Year 5 of the project when project activities will be scaled up and further fine-tuned after the lessons learned at the midterm review. The Development Market Place will support the integration of best practices into ABPOs and help establish market links. The detailed project sequencing and phasing plan is presented in Annex 3.

Strategic Alignment



46. **Citizen engagement.** Considering beneficiary needs and feedback will be an important part of the SI ART, particularly for Component 1 where farmers and ABPOs are expected to prepare and submit Business Plans. Several in-country consultants have undertaken field and secondary research to inform the project design during the preparation stage; specific areas of focus include food security/resilience, local consultations, smallstock production, ABPOs, gender, and extension services. Additional citizen engagement and stakeholder feedback was captured through the Environmental and Social Management (ESMP) Framework, which includes consultations with key stakeholders to provide information on the potential environmental and social risks of the project. During implementation, the project's communication and outreach tools will also support citizen engagement through general updates and advice and opportunities to close the feedback loop through a GRM and surveys. Exploring and capturing best practices, innovations, and better quality products will be possible through the Development Market Place as well as providing opportunities to engage with a wider audience. The Results Framework includes two intermediate indicators: (a) Beneficiaries with access to project infrastructure investments that feel these reflected their needs (disaggregated by gender) and (b) Grievances addressed within 3 months.

47. **Nutrition.** The Solomon Islands faces the double burden of malnutrition-related diseases, reflected in a high prevalence of child stunting and wasting, while rates of overweight/obesity are rising. According to the 2012–2013 HIES, 38 percent of children age 5 and under were stunted, a rate considered 'high' according to World Health Organization (WHO) thresholds. Furthermore, 16 percent of children under age 5 were wasted, a level considered 'alarming' according to WHO thresholds. Rates are highest among the bottom 40 percent of households and vary across provinces.²⁰ Smallholder agriculture is a key source of food and nutrition for both rural and urban populations, and given the vulnerabilities faced by farming households, the potentially negative impact on food security and nutrition is a serious concern.²¹ SI ART investments will also support production (and promote consumption) of more diversified staple food crops such as cassava, sweet potato, yam, and other green and leafy vegetables as well as high-protein food bean and pulse crops for smallstock production through the relevant business plans .The project will support diversification to other staple and nutritious food crops, which with increased production and possible sales to markets would contribute to increasing household incomes.

48. In recent years, dietary patterns in the Solomon Islands have also changed and, increasingly, rice which is imported into the country is becoming the main source of energy consumption. This creates an additional vulnerability with possible supply chain disruptions, such as during COVID-19. A 2019 assessment also revealed that, to secure cash income, rural women are turning to cash cropping since it is more lucrative. Having a home nutrition garden with different food groups maintained around the year will improve the availability of adequate nutritious food to enhance dietary diversity. Awareness will be strengthened at the ABPO level on the importance of consuming the food crops or smallstock produced in their home nutrition gardens, as relevant.

49. **Maximizing finance for development.** Through activities, particularly under Component 1 and Subcomponent 2.2, the project will leverage private sector contribution and existing assets and infrastructure to increase the investment and improve the scale of business operations. The total investment will be further increased with private investors co-financing poultry slaughter slabs and pig

²⁰ According to the 2013–2014 HIES the rate of stunting highest in Makira (at 46 percent) and lowest in Guadalcanal (at 33 percent).

²¹Solomon Islands Systematic Country Diagnostic 2017.



slaughter slabs as well as to supply innovative and climate-resilient technologies which support the business needs of the ABPO. This will be complemented through project support on upgrading government policy and regulations, which will target a more conducive environment for private sector investment and loan financing from banks. The proposed Development Market Place will also support market links and encourage new private sector investment.

50. Only a few commercially oriented farmer-processor-traders are operating in the Solomon Islands and are mainly for cocoa, coconuts, and some spice crops. Since 2010, there has been increasing copra oil and virgin coconut oil processing for value-added products and oil exports. The proposed activities will use the value chain studies which have already been carried out to identify gaps and support private sector development. The project will also build on the existing value chain assets and infrastructure in the promoted value chains developed by earlier projects by forming or establishing ABPOs and investing only in the repair and maintenance of those old assets and infrastructure.

C. Project Beneficiaries

51. The SI ART Project beneficiaries include members of ABPOs who are engaged in semicommercial production and marketing in agriculture and smallstock commodities which are supported by the project. They are mostly smallholder farmers/producers who are involved in: (a) semicommercial cocoa and coconut production/processing, (b) honey and other niche local commodities, (c) semi-commercial pig and poultry producers, (d) women's poultry producer groups, (e) consumers receiving hygienically slaughtered pork and chicken, (f) mini-feed mill/feed crop processors, (g) feed crop production groups, and (h) village pig and poultry producers receiving husbandry training.

52. Direct project beneficiaries also include MAL and its network in the project provinces that are expected to be supported with additional resources, technical assistance, new technologies, and exposure to international best practices. Smallstock and extension sectors are expected to benefit from investments both in upgraded infrastructure and service/research capacity improvements.

53. **Gender.** Despite the commitment of the SIG to promote gender equality, the conditions surrounding women remain difficult. According to the 2009 census, 62 percent of women and 64 percent of men ages 12 and older were in the labor force, including those who produce goods for their own consumption (subsistence work). However, of those employed, women were only half as likely as men to be in paid work (26 percent of women and 51 percent of men).²² This gap is especially pronounced in rural areas, where less than 20 percent of women perform paid work.²³ Both women and men are active in subsistence work in nearly equal numbers, yet the division of tasks, responsibilities, equipment use, and knowledge still reveal various substantial gender gaps between men and women. Men tend to undertake the more strenuous work of ploughing land, clearing gardens, heavy planting and harvesting tasks, and construction work, whereas women do more ongoing and labor-intensive tasks such as maintenance of seedlings and gardens, intercultural operations, and post-harvest processing.²⁴

²² FAO, and SPC. 2019. *Country Gender Assessment of Agriculture and the Rural Sector in Solomon Islands*. Honiara.

²³ Pacific Financial Inclusion Programme. 2019. *Power Women's and Girls' Access and Agency Assessment: Solomon Islands*.

²⁴ FAO, and SPC. 2019. *Country Gender Assessment of Agriculture and the Rural Sector in Solomon Islands*. Honiara.



54. Despite their prominent role in agriculture, women face constraints to increasing their agricultural productivity and participating in agricultural value chains. Statistics show that rural livelihoods are heavily concentrated in the subsistence sector and that women play a prominent role in selling agricultural produce and goods produced in the home, in markets, or alongside roads.²⁵ The gender assessment conducted by the project confirms previous findings²⁶ that in the Solomon Islands men control most of the productive resources and services, including land, tools and equipment, income and savings, raw material, transportation, livestock, training and extension, farming inputs, and technical agricultural information. In particular, a small survey of 64 male and female farmers in the proposed project sites revealed that in 73 percent of the surveyed households, male household members were reported to have sole control over the land and make decisions regarding how the land should be used. It suggests a common practice that male household members tend to have more access to necessary information, equipment, and new agricultural technologies. In accordance with this, 83 percent of female respondents, compared to 57 percent of male respondents, identified lack of information as a major barrier to accessing resources. In only 3 percent of cases women were reported to control income from agriculture; on the other hand, men were the sole decision-makers over agricultural earnings in 41 percent of households. In more than half of respondents' households, men were reported to have exclusive access to financial services. These findings were confirmed by focus group discussions, where limited access to savings and household-level financial planning were identified as an important constraint for women's productivity.

55. Along the value chain, women dominate food production roles while men continue to dominate processing and technical skills. Women's traditional roles and limited say over household finances, their lower literacy, and limited access to financial services and information are important barriers for their participation in commercial agriculture.²⁷ In addition, 24 percent of women ages 15 and above have never attended school, compared to 14 percent of men. Only 27 percent of women nationwide (compared to 42 percent of men) are reported to have access to any financial products, including bank accounts, microfinance, savings groups, and credit unions. This leads to women's stark underrepresentation among cash crop producers and exporters. Data from the Commodity Export Marketing Authority in the Solomon Islands reveal that in 2020 only 3 (16 percent) out of the 18 registered cocoa exporters in the country were women.

56. At the government level, MAL currently has 138 extension and technical staff spread throughout each of the provinces, and of those, only 37 are women (27 percent). This is acknowledged as an impediment for engaging with and supporting female farmers across the country. Coupled with the low literacy rate for rural women and norms related to unpaid household work, this has contributed to low participation in farmer group meetings. Some estimates show that women are responsible for more than 80 percent of unpaid care work within households.²⁸ While obstacles exist for employing more women in the extension officer roles, such as women's safety during outer island travel, as well as long periods away from the home, preparatory studies and discussions found that increasing the share of women extension staff could lead to greater engagement of female farmers. Discussions also revealed that options were

²⁵ FAO, and SPC. 2019. *Country Gender Assessment of Agriculture and the Rural Sector in Solomon Islands*. Honiara.

²⁶ FAO, and SPC. 2019. *Country Gender Assessment of Agriculture and the Rural Sector in Solomon Islands*. Honiara.

Anan, Kosuke. 2018. *Gender Inclusive Value Chains: Improving Women's Participation in Solomon Islands (English)*. Washington, DC: World Bank Group.

²⁷ PHAMA (Pacific Horticultural and Agricultural Market Access Program). 2016. *Cocoa and Coconut in the Solomon Islands: A Family Affair*. Technical Report #096.

²⁸ Pacific Financial Inclusion Programme. 2019. *Power Women's and Girls' Access and Agency Assessment: Solomon Islands*.



available to manage the obstacles highlighted above. The recruitment of female extension workers through the increased pool of female YPs would lessen the role of household-level constraints to travel and ensure that targets are met.²⁹ Focus will also be placed on addressing women's mobility and safety concerns in conducting the work of extension workers such as traveling by boat (often owned and operated by men) and visiting remote communities with other male colleagues. Actions that will be taken include the development of codes of conduct for extension workers on sexual harassment, training on the issue during onboarding of new staff and for existing staff, and the development of reporting channels and support services for survivors. Others will include assessing work hours that offer flexibility for female extension workers, looking further into transport options that enhance women's sense of safety and reducing safety risks for community visits (for example, going in a group versus solo).

57. While there are no studies on gender gaps in agricultural productivity in Pacific Island countries, a World Bank analysis from Timor-Leste indicates that women's lower participation in farmer groups, lower access to agricultural implements, and limited participation in cash crop production contribute to the large gender gap in agricultural productivity.³⁰ That is why ensuring that women have equal access to the activities and resources provided by Components 1 and 2 is crucial for increased inclusion and for achieving the project's objectives to strengthen food resilience in rural communities and improve institutional capacity for smallholder extension provision.

58. Under Subcomponent 1.1, focus will be placed on ensuring women-led/owned ABPOs are included and can enhance their agricultural production and commercialization. To promote women's participation in household planning and improve business skills, the household-level trainings under Subcomponents 1.1 will incorporate a module on financial literacy and planning. Under Component 2, a recruitment target of 50 percent female YPs will help encourage female farmer participation and access to extension support. It is also expected that MAL will increase the number of extension staff over the life of the project, with the plan to hire them through successful YP assignments. The home visit design of the community extension worker program supporting ABPO members under Component 1 will further facilitate women's participation by addressing their time and mobility constraints.³¹ The gender gaps targeted by the project, along with corresponding actions and indicators, are summarized in table 1.

Table 1. Gender Gap, Action and Indicators for the SI ART project.

Gap	Action	Indicator
Women have limited decision-making power, access to agricultural knowledge and technology	Adopt a household-centered membership approach in ABPOs, where both male and female participation will be supported (Subcomponent 1.1.).	Farmers reached with agricultural assets or services—Female (CRI, Percent): Baseline 0, Target 50 percent
Women face barriers to elevating their roles in cash crop value chains	Incorporate inclusive strategies, such as training of female community resource persons (Subcomponent 2.1) as well as provision of childcare and breastfeeding	ABPO members trained in agriculture and smallstock production in climate stressed areas, where females represent: Baseline non-applicable as

²⁹ Manfre, C., Rubin, D., Allen, A., Summerfield, G., Colverson, K., Akeredolu, M. 2013. "Reducing the Gender Gap in Agricultural Extension Services: How to Find the Best Fit for Men and Women Farmers." MEAS Discussion Paper.

³⁰ UN Women and World Bank East Asia and Pacific Gender Innovation Lab. 2018. *Women Farmers in Timor-Leste: Bridging the Productivity Gap*.

³¹ Household visits will take place at times convenient for both males and females.



Gap	Action	Indicator
	breaks for community-level trainings (Subcomponent 1.1).	ABPOs never existed before, Target 50 percent
Women are underrepresented among technical extension staff in MAL	MAL will hire new extension and technical staff during the life of the project. These staff will largely be sourced from the YP program under the project (where 50 percent will be females) (Subcomponent 2.1)	MAL extension and technical staff which are women (Percentage): Baseline 27 percent, Target 31 percent

59. **Gender-based violence.** The Solomon Islands is among the countries with highest prevalence of gender-based violence (GBV) in the world. About 64 percent of women ages 15–49 who have been in a relationship have experienced physical or sexual intimate partner violence in their lifetime.³² In addition, 61 percent of all women ages 15 and older have experienced some form of physical violence from a non-partner. While evidence shows that perceptions are changing over time, violence against women and girls is still widely accepted, with 36 percent of men and 27 percent of women in 2019 reporting that domestic and sexual violence is sometimes acceptable.³³ GBV is an important barrier in women's successful participation in agricultural and other economically productive activities;³⁴ addressing GBV prevention and response can therefore contribute to the overall success of the project. It is also important that the project follows a 'Do No Harm' approach—that is, the project does not create any increased risk of GBV for participants.

60. To achieve these objectives, the following actions will be implemented as part of Subcomponent 2.1: (a) mapping existing GBV-related services in project areas; (b) developing information, education, communication materials on these services; (c) conducting regular awareness raising sessions on GBV, consequences and available services in project areas; (d) training project staff on GBV and responding to any disclosures of violence; and (e) providing assistance for the development of a sexual harassment code of conduct and training sessions for CRPs, YPs, interns, and MAL staff.

D. Results Chain

61. The results chain of the project responds to the key challenges identified—limited availability of extension services for farmers and lack of access to inputs and infrastructure and markets for farmers to increase productivity. The project aims to contribute to sustainable agricultural production, increasing crops and smallstock productivity and access to markets through productive partnerships. It will be achieved by the project through three development pillars: (a) supporting agricultural production and agriculture commercialization through agribusiness partnerships and innovations to improve value chains of selected commodities; (b) building and strengthening institutions of smallholder farmers through improved agriculture extension and advisory services and appropriate technologies leading to higher production and productivity; and (c) improving institutional capacity of MAL extension systems by establishing adaptive research to supply improved variety of seeds, improve breeds, and enhance the skills of extension staff for effective extension services at last mile.

³² SPC. 2009 *Solomon Islands Family Health and Safety Study: A Study on Violence against Women and Children*.

³³ IFC. 2019. *The Impact of Domestic and Sexual Violence on the Workplace in Solomon Islands*.

³⁴ IFC. 2019. *The Impact of Domestic and Sexual Violence on the Workplace in Solomon Islands*.

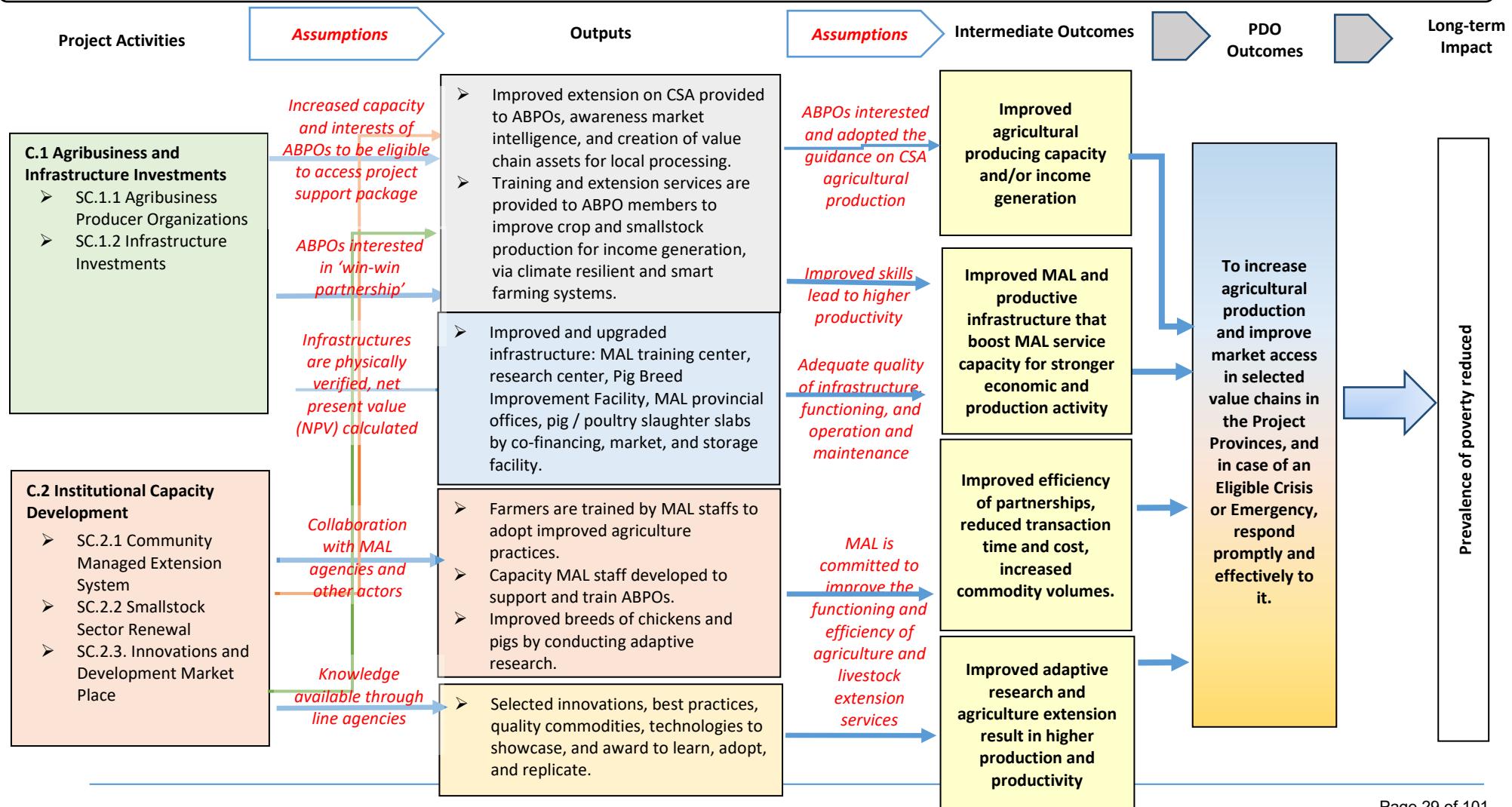


62. The project's components and subcomponents will closely link with each other for the optimal achievement of the PDO. Component 2 will be creating the enabling environment and services to facilitate the formation, production, and development activities in Component 1. Thus, MAL staff, YPs, and CRPs will provide the needed extension services to ABPOs members, while the operations of ABPOs will inform the MAL's renewal of smallstock and extension sectors. The Development Market Place events will help introduce innovations to the ABPOs' activities as well as potential buyers to the ABPOs. Within Component 1, different of ABPOs will 'provide' services and products that are relevant for each other for the 'internal market' created by the project. The productive infrastructure under Component 1 is expected to provide direct support to the ABPOs in their activities. ABPOs on food crop and feed crops will sell feeds to ABPOs on smallstock which sell organic and compost fertilizers to enrich the soils of feed crops ABPOs. In other words, the project will support an 'internal ecosystem' whereby ABPOs could be buyers and sellers at the same time in relation to other ABPOs.



Figure 1. Project Theory of Change

Problem Statement: Lack of access to inputs, infrastructure, and markets for farmers to increase productivity; limited availability of extension services for farmers.





E. Rationale for Bank Involvement and Role of Partners

63. The World Bank has been supporting the agriculture sector in the Solomon Islands for almost a decade, starting with the first Rural Development Program (RDPI) (2011–2014) and its successor, the RDPII, which will be closing on February 28, 2022. The SI ART Project is the World Bank's first stand-alone agriculture project for the Solomon Islands, building on the experience and knowledge gained from implementing the agriculture components of both phases of the RDP.

64. Agriculture is the only sector where the majority of rural households or families in the Solomon Islands are involved—be it in farming to meet basic food needs or as a source of household income for meeting other needs such as education and access to services or to buy goods. By continuing support in the three provinces of Malaita, Guadalcanal, and Makira, the project will support greater agricultural production and increased incomes among the beneficiary households. In addition, a large proportion of children under the age of 5 experience stunting due to a lack of or limited protein supply in the local diet. There is a need to increase meat production as a source of protein for the local diet, and the SI ART Project is designed to help to reduce the gap.

65. The COVID-19 pandemic has affected the movement of imported food, livestock feed, and breeding egg supplies in an unprecedented way. This includes rice stocks and other imported meats such as beef, chicken, pork, imported livestock feed, and hatching eggs. In response, the SIG has encouraged all the Solomon Islands households to invest in food security by growing their own food, such as vegetables and root crop gardens. The project comes at the right time to provide financial and technical assistance to targeted agri-producers for agricultural production improvement and income generations.

66. The World Bank has a strong partnership with the Department of Foreign Affairs and Trade (DFAT), Australia, the IFAD, and the European Union in the RDPII. These donors co-financed the RDP projects with the World Bank, and all have learned and shared valuable lessons. While the SI ART is the World Bank's first stand-alone agriculture project, the World Bank team will continue to work in close collaboration with these and other partners such as the Pacific Community (formerly SPC) and the Food and Agriculture Organization (FAO) which continue to engage in the agriculture sector. The United States Agency for International Development (USAID) announced a plan to support a US\$25 million program called Strengthening Competitiveness, Agriculture, Livelihoods and Environment (SCALE) in Malaita Province. The SCALE is still at a concept stage. MAL is coordinating with the Ministry of National Planning and Development Coordination (MNPDC) and the Ministry of Finance to ensure there are synergies between the SCALE and SI ART.

67. The project has also benefited from various background studies conducted for agriculture projects supported by other donors. The lessons from these studies have been incorporated into the project design. During implementation, closer donor collaboration would be sought to ensure efficient and effective use of funds as well as for sharing and dissemination of knowledge and ideas for improving service delivery at the local level.



F. Lessons Learned and Reflected in the Project Design

68. **The concept of the SI ART builds on experiences from RDP I and RDP II** as well as from other World Bank and donor-funded projects on agribusiness partnership and rural livelihoods.³⁵ It builds on other development partners' initiatives such as Pacific Horticultural and Agricultural Market Access (PHAMA) and 'Strongim Bisnis' funded through DFAT. The key lessons learned include the following: (a) implementation capacities of MAL are low and project support to MAL should target well-defined areas linked to the project's focus such as developing ABPOs, providing improved agriculture extension, and facilitating private sector and nongovernmental organizations (NGOs) for linking ABPOs to markets; (b) embedding the project within the MAL structure helps ensure optimal mainstreaming and institutionalization, framing farmer-friendly policies, and sustainable capacity building; (c) smallstock development could be further supported at the community level for income generation, nutrition improvement, and reduction of meat imports; and (d) there are benefits to the use of newly available digital technologies for better climate-smart activities, outreach, and M&E of the project's interventions.

69. **Development support through group approach of ABPOs.** The project focuses on ABPOs as a unit to mobilize and support smallholder farmers through collective action. The benefits of facilitating and targeting ABPOs are threefold: (a) smallholder farmers can participate more effectively in the value chain of local cash crops (for example, cocoa, coconut, smallstock, honey, and vegetables) as a group rather than as individual farmers as they gain more bargaining power from dealing with input traders or in selling their products through contract-based arrangements; (b) it is important to nurture the development of rural enterprises through collective action that have a clear vision, pathway, and incentives to maintain their groups; and (c) cost- and logistic-effectiveness can be achieved through community-based extension services where support takes place around ABPOs.

70. While promoters of ABPOs realized the importance of technical or business training to run the commodity business, up until now there has been inadequate knowledge and experience on the institutional building aspects of ABPOs. The SI ART will include detailed procedures in the PIM for the formation, nurturing, and strengthening of ABPOs. The importance of relevant and timely information is another lesson learned. Knowledge of aggregated volumes of commodities (from both registered and unregistered ABPOs) across islands can help facilitate taking advantage of scale economies and reduce transportation disruptions or delays, while trust among farmers needs to be strengthened to encourage them to come together for collective aggregation.

71. **The Pig Breed Improvement Program in the Solomon Islands is unable to move faster without the involvement or commitment of multiplier farmers.** The present MAL pig breeding farm at Ranadi, Honiara, will be phased out and replaced with a new Pig Breed Improvement Facility in Tenaru which will maintain a nucleus herd of foundation stock from which second and subsequent generations of offspring are sold to existing and additional multiplier farmers. The new breeding farm to be established at Tenaru will increase the supply from replaced pigs, provided additional multiplier farmers can be included to expand the pig multiplier system. To speed up the Pig Breed Improvement Program, four multiplier

³⁵Those include Bolivia Rural Alliance Projects, Viet Nam Agriculture Competitiveness Project, Viet Nam Second Northern Mountain Poverty Reduction Project, State of Maharashtra's Agriculture and Rural Transformation Project – India, Mongolia Livestock Commercialization Project.



farmers in each project province who have demonstrated superior husbandry skills will be selected to receive training and equipment intended to enhance their operation and strengthen the link between the two MAL breeding farms and pig producers. Once established, the 12 multiplier farms in the three project provinces would produce about 1,800 breeding stock per year for distribution. Each multiplier farm will receive replacement boars supplied by the MAL breeding farms. MAL breeding stock will be sold directly to multipliers on the provision that a certain number of multiplier stock offspring produced by multipliers will be sold each year to semicommercial and commercial farmers. The program will be reviewed annually to make certain that the multipliers fulfill their mandate.

72. The use of disruptive technologies enabled by information and communication technology (ICT) is found to be a cost-effective way of training and information dissemination. Short videos on best practices of lead farmers in nearby villages are relatable and can be adopted by farmers rather than waiting a year to witness the demonstration of a crop cycle to adopt it. Tablets and smartphones together with some projection equipment will be provided to CRPs to use for information and knowledge dissemination. Attendance at video shows and adoption of new climate-smart technologies and best practices will be recorded. Field data will be captured in an MIS through the electronic tablet for stock-taking, data analytics, and decision-making. Geotagging will be facilitated and practiced, and online solutions (where possible) will be provided to farmers by sharing symptoms of animal and plant diseases with scientists or specialists.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

73. The implementing agency for the project will be the MAL. The MAL has experience in working with the World Bank through its role in implementing agribusiness partnerships under RDPII. However, the MAL will need substantial support to ensure sufficient resources and capacity are available for project implementation and monitoring. Once approved, the PMU will be staffed within six months after effectiveness of the project with, at a minimum, (a) a project manager, (b) a senior FM specialist, (c) a procurement specialist, (d) a social safeguards specialist, (e) an environmental safeguards specialist, (f) an M&E specialist, and (g) a communications specialist. During the SI ART implementation, additional staff financed by the project may be hired: (a) an international adviser to support the overall project implementation, with a stronger focus on Component 2; (b) an Agriculture specialist in charge of monitoring and supervising the implementation of Subcomponent 1.1; (c) an agribusiness specialist in charge of monitoring and supervising the implementation of Subcomponent 1.2; (d) an institutional development specialist, working alongside the international adviser; (e) an accountant to report to and work with the FM officer; (f) a procurement assistant to report to and work with procurement officer; (g) a communications officer; and (h) support staff (a secretary and a driver). It is expected that some of these positions will become permanent to reduce the loss of institutional knowledge and support the continuity of project activities.

74. The PMU will be the core unit responsible for the overall coordination of the project's implementation, including the day-to-day project activities, compliance with the provisions of the Financing Agreement and government policies and guidelines, project administration, preparation of grant withdrawal applications, and maintenance of records. The PMU, especially the M&E officer, will



ensure the monitoring of project's activities and coordination of reports from agencies, organizations, and beneficiaries that will be part of the SI ART execution.

75. A Project Steering Committee (PSC) will be set up by MAL to provide strategic and policy direction and oversight for project implementation. The PSC will be established by no later than three (3) months from the project's Effective Date. The PSC will be chaired by MAL and include representatives from: (a) MOFT, (b) the MNPDC, (c) the Ministry of Infrastructure Development, (d) the Ministry of Health and Medical Services, (e) the Ministry of Provincial Government, (f) the Ministry of Education, and (g) three provincial secretaries.

76. To ensure knowledge dissemination, support citizen engagement, promote the uptake of CSA practices, and encourage more demand for locally produced, high-quality produce, the PMU will also carry out a range of communications activities. These may include, but are not limited to, radio shows/interviews, bulk text message updates, media articles and press releases, TV documentaries and short videos, and social media outreach through both national and World Bank Pacific channels. These will keep the general public aware of project activities and progress, and more targeted campaigns will encourage certain behaviors such as savings group and improved nutrition.

77. **Provincial Project Team.** To coordinate project activities at the provincial and community levels, a Provincial Project Team (PPT) will be set up in each project province. The PPT will also serve as interface and focal point for mainstreaming project activities with provincial authorities' development plans and investments. The PPT will comprise a provincial team leader/chief field officer (CFO), extension officers of catchment of ABPOs, YPs, and paravets located in smallstock ABPOs villages. This team will be supported by FM consultants and an M&E consultant. One of the key activities that the PPT will carry out is for relevant PPT to prepare financial statements on an ABPO Grant recipient's behalf due to capacity constraints at the ABPO beneficiary level. Apart from this provincial team, a CRP at each ABPO will be selected and trained. The PPT will share its office with the current MAL provincial team. To ensure project activities are fully aligned and embedded into provincial systems, MAL will engage with each project province through some form of internal agreements (for example, MOU) with the provincial secretary as the signatory and the person with oversight for activities in its province. SI ART activities will not run parallel to provincial activities outside of the project but will be complementing and be well-coordinated with provincial activities.

B. Results Monitoring and Evaluation Arrangements

78. Project M&E will: (a) assess and report on the achievement of project performance against the planned outputs, outcomes, and impacts as defined by the project's Results Framework, and (b) track and report on implementation progress as agreed in the budgeted annual workplan. At the project implementation midterm, a full review will be organized with the World Bank to assess progress toward reaching the PDO and implementation bottlenecks. The Results Framework (section VII of this Project Appraisal Document [PAD]) is based on the theory of change and describes the PDO and intermediate indicators. Definitions, including the unit of measurement, respective baselines, target values, frequency, data source and measurement methodology, and responsibility for data collection are outlined in the M&E plan below and will be further developed in the PIM.



79. Specific elements of the M&E system will include the following:

- (a) An MIS to monitor the performance progress and track and report on project inputs, outputs, and some of the intermediate outcomes during the implementation. The project MIS will be put in place, hosted, and maintained by the project's PMU under MAL. The MIS will be strengthened by capturing field data with tablets in COCO mode. The M&E specialist will be responsible for providing training to the technical and M&E staff of other relevant government units and project staff to ensure that the required information is made available and prescribed in a uniform reporting process. MIS data will feed the project progress reports.
- (b) **Sharing and learning facilitation.** Routine monthly, quarterly, and annual reports will inform the analysis of intermediate project effects and proactively identify gaps during implementation so that the PMU can take immediate corrective actions. The routine reports will capture and disseminate lessons learned to improve performance during project implementation. A monthly project review system at the level of MAL will be institutionalized for continuous and systematic guidance.
- (c) **Impact evaluation.** The project will arrange for baseline and endline surveys to inform its impact evaluation. Both surveys will apply rigorous setup with treatment and control groups for project attribution. Thematic studies and/or a light survey may be conducted at the midterm to inform the project progress toward its stated PDO and any adjustments required at that time.

80. The PMU will be responsible for implementing the M&E system. An M&E officer will be part of the PMU and an M&E plan will be developed to define: (a) what specific data and information will be collected, consistent with the project's Results Framework (inputs, processes, results, and impacts); (b) who, how, and when they will be collected; and (c) how they will be stored, processed, and delivered. Much of the data collected will be disaggregated by gender. The M&E plan will be realistic with a focus on information critical for project monitoring and assessment purposes, considering M&E's existing capacity constraints.

81. Several options were considered for PDO indicators 2, 3, and 4. Increases in yield and stock would minimize outside impacts such as market price and family consumption but would be entirely reliant on farmer record books which have been shown to be unreliable and would likely affect the credibility of the findings. Increases in sales by value would provide a uniform measurement that is easier to track and more likely to be recorded by farmers and would also capture increases both in production as well as in quality and value-adding activities. However, the results would be highly dependent on the market price, which the project has no control over. Increases in sales by quantity was ultimately agreed on as it reflects both improved access to markets and better farming practices, while minimizing the likelihood of inconsistent data (as sales funneled through the ABPOs would be more readily and reliably captured). The project will also compare the findings with a control group to further manage variables, such as market price fluctuations. It is important to note, however, that quantity sold is still influenced by the market price, which may encourage/discourage farmers from harvesting and selling and that it would not capture project activities which support farmers to move into the higher-quality, niche markets. Activities which add value to the commodities will be captured separately by the project, likely with both qualitative and



quantitative data. As with all agricultural activities, additional outside influences such as weather patterns, natural disasters, and the increasing impacts of climate change will continue to be present.

C. Sustainability

82. The SI ART will systematically strengthen the capacity of MAL and farming households in targeted provinces to improve the sustainability of food systems and enhance market access for selected commodities (crops and smallstock). The institutional strengthening under the SI ART is expected to have a long-lasting positive impact on the overall management of crops and smallstock production in the Solomon Islands. Particularly, the project will help MAL integrate sustainable measures and disaster risk management approaches into agriculture-related investment planning and interventions for the agriculture sector. It will support MAL to rehabilitate critical infrastructure and use ICT in targeted sites to enhance MAL's capacity in improving research, extension, and agriculture services for increased market outcomes. The project will also improve the sustainability of agribusiness partnerships with mutual private sector actors and semicommercial farmers to increase productivity and sales.

83. The productive infrastructure investments supported under the project will be well maintained under clearly defined ownership arrangements by MAL (or Makira Provincial Authority for the market and storage facilities there). The Makira Provincial Authority will develop a detailed operations mechanism for the market and the storage facility in consultation with MAL and the World Bank team to ensure they are well maintained and operated for long-lasting impacts.

84. The SIG, particularly through MAL, maintains a strong commitment to the objectives of this project. SI ART activities are aligned with the ASGIP (2021–2030) to further strengthen the sustainability of investments and ensure a well-coordinated approach to MAL activities. The project will also support structured and long-term capacity building through overseas courses, video modules, ToT activities, and contributing to extension services with the expectation that some YPs under the project will move into permanent positions. COVID-19 related restrictions may impact the activities by delaying the onset as well as their implementation. The project will mitigate those risks by advancing the development of virtual toolkits and COCO system to support the agriculture extension outreach to the extent possible. Overseas courses for meat inspector training might need to be delivered online when possible and in-person when the situation permits.

85. **Climate, disasters, and environmental sustainability.** Maintenance of the rehabilitated infrastructure will be needed for sustaining the agriculture services provided by MAL such as research stations, laboratories, and equipment. The project will reconstruct and/or adopt improved engineering designs using international best practice standards to enhance their climate resilience. The project will also support innovations in climate-smart technologies and tools to provide more stable returns to the farmers and ABPOs. Training in best practices and new technologies to adapt to and mitigate climate change impacts, as well as how to reduce the farmers' own impacts on the land, will promote environmental sustainability. Although no land acquisition will be required for the project activities, the project will ensure that MAL takes ownership over the process of managing land-related issues using approaches that respect mutual understanding and consensus between the Government, farmers, and land custodians.



IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

86. **Technical analysis.** The project will work toward achieving its PDO by addressing the identified constraints. The low ratio of extension staff to farmers and inadequate knowledge and skills of the extension staff are constraints to effective agriculture and smallstock extension service delivery. This will be addressed by hiring YPs at the sub province level, establishing CRPs at the village level, and building capacities of province-level extension staff by organizing ToTs on project-promoted agriculture and smallstock-linked agriculture commercialization activities.

87. Learning from earlier, similar projects showed that individual farmers engaged in value chains are constrained by lack of opportunities, bargaining power, and market access. This gap will be filled by organizing farmers into formal and registered ABPOs, providing the ABPOs with additional value chain assets and infrastructure, ensuring access to extension, integrating value addition and local processing, infusing working capital to leverage more finance from formal finance institutions to increase business turnover, assuring timely payment to farmers, and establishing market links. Market access will be further strengthened by organizing Development Market Places to create space for interface between buyers and producers to understand market requirements and integrate best practices on production and processing and by developing productive infrastructure. The increasing trend of meat and egg imports and declining nutrition status of villagers will be addressed by promotion of local production and marketing of smallstock, local feed crop production and processing, guaranteed animal health services, and encouraging of private sector investments to move toward import substitution.

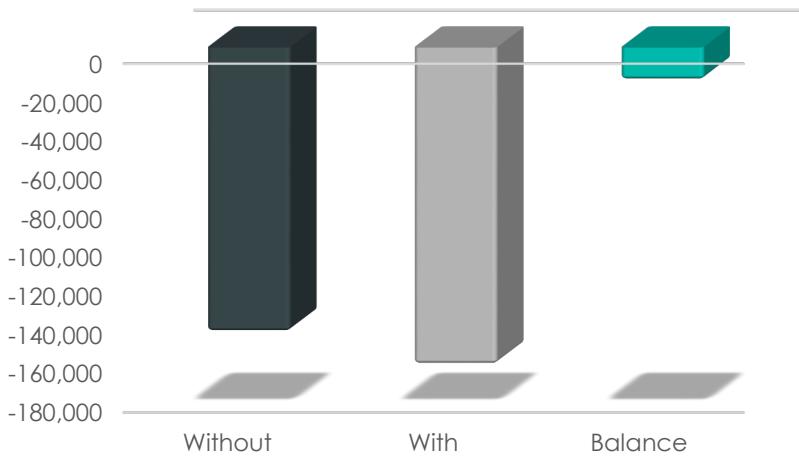
88. **Economic and financial analysis.** The main benefits of the project that contribute to the project's economic internal rate of return (EIRR) are increased and diversified incomes of the targeted beneficiaries in the project area. Specifically, this will result from: (a) adoption of improved agricultural and animal husbandry practices; (b) productivity enhancement of key production activities; (c) improved marketing, postharvest management, and processing from increased investment in value chain activities; and (d) increased opportunities for farm and nonfarm employment including self-employment. Other benefits that are difficult to quantify in monetary terms include: (a) improved agricultural production and dietary diversification for targeted households, (b) improved extension systems and doorstep delivery of extension services, (c) increased financial inclusion, (d) improved penetration of digital services for effective monitoring of services, and (e) improved biosecurity for smallholder farmers.

89. **Economic viability and sensitivity analysis.** The project's EIRR over a 20-year period for the base case, excluding benefits from GHG emission reduction, is 33.3 percent with a net present value (NPV) of US\$22.3 million at a discount rate of 10 percent. A sensitivity analysis was conducted to assess the impact of changes in main parameters affecting the economic outcome of the project as a result of: (a) changes in project costs; (b) changes in the expected benefits from the production systems promoted by the project (crop, livestock, fisheries, and minor forest produce); and (c) delays in project execution due to risks identified in the risk analysis. Results show that the project remains economically viable even within adverse changes in project costs and benefits. A reduction in project benefits by 20 percent results in an EIRR of 26.0 percent. A severe situation of a 20 percent increase in project costs combined with a 20 percent reduction in project benefits, coupled with a three-year delay of benefits, reduces the EIRR to 9.4



percent and an NPV of US\$0.73 million, which is just below the social discount rate of 10 percent, making the project unviable. Further details are provided in annex 4.

Figure 2. Total Balance ‘Without’ and ‘With’ Project



90. **Financial analysis.** A financial analysis has been carried out for the main productive activities supported by the project. Detailed financial models were prepared for the major value chains that are likely to be supported by the project, providing an overview of the production system including key production parameters, farmer organizations, investments, and marketing channels. The financial analysis suggests that an increase in average real annual household income of targeted households is possible due to improved production practices and promotion of other enabling services by the project. Table 4.4 shows the estimated incremental annual net income per household as well as the initial investment costs and the incremental annual costs of intermediate inputs (variable costs) for the main productive activities supported by the project. It is expected that the financial analysis will be periodically updated as an integral part of the project’s M&E system and as an input into the project evaluation at midterm and completion stages.

91. **GHG emissions reduction and shadow price of carbon.** The net balance of all GHGs (expressed in CO₂-equivalent) that would be emitted or sequestered within the potential project activities was estimated and accounted in the economic analysis using the social price of carbon. The economic and financial analysis uses a low and high estimate of the carbon price starting at US\$40 and US\$80 per ton, respectively, in 2020 and increasing to US\$50 and US\$100 over the 20-year period of analysis. According to the calculations in EX-ACT, the project showed a total reduction over the project lifetime of 16,920 tons of CO₂equivalent, which means that the project will have a positive carbon sequestration balance (Figure 2). Given the moderate GHG emissions reductions, the overall carbon benefit is estimated to range between US\$0.31 million in the low shadow price of carbon scenario and US\$0.62 million in the high scenario. Incorporation of this relatively small benefit into the economic analysis improves the project EIRR to 33.8 percent in the low scenario and 34.3 percent in the high scenario.



B. Fiduciary

92. **Financial management.** An FM assessment for the proposed project has been carried out. The assessment concluded that the project meets the minimum World Bank FM requirements, as stipulated in the World Bank Policy/Bank Directive for Investment Project Financing. The following key FM risks have been identified: (a) it is uncertain that experienced FM staff from RDPII will continue working for the new project, and (b) the FM performance of RDPII is mostly Moderately Satisfactory and Moderately Unsatisfactory with weak internal control procedures on bank/cash, fixed assets, and contract management, especially on management of sub-grants. These internal control risks need to be fully addressed in the proposed project. Therefore, the residual FM risk for the project, after mitigation measures, is **Substantial**. The FM mitigation measures proposed are as follows: (a) an experienced FM staff to be appointed to work for the project; (b) the PMU to develop an FM section for inclusion in the PIM to clearly provide all FM guidance and regulations on planning and budgeting, internal control, accounting system, financial reporting, auditing, and especially guidance on project assets management and internal controls on the project bank account and cash management—the internal control procedures on sub-grants activities should also be clearly specified in the FM chapter of the PIM; (c) the project accounting software to be upgraded to use for the new proposed project; and (d) improving the FM capacity of MAL's PMU staff through consultant support and regular World Bank training on FM and disbursement.

93. **Procurement.** The procurement assessment for the project has been carried out by discussing the implementing agency's procurement capacity and the World Bank's procurement requirements. Those involve the Project Procurement Strategy for Development (PPSD) and initial Procurement Plan (PP) that cover the project procurement for 12 to 18 months. The PPSD shall be developed before the PP, since the PPSD would be the basis for the PP, which describes the project information, implementing agencies procurement capacities, market assessment, procurement types, and selected procurement strategy for the project. Both the PPSD and PP for the first 18 months have been prepared and discussed with the World Bank in November 2020 and will be submitted to the World Bank for no objection. At the moment, MAL still utilize procurement staff from RDPII who developed both the PPSD, and PP. Preliminary indications are that the procurement risk under the project is **Substantial** due to limited capacity and experiences of the implementing agency (MAL) in carrying out procurement process under the World Bank's Procurement Regulations. MAL has experience with RDP II, but RDP II still uses the old procurement procedures which do not require a PPSD. The risk is indicated as Substantial, and the World Bank has shared and guided how to develop the PPSD and PP as the risk mitigation measure. The other mitigation measure is to hire an experienced procurement officer under the PMU who will assist MAL to handle procurement activities after the project effectiveness.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No



D. Environmental and Social

94. The project's overall Environmental and Social risk classification is 'Substantial' due to: (a) MAL's limited capacity and track record of relying on external consultants and (b) the nature, characteristics, and typologies of the project being neither complex nor large in scale. The project does not involve investments that have a high potential for harming the environment and society. The Environmental and Social Standards (ESS) 1, 2, 3, 4, 6, 7, and 10 are screened as relevant. ESS 5, 8 and 9 are not considered relevant.

95. The technical assistance and capacity-building activities will largely contribute to positive environmental and social benefits to institutions in carrying out or overseeing activities. The project will have a sizeable capacity-building approach working with smallholder farmers through improved agriculture extension and advisory services which will lead to higher productivity and production, including equitable women representation. For instance, the project will mostly benefit the population by providing training and building the capacity of the staff in MAL (particularly the agriculture extension officers and livestock officers). The project will develop training modules for ABPOs; provide training for farmers, especially women; and facilitate private sector and NGOs link to ABPOs and use new technology for outreach activities.

96. According to the project typologies, the potentially adverse environmental and social risks can be grouped into: (a) impacts of agricultural and smallstock production and processing, and (b) impacts of small infrastructures such as offices, storage assets, housing management assets, and productive infrastructures related to the agriculture commodity and smallstock-specific value chains.

97. Key environmental and social risks associated with the agriculture and livestock activities include impacts to soil, groundwater, and surface water as a result of poor management of runoff from agricultural operations. There are some risks related to the management of pesticides use and the operations of small slaughter slabs for smallstock (that is, poultry and pigs), which could lead to environmental, hygiene, health, and safety issues resulting from the waste products and wastewater. While MAL has committed to applying the slaughtering hygiene, health, and safety standards required by the FAO guidelines, site-specific ESMPs might be required—subject to results of the environmental and social impact screening in the Environmental and Social Management Framework (ESMF) during implementation.

98. Construction and rehabilitation of small-scale infrastructure will trigger environmental impacts, which are likely temporary, reversible, and manageable. Impacts in the construction phase may include temporary erosion, stormwater, sedimentation of water bodies, dust, pollution from inappropriate construction materials, waste disposal, and impacts to community and workers health and safety such as traffic safety issues. A key social risk is that marginalized and vulnerable social groups, including women, may be unable to access services due to issues with their access to land, gender stereotypes, or perceptions regarding physical disabilities. To mitigate this, the project will prioritize the marginalized and vulnerable groups and promote gender in activities such as developing and strengthening ABPOs with equitable women representation and support women-led enterprises who want to establish agribusiness partnerships. This will benefit women who make up the majority of the market sellers in rural areas, often they are the ones cultivating the land, especially in the provinces.



99. While the project impacts will be further screened during project implementation, potential environmental and social impacts associated with the project activities are expected to be site specific, localized, and readily managed through the Environmental Codes of Practice (ECOPs) for the known-industry impacts in the agriculture and livestock sector.

100. Another concern is that the travel to remote areas associated with the implementation of the project activities, including island crossings, will expose the project staff to considerable health and safety risks. MAL commits with advisory and budget support to ensure safe travel procedures can be developed, resourced, and implemented for the project staff.

101. MAL has gained exposure in operationalizing the World Bank Safeguards Policies through RDP I and RDP II experience. The project can present additional challenges, including adjusting to the new requirements of the Environmental and Social Framework (ESF) approach. The lessons learned—detailed in the ESMF—from implementing the safeguards instruments under RDP I and RDPII include the following: (a) enhanced monitoring and reporting of environmental and social issues should be ensured as part of the project operation and (b) consistent and persistent efforts of MAL’s environmental and social focal points, environmental and social consultants, and the World Bank team to continue providing hands-on support to the communities and the province-based staff to ensure that issues related to the environmental and social risk management are continuously monitored and followed up on. The transition to the ESF will require that project staff at all levels, including provincial MAL, community, contractors, and suppliers, develop a broad understanding of the ESF approach such as the concept of proportionality and adaptive management of risks. A budget of over US\$915,475 is allocated in the ESMF to address environmental and social risk management requirements.

102. MAL has prepared a draft Environmental and Social Commitment Plan (ESCP), which considers the need to ensure adequate budget, staffing, and operational arrangements for the environmental and social risk management. MAL has also developed the draft Labor Management Procedures (LMP) and Stakeholder Engagement Plan (SEP) for meaningful consultations with relevant stakeholders and extensive community consultation and engagement. The ESMF, LMP, ESCP, and SEP were disclosed on November 30, 2020, through MAL’s website and the World Bank’s website to collect feedback provided on potential risks and impacts and mitigation measures as part of the public consultation process. MAL conducted three stakeholder consultations on the environmental and social instruments at the national and provincial levels, respectively, on January 22, January 28, and March 15, 2021. The aim of these consultations was to collate feedback to improve the applicability of the ESF instruments—ESMF, ESCP, LMP, and its annexes—and on the SEP as an integral part of the environmental and social due diligence process. The consultative feedback such as application of the national legislation and screening potential environmental and social risks and impacts were integrated in the relevant ESF instruments.

103. The Solomon Islands (including the three target provinces) have an overwhelming majority of indigenous peoples and consequently an Indigenous Peoples Planning Framework and subproject Indigenous Peoples Plans are not required. The ESMF and SEP require the project staff to ensure that community consultations will be facilitated and documented by the project to proactively engage with indigenous peoples, guaranteeing their ownership and participation in project design.

104. The public consultations using COVID-19-sensitive approaches will take place with affected and interested stakeholders, from Honiara and the three targeted provinces. Formal feedback of the



stakeholders would be used to revise the ESMF, LMP, ESCP, and SEP after the public consultations were completed. The ESMF, LMP, ESCP, and SEP will remain accessible following the formal consultation period with ongoing feedback recorded. The consultations will be in a form and language understandable to project-affected and other interested stakeholders. The engagement planning, disclosure of information, and meaningful consultations will need to be undertaken in a culturally appropriate and gender and intergenerationally inclusive manner.

V. GRIEVANCE REDRESS SERVICES

105. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VI. KEY RISKS

106. The overall implementation risk rating is Substantial.

107. **Political and governance risk is rated Substantial.** The Solomon Islands is a fragile state, with a complex political economy, characterized by widespread corruption and vested interests. This poses a high risk to project activities, particularly the targeting of support and selection of farmers for inclusion in the project. While this risk is to some extent unavoidable, it is mitigated through strong government support for the project and commitment to the objectives. The increasing interest in the Solomon Islands has the potential to politicize donor investments, where political elites at the national and provincial levels could politicize location-based identities. To mitigate this, the project will take an FCV-informed approach to reduce the risk of exacerbating FCV drivers. Clear, transparent, and well-communicated selection methods will be used to identify communities and ABPOs which the project will work with, minimizing the opportunity for elite capture. The task team will continue to engage directly and through the SIG with donor partners to ensure investments are complementary. A strong communications strategy will be implemented throughout the project life at the national and provincial levels as well as ongoing community engagement to ensure feedback is captured. Elections are not due until 2024, also reducing the risk of redirected priorities during the first years of project implementation. Mitigation measures reduce the residual risk to Substantial and their realization will continue to be assessed throughout implementation.



108. **Institutional capacity for implementation risk is rated Substantial.** Similar to other SIDS, the Solomon Islands has limited administrative capacity, with government officials being required to cover a wider range of tasks than staff in larger administrations. Staff turnover is high and specialized technical skills are in short supply. MAL currently does not have a permanent office location in Honiara, reducing the ability for MAL staff to coordinate and collaborate as well as leaving many staff with ad hoc access to facilities for their role. The current COVID-19 pandemic and related travel restrictions further limit the availability of technical support on the ground and will affect future requirements for consultants to travel to the Solomon Islands to support activities. By nature of the project's objectives, activities will involve working with farmers on both agricultural production and commercialization, across multiple commodities and in different provinces where access is often a challenge, and this will put further pressure on MAL capacity. To mitigate this and the abovementioned risks, the World Bank worked closely with MAL during preparation to design an operation that reflects MAL's capacity and will continue to do so throughout implementation to avoid delays and obstacles. MAL is in the process of setting up a team who can dedicate themselves to the project, to minimize the risks of slow preparation progress and to ensure institutional knowledge is maintained from preparation to implementation. MAL staff will initially be seconded into the PMU during preparation, with more full-time project staff hired once the project is effective. To reduce silos and loss of institutional knowledge, some key project staff will be absorbed into MAL as permanent staff by the end of the project. Project activities will be piloted initially before expanding over the first few years of the project, to allow MAL staff time to understand the requirements and gain experience, and for the project to incorporate the lessons learned. To reduce the risk of shortage of extension staff in the provinces, the project will hire YPs from FAFF and other recognized agriculture universities in the Pacific countries for smooth project implementation. While it is expected that during the first year, travel may be restricted due to COVID-19, it is hoped that the increased vaccination coverage will make travel possible. In the meantime, the World Bank team will continue the virtual missions and regular meetings with the MAL team as well as to utilize local staff and expertise as much as possible. Potential supply chain disruptions due to COVID-19 are unlikely to affect the project during the first year of implementation.

109. **Fiduciary risk is rated Substantial.** Initial assessments for both FM and procurement rate the residual risk as Substantial. For FM, this is largely based on the experience of RDPI and RDPII where there have been weak internal control procedures on bank account and cash management, fixed assets and contract management, especially on the management of sub-grants. These risks will be mitigated through an experienced FM staff hired for the PMU, a specific FM section prepared for the PIM, the project's accounting software to be upgraded, and regular training provided by World Bank staff to the PMU. The procurement risk is due to limited capacity and experience of the implementing agency (MAL) in carrying out procurement under the World Bank's Procurement Regulations as well as project implementing agencies at provincial levels that have not been officially identified. This risk has been mitigated by sharing the PPSD and new PP templates, providing guidance to MAL in developing the PPSD and PP, and adopting centralized procurement for all ABPO activities, particularly given limited access to banking, and strategically planning procurement for the ABPO investments. Lessons will be drawn from the centralized procurement under RDPI and RDPII, to reduce transaction costs and minimize the workload on the PMU, as well as the importance of having procurement officers experienced in World Bank procurement requirements. Ongoing training will be provided by the World Bank team both during preparation and implementation of the project.



110. **Environmental and social risks of the project are considered to be Substantial.** This is because the recipient has limited capacity and a track record of relying on external consultants and are not experienced with the implementation of the ESF. While the nature, characteristics, and typologies of the project are not complex or large and do not involve investment that have a high potential for harming the environment and society, some E&S impacts are expected associated with: (a) impacts of agricultural and smallstock production and processing, and (b) impacts of small infrastructures such as offices, storage assets, housing management assets, and productive infrastructures related to the agriculture commodity and smallstock-specific value chains. Specific E&S risks for these activities may include erosion, stormwater impacts, sedimentation of water bodies, dust, pollution (construction and operation), waste disposal (construction and operation), and impacts to community and workers health and safety, and exclusion of marginalized and vulnerable groups. To mitigate these risks and capacity challenges, MAL has prepared E&S instruments including an ESMF which includes specific screening requirements and mitigation measures to address the construction and operation of infrastructure. An ESCP has been prepared to ensure adequate budget, staffing, and operational arrangements for project environmental and social risk management. The ESCP includes specific activities, timeframe of activities, and responsibilities on the World Bank and borrower side.

111. **Other risks.** The COVID-19 pandemic will affect not only project preparation but also the first years of implementation. The Solomon Islands received its first few cases of the infection in October 2020 and the extent of containment will determine how much movement within the country is possible as well as the extent to which the health system and the economy are affected. Limited technical knowledge is available on the ground, which may make some project activities hard to implement. To the extent possible, videoconferencing and online solutions will be used. The Solomon Islands is also extremely vulnerable to natural hazards and climate change. If a natural hazard were to occur in project location(s), it could threaten the achievement of the PDO. While the changing nature of climate change is still being understood, longer and more intense weather patterns are likely to have a negative impact on agriculture. The project will promote CSA and GAP as ways to mitigate, to the extent possible, climate change impacts on agriculture activities in the project areas.

**VII. RESULTS FRAMEWORK AND MONITORING**

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Results Framework**COUNTRY: Solomon Islands****Solomon Islands Agriculture and Rural Transformation Project****Project Development Objectives(s)**

To increase agricultural production and improve market access in selected value chains in the Project Provinces, and in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Outcome 1: To increase agricultural production							
Beneficiary agri-producers reporting increased agricultural production (Percentage)		0.00	0.00	0.00	40.00	60.00	75.00
Outcome 2: To improve market access							
Increase in sales of cocoa, by quantity, reported by farmers participating in cocoa Agribusiness producer organizations (ABPO's). (Percentage)		0.00	0.00	0.00	7.00	7.00	15.00
Increase in sales of coconut, by quantity, reported by farmers participating in coconut Agribusiness producer		0.00	0.00	0.00	7.00	7.00	15.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
organizations (ABPO's). (Percentage)							
Increase in sales of poultry, by quantity, by the targeted farmers participating in poultry Agribusiness producer organizations (ABPOs) (Percentage)		10.00	10.00	10.00	25.00	25.00	32.00
Farmers adopting improved agricultural technology (CRI, Number)		0.00	300.00	2,500.00	4,000.00	5,000.00	7,000.00
Farmers adopting improved agricultural technology - Female (CRI, Number)		0.00	150.00	1,250.00	2,000.00	2,500.00	3,500.00
Farmers adopting improved agricultural technology - male (CRI, Number)		0.00	150.00	1,250.00	2,000.00	2,500.00	3,500.00
Outcome 3: Beneficiaries							
Direct project beneficiaries (Number)		0.00	600.00	5,000.00	25,000.00	60,000.00	85,000.00
Of which are female (Percentage)		0.00	50.00	50.00	50.00	50.00	50.00



Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Component 1: Agribusiness and Infrastructure Investments								
1.1. Poultry and pigs raised by ABPO members (Number)		0.00	700.00	11,000.00	22,350.00	36,000.00		44,700.00
Poultry (Number)		0.00	600.00	7,000.00	15,000.00	25,000.00		30,000.00
Pigs (Number)		0.00	100.00	4,000.00	7,350.00	11,000.00		14,700.00
1.2. Number of Agribusiness Producer Organizations (ABPOs) established (Number)		0.00	6.00	30.00	64.00	94.00		100.00
1.3. Number of ABPOs functioning one year after establishment (Number)		0.00	6.00	24.00	56.00	74.00		80.00
1.4. Productive infrastructure facilities under MAL management completed (Number)		0.00	0.00	2.00	4.00	6.00		8.00
1.5. Beneficiaries with access to project infrastructure investments that feel these reflected their needs (Percentage)		0.00	0.00	0.00	60.00	60.00		75.00
Of whom are women (Percentage)		0.00	0.00	0.00	50.00	50.00		50.00
Component 2: Institutional capacity development								
Farmers reached with agricultural assets or services (CRI, Number)		0.00	300.00	3,000.00	6,000.00	8,000.00		9,200.00



Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Farmers reached with agricultural assets or services - Female (CRI, Number)	0.00	150.00	1,500.00	3,000.00	4,000.00			4,600.00
2.2. ABPO members trained in agriculture and small stock production in climate stressed areas (person days) (Number)	0.00	300.00	2,500.00	4,500.00	7,000.00			9,200.00
Of which are women (Percentage)	0.00	50.00	50.00	50.00	50.00			50.00
2.3. MAL staff and Young Professionals trained (Number)	0.00	50.00	80.00	90.00	100.00			100.00
Of whom are women (Percentage)	0.00	50.00	50.00	50.00	50.00			50.00
2.4. Community Resource Persons (CRPs) trained and working (Number)	0.00	6.00	30.00	70.00	100.00			116.00
Of whom are women (Percentage)	0.00	50.00	50.00	50.00	50.00			50.00
2.5. ABPO members raising small stock using locally grown feed crops and following technical feed production advice (Percentage)	0.00	0.00	0.00	25.00	25.00			45.00
2.6. Number of innovations or best practices recognized/awarded during the project period. (Number)	0.00	0.00	5.00	10.00	15.00			20.00



Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
2.7. MAL extension and technical staff which are women (Percentage)	27.00	27.00	28.00	29.00	30.00			31.00
Component 3: Project Management								
3.1: Grievances addressed within 3 months (Percentage)	0.00	100.00	100.00	100.00	100.00			100.00
3.2. Communication and public awareness strategy implemented (Yes/No)	No	No	Yes	Yes	Yes			Yes
3.3. Audit report submitted on time (Yes/No)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Beneficiary agri-producers reporting increased agricultural production	This indicator measures increase in agricultural production through a set of proxy indicators. Beneficiary households are unlikely to maintain useful records of production and crops are likely to be harvested as needed. The proxy	Project Year 1, Year 3 and Year 5	Baseline, mid-term, end line surveys	Household beneficiaries surveys	M&E Officer



	questions will ask ABPO members about changes in production, project benefits received, and changes to their production practices. “Increase production” is defined as household having achieved of, for example, an increase of crop plantation, intensive home garden plantation; increased revenue from market sales; better productivity; and/or reduction of losses and waste, etc. The reference period of 12 months before the survey.				
Increase in sales of cocoa, by quantity, reported by farmers participating in cocoa Agribusiness producer organizations (ABPO's).	This is to measure the increase in sales of cocoa, by quantity, as a proxy for market access. A single value will be computed for cocoa, for each ABPO, and averaged across ABPO's. The percentage increase over the baseline will be computed from this value. The baseline will be obtained from the initial data recorded when farmers become members of the ABPO.	Year 1, Year 3 and Year 5	Baseline / mid-term and end-line survey; MIS	Data will be from ABPO's record book triangulated with Household beneficiaries survey. Base unit of measure would be kilogram or ton of dried beans.	M&E officer



Increase in sales of coconut, by quantity, reported by farmers participating in coconut Agribusiness producer organizations (ABPO's).	This is to measure the increase in sales of coconut, by quantity, as a proxy for market access. A single value will be computed for coconut, for each ABPO, and averaged across ABPO's. The percentage increase over the baseline will be computed from this value. The baseline will be obtained from the initial data recorded when farmers become members of the ABPO.	Year 1, Year 3 and Year 5	MIS, Baseline, mid-term and end-line	ABPO's record book triangulated with mid-term and end line surveys. Base unit for measuring would be kilogram or ton of copra. ABPOs that move in higher value products such as coconut oil could convert back to copra for calculation.	M&E officer
Increase in sales of poultry, by quantity, by the targeted farmers participating in poultry Agribusiness producer organizations (ABPOs)	This is to measure the increase in sales of poultry, by value, as a proxy for market access. A single value will be computed for poultry, for each ABPO, and averaged across ABPO's. The percentage increase over the baseline will be computed from this value. The baseline will be obtained from the initial data recorded when farmers become members of the ABPO.	Year 1, Year 3, Year 5	MIS, Baseline, mid-term and end-line.	ABPO's record book triangulated with mid-term and end line surveys. Base unit for measurement would be number of birds.	M&E officer
Farmers adopting improved agricultural technology	This indicator measures the number of farmers (of	Annual, mid-term and	MIS	Farmer's Record Book, triangulated with mid-	M&E Officers



	<p>agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank.</p> <p>NB: "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber and non-timber forest products.</p> <p>Adoption refers to a change of practice or change in use of a technology that was introduced or promoted by the project.</p> <p>Technology includes a change in practices compared to currently used practices or technologies (seed preparation, planting time, feeding schedule, feeding ingredients, postharvest storage/processing, etc.). If the project introduces or promotes a technology package in which the benefit depends on the application</p>	end-line survey		term and end line surveys. Addendum to the definition (automatically filled as Core Result Indicator): for this project, number of farmers adopting improved technology will be including both husband and wife of the targeted households reporting to have adopted the technology.	
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	<p>of the entire package (e.g., a combination of inputs such as a new variety and advice on agronomic practices such as soil preparation, changes in seeding time, fertilizer schedule, plant protection, etc.), this counts as one technology.</p> <p>Farmers are people engaged in farming of agricultural products or members of an agriculture related business (disaggregated by men and women) targeted by the project.</p>				
Farmers adopting improved agricultural technology - Female					
Farmers adopting improved agricultural technology - male					
Direct project beneficiaries	<p>They are defined as (i) the whole families of ABPO members; ii) members of ABPOs who are benefiting from project interventions and/or TA; (iii) users of rehabilitated/newly constructed productive infrastructures, and (iv) recipients of capacity building and/or training</p>	Annual	Management information system/progress reports.	<p>Generated from MIS with data entry from ABPO record books, M&E Officer records, PMU's technical staffs' records.</p>	M&E Officers



	including MAL and stakeholder staff, YPs, Interns and CRPs. Households will be based on the average household size in Solomon Islands (5.5). The MIS will record and track the number of individual beneficiaries and beneficiary households.				
Of which are female	They are defined as (i) the whole families of PO members; ii) members of POs who are benefiting from project interventions and/or TA; (iii) users of rehabilitated/newly constructed productive infrastructures, and (iv) recipients of capacity building and/or training including MAL and stakeholder staff, YPs, Interns and CRPs. Households will be based on the average household size in Solomon Islands (5.5). The MIS will record and track the number of individual beneficiaries and beneficiary households. Given the household	Annual	MIS and progress report	Generated from MIS with data entry from PO record books, M&E Officer records, PMU's technical staffs' records.	M&E Officer



	approach by the project, the number of female direct beneficiaries is expected to be at 50% of the total number of project direct beneficiaries.				
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Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
1.1. Poultry and pigs raised by ABPO members	This indicator measures the cumulative quantity of poultry and pigs raised by ABPO member households.	Annual	Management information system.	ABPO record books triangulated with mid-term and end line surveys.	M&E Officer
Poultry					
Pigs					
1.2. Number of Agribusiness Producer Organizations (ABPOs) established	"Established" defines as ABPO complies with the standard procedures on the formation and setup as outlined in the PIM.	Annual	MIS / progress report	Generated from MIS with data entry from ABPO record books, M&E Officer records, PMU's technical staffs' records	M&E Officer
1.3. Number of ABPOs functioning one year after establishment	"Functioning" defined as: ABPO maintains regular meetings on a monthly or quarterly basis. The annual and target values are	Annual	MIS / progress report	Generated from MIS with data entry from ABPO record books, M&E Officer records, PMU's technical staffs'	M&E Officer



	estimated at 80% of total established ABPOs.			records	
1.4. Productive infrastructure facilities under MAL management completed	This indicator measures the number of the approved infrastructure facilities under MAL management that physically completed in compliance with the current infrastructure development regulations , functioned, and handed over and being used by beneficiaries.	Annual	Management information system/progress reports.	Generated from MIS with data entry from M&E Officer records, procurement plan and payment documents	M&E Officer
1.5. Beneficiaries with access to project infrastructure investments that feel these reflected their needs	Citizen engagement indicator – this indicator captures feedback from the project beneficiaries on what extent to which the implemented infrastructure subproject responds to their priorities/needs for production improvement.	Mid-term and end-line survey	Mid-term and end-line survey	Household surveys	M&E Officers
Of whom are women					
Farmers reached with agricultural assets or services	This indicator measures the number of farmers who were provided with agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture	Annual	MIS, POs Record books	Generated from MIS with data entry from POs Record Books, M&E Officer Records, PMU's technical staffs' records	M&E Officers



	<p>fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and genetic material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research, extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an</p>				
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	agriculture-related business (disaggregated by men and women) targeted by the project.				
Farmers reached with agricultural assets or services - Female					
2.2. ABPO members trained in agriculture and small stock production in climate stressed areas (person days)	This indicator measures the number of ABPO members who completed training in agriculture and small stock production in climate stressed areas. The number will be measured on the number of days of training delivered, multiplied by how many ABPO members attended that day. ABPO members can be counted multiple times if they attended multiple days of training. Given the climate and disaster vulnerability of Solomon Islands, all provinces are considered as 'climate stressed'.	Annual	Management information system/progress report.	Generated from MIS with data entry from ABPO record books, M&E Officer records, Capacity Building Officer's records	M&E Officers and Capacity Building Officer
Of which are women					
2.3. MAL staff and Young Professionals trained	This indicator measures the number of agriculture extension, veterinary staff and young professionals who have been trained to	Quarterly.	Management information system/progress report.	Generated from MIS with data entry from ABPO record books, M&E Officer records, Capacity	M&E Officer and Capacity Building Officer



	provide extension services to farmers.			Building Officer's records	
Of whom are women					
2.4. Community Resource Persons (CRPs) trained and working	This indicator measures the number of CRPs selected, trained and working on the project. CRPs are the best practicing farmers or lead farmers from the ABPOs who are nominated and developed as CRPs through training programs organized and led by MAL extension staff.	Annual	Management information system/progress report.	Generated from MIS with data entry from ABPO record books, M&E Officer records, Capacity Building Officer's records	M&E Officer
Of whom are women					
2.5. ABPO members raising small stock using locally grown feed crops and following technical feed production advice	This indicator measures the numbers of all smallstock agribusiness ABPO members who report their increased feed crops production, for example, growing more high-protein bean, cassava and cowpea crops, or having better feedstuff for small stock as result from following the feedstuff formulation advice, or any feeding practices that promoted by the project. Counting as % of ABPO	Year 3 and Year 5	Mid-term and End-line surveys	Household surveys triangulated with ABPO's record books	M&E Officers



	member.				
2.6. Number of innovations or best practices recognized/awarded during the project period.	This indicator measures number of innovations or best practices, which are relevant to project interventions, that have been selected, recognized, and awarded from the Annual Innovations Competition and the Development Market Place supported and organized by the project.	Year 2, 3, 4, and 5.	Annual Innovations Report and Development Market Place Report	Annual Report of the Project and MIS	M&E Officer and Development Market Place organizing team
2.7. MAL extension and technical staff which are women	This indicator measures a reduction in the gap between female and male extension and technical staff under MAL. Over the life of the project, MAL will hire extension and technical staff through expansion or staff turnover	Annual	MIS	MAL Staff Record	M&E Officer
3.1: Grievances addressed within 3 months	"Addressed" defined as ways of handling/responding to any grievance according to a written procedure, as defined in the PIM.	Annual	MIS / progress report	PMU logbooks and Safeguard Officer records	
3.2. Communication and public awareness strategy implemented	This indicator reports whether the SI ART project develops and implements a	Annual	Management information system/progr	MIS and PMU records/files	



	specific communication strategy to disseminate the project's best practices, innovations, technologies, showcase for wider replication. This includes the exchanged ideas and innovations among PO members, policymakers, entrepreneurs, buyers, and investors. 'Implementation' is defined as at least 50% of the annual planned budget effectively spent.		ess report.		
3.3. Audit report submitted on time	This indicator measures the cumulative number of audits submitted by the June 30 deadline each year.	Annual	Management information system/progress report.	Audit report submitted to the Bank	

**ANNEX 1: Detailed Project Description****COUNTRY: Solomon Islands
Solomon Islands Agriculture and Rural Transformation Project****Project Content, Scope, and Financing**

1. The objective of the project is *to increase agricultural production and improve market access in selected value chains in the Project Provinces, and in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.* The Solomon Island's MOFT has identified agriculture sector's competitiveness as a development policy priority. MAL has proposed production and productivity enhancement in agriculture and smallstock as a strategy to increase agricultural production and improve market access and import substitution. The project is structured as an Investment Project Financing (IPF) financed by an IDA credit and grant in the amount of US\$15 million over five years. The key measures of success are (a) increase of agricultural production in targeted households/groups, (b) increase in sales by the targeted farmers participating in ABPOs, and (c) increase in number of farmers adopting improved agricultural technologies.
2. The project will strengthen institutional systems of MAL at the national level by (a) supporting renewal of smallstock sector; (b) establishing a PMU at the MAL level; (c) collaborating with external entities such as SINU or any other training service providers when needed for training and capacity building of MAL staff and YPs; (d) developing user-friendly systems and processes for registration of ABPOs; (e) recruiting YPs to build up the future agriculture cadres for agriculture extension, production, and agribusiness; (f) upgrading trainings and extension systems; (g) developing project MIS; and (h) promoting innovations to strengthen agribusiness ecosystem. In addition, it will provide intensive support to agriculture and livestock staff at the province level to develop a Community Managed Extension System for last mile extension service delivery and investments in agriculture and smallstock. The Department of Livestock Production and Veterinary Services will be supported to upgrade its central and provincial veterinary laboratories (where possible), revive breed improvement by establishing and strengthening pig multiplier units, provide veterinary extension and paravet services, and encourage applied feed crop research. Apart from production and productivity enhancement in agriculture and smallstock, import substitution will be achieved by developing slaughter slabs for pigs and chickens to provide hygienically slaughtered meat for the domestic market. Skill and entrepreneurship development will be focused to attract more youth to enter into agribusiness and provide extension and marketing support to farmers.
3. The project will implement agricultural production and commercialization interventions with a strategic focus on high-value crops and smallstock production in selected villages of the three provinces of Guadalcanal, Malaita, and Makira. These provinces were selected based on their potential to contribute the largest share of agriculture production to the national economy and their potential for export-



oriented value chains. They also have the highest poverty incidences (number of people living below the basic needs poverty line) in the country.³⁶

Component 1: Agribusiness and Infrastructure Investments (US\$11.2 million)

4. This component aims to increase the production capacity of smallholder farmers in high-value crops, food crops, feed crops, and smallstock in the project targeted areas. It will also improve the quality of, and access to, extension services in crop production, smallstock production, and animal health services. The proposed interventions will target the vulnerable communities for agricultural production and the rest of the project areas for increasing income of smallholder and semicommercial farmers engaged in high-value crops and smallstock production, aiming to contribute to the objective of enhanced agricultural production, import substitution, and increased export. This will also include infrastructure development to support and strengthen agricultural production and agribusiness commercialization.

5. These objectives will be achieved by (a) forming and registering ABPOs; (b) building capacity of agriculture and smallstock extension service; (c) establishing value chain assets, that is, equipment, machinery, tools, and small implements; (d) increasing use of information systems and the use of improved and innovative technologies; (e) linking with private sectors; and (f) developing productive infrastructure to support the agricultural production and agribusiness.

Subcomponent 1.1: Agribusiness Producer Organizations (ABPOs) (US\$5.8 million) (estimated beneficiaries: 25,000)

6. **This subcomponent will focus on commercialization of targeted value chain of export-oriented high-value crops.** Potential areas growing high-value crops will be selected to build the capacity of smallholder farmers and semicommercial farmers engaged in semicommercial production scale to increase productivity, enhance quality, and market access. Semicommercial smallstock production using improved husbandry practices will be adopted to increase domestic meat supply and thereby import substitution. Cultivation of feed crops, use of mini-feed mills, establishment of small-scale village-based egg incubators to support and promote adequate smallstock production and marketing will be followed. Agriculture and smallstock extension services will be provided to farmers by CRPs and paravets and the community-owned, community-driven, and community-managed extension system. Digital technologies will be introduced where possible to provide weather, market, and shipping information apart from extension services.

7. The rising prices of local feed ingredients are causing many semicommercial and fully commercial pig and poultry farms to cease operations. The project will therefore support medium-scale cassava production as a lower cost source of pig feed. As an example, ABPOs keeping 50 sows with offspring can cultivate cassava on 10 to 15 acres of land, sufficient for a year's worth of feed, by planting and harvesting 1 acre each month to ensure a steady supply. Harvested cassava will be solar dried, chipped, and ground for use as the energy component of the feed. Sun drying for 10 hours, or cooking, will eliminate the toxic cyanide compound. Broad-stemmed cassava varieties will reduce weed growth, and the leaves can be

³⁶Solomon Islands National Statistics Office, and World Bank. 2017. *Solomon Islands Poverty Maps Based on the 2012/13 Household Income and Expenditure Survey: Technical Report*.



harvested, dried, and ground into high-protein piglet feed. The project will support the purchase or hire of soil tilling and cassava drying and processing equipment.

8. ABPOs will be organized along the selected value chain as Eols by the ABPO members. ABPOs developed under agribusiness partnerships of RDP II could also be included. Project staff will organize outreach events at the project targeted areas for canvassing interests of potential ABPOs in addition to those that have been supported by RDP II. The project will identify potential villages in which the smallholders and semicommercial farmers are engaged in the project-promoted commodities, that is, cocoa, coconut, honey, cassava, banana, ngali nut, chickens, and pigs, to facilitate formation of ABPOs. These ABPOs need to be registered under the Co-operative Societies Act, 1953 of Solomon Islands and obtain a business license, which allows to take up business activities to generate income and profit.

9. Registered ABPOs with bank accounts will be eligible to prepare a Business Plan. ABPOs will be supported to develop their Business Plans which outline the activities they intend to undertake for production, aggregation, marketing, and partnership, where relevant. Project support will be in the form of a grant, to which ABPOs will contribute at least 10 percent of the total estimated value (in the form of cash or deposited in the bank account) of the Business Plan. Project support to the ABPOs is proportionate to the number of members, which is on average US\$50,000 for 50 members. It is expected that the project will support around 100 ABPOs during its five-year operation.

10. ABPOs' Business Plans will include aggregated production plans from ABPO members, nurseries, value chain assets, storage sheds, and machine hiring centers (managed by youth groups as part of the ABPOs). Semicommercial smallstock producers have the option to pool their stock to establish larger, more efficiently operated pig or poultry farms and jointly produce the necessary feed crops. Project support under the ABPO subcomponent will also include small-scale mini-feed mills operated by small gasoline engines and village-based egg hatching incubators as relevant. The egg hatching incubators will be solar powered.

11. After the formation and registration of the ABPOs, modular training programs will be organized to prepare them for their eligibility to frame Business Plans for financing. MAL staff will facilitate the value chain oriented ABPOs to register under the Co-operative Societies Act and obtain a business license. Registration could be done at the provincial level with the provincial registrar. ABPOs will be requested to open a joint bank account with at least three registered signatories.

12. Apart from registration and bank accounts, the ABPOs must fulfill the eligibility criteria such as selection of office bearers and functional committee members, completion of modular training on institution building, deposit of equity and annual membership fees, and completion of three-monthly meetings. The Business Plan will include procurement of essential value chain asset/equipment and storage shed, working capital, value chain trainings, tablet and books of registers, and skill training of youth on repair and maintenance. The Business Plan will be approved by MAL authority to start the business. The value chain asset and infrastructure, cash box, and printed books of registers for bookkeeping will be centrally procured; however, the storage shed construction cost, working capital, operations cost, value chain training cost, and so on, will be transferred in tranches to the ABPOs based on triggers.



13. Existing ABPOs engaged in smallstock production and marketing or individual producers can pool their current pig herds or poultry flocks to establish larger pig, broiler, or layer operations. The Business Plans of smallstock ABPOs include production inputs, chicks and piglets, new and upgraded sheds for poultry and pigs, pig farrowing crates, layer cages, assorted smallstock production equipment, egg hatching incubators, small-scale land tilling equipment, seeds, planting materials, harvesting tools, and mini-mill equipment for the production and processing of feed crops.

14. Agribusiness operations requiring equipment, machinery, storage sheds, small tools, and implements will be part of the Business Plan of the ABPO. The MAL PMU will procure these assets centrally and install in the ABPO. ABPOs will own these assets. ABPO members with experience in running cocoa driers, direct micro expellers (DMEs), crude coconut oil mills, processing centers, cassava processing, and so on will be provided with equipment and machineries and will operate as ABPO/village processors. Repair and maintenance activities will be borne by the village processors. The ABPO members will be charged user fees for using small tools and implements. User fees collected by MAL will be used for the repair and maintenance or purchase of new sets of small tools and implements.

15. Working capital will be disbursed to the bank account of the ABPO after installation of processing units and availability of small tools and implements, cash box, tablet, and printed registers for bookkeeping. Disbursement will be based on the Business Plan and may be disbursed in installments to check the efficient and transparent management of fund. Working capital will be used as revolving fund. The village processors will use their own resources to buy the raw materials for processing in the beginning. After selling processed products to buyers selected by the ABPO, the payment from the buyers tends to take three to four weeks. During this period, the village processors may run out of cash to buy raw materials, which prevents processing centers from operating. To avoid this situation, ABPO will provide working capital to the village processors to run the processing center for maximum capacity utilization. Upon receipt of the payment by the ABPO from the buyer, the working capital will be adjusted, and remaining amount will be passed on to the village processor. The ABPO may contact the agribusiness companies for local-level processing and value-addition training as needed on a cost basis. Market links will be facilitated and established by the PMU with or without the support of agribusiness companies contracted and hired under RDP II with the same set of ABPOs, which they have formed, nurtured, and supported.

16. ABPOs will be the point of transaction between the external buyers, input providers, service providers, and village processors and ABPO members. The ABPO will play a role of an aggregator, which aggregates the processed products to identify, select, and inform buyers regarding the volume of products to bargain and negotiate price with the buyers for remunerative deals for the ABPO. Aggregated volume can also demand quick and frequent shipping schedule or booking space in the ship for transporting processed products to Honiara or buyer's destination. The buyers will make payment to the bank account of the ABPO.

17. Bookkeeping and FM are integral to ABPOs. Tablets, standardized books of records/registers, and cash boxes are all eligible to be supported by ABPO grants. The PMU will develop standardized books of records/registers (which should be preprinted) for the agribusiness PO. While designing the books of records/registers, the team members at the PMU should consider the existing literacy level of the ABPO members. All the tablets should have COCO-based MIS software before handing over to the ABPO. Systematic and phase-wise training and refresher training will be organized on bookkeeping in the books



of records/registers and data entry in the tablets. The tablets will be used for geotagging of all the ABPOs, village processors, and ABPO members to develop a commodity corridor for the Solomon Islands for transparency, better business development, and efficient MIS.

18. The institutional architecture of ABPOs comprises members, functional committees, and office bearers. The members of the ABPO will only hold the position of office bearers and functional committee members. The office bearers are chairman, secretary, and treasurer. The functional committees are procurement committee, marketing committee, quality control committee, and social action committee. The ABPO will be registered under the Co-operative Societies Act. Annual membership fees and share capital will be contributed by the members before registering the ABPO under Co-operative Societies Act. The ABPO will have a bank account and will be operated by the office bearers as authorized signatories. The roles and responsibilities of members, functional committees, and office bearers will be presented in the ABPO guideline.

19. Various best practices will be promoted including CSA such as modification of cropping sequence that is, vegetable-pulses-vegetables; GAP such as mulching, weeding and hoeing, trellis, creepers in hessian bags; inter-cropping, mixed cropping, appropriate spacing, direction of transplanting in agriculture plot, feed crop and food crop production, smallstock fencing, introduction of light traps, and use of pesticides prepared from plant and animal extracts; and conservation agriculture such as growing crops without ploughing land, direct seeding. These will help reduce the cost of cultivation, improve soil fertility, reduce crop damage, and increase production.

20. The business plan could also include support for a few nurseries within relevant ABPOs. The nurseries will raise relevant seedlings for respective crops of interest for specific ABPOs or to see to other ABPOs or other non-ABPO farmers as revenues. Seeds and planting materials will be procured from markets, research stations, or collected from other farmers and raised in the nurseries developed by selected lead farmers in the project villages. The project will focus on farmers' preferred traits in the seed varieties such as less water requirement, less requirement of major and micronutrients, short duration, bigger size fruits/vegetables, better taste, higher nutritional value, and more production will be prioritized. These are also important aspects of market demands which will drive the commercialization. The seedlings and planting materials from nurseries will be supplied to ABPO members with nominal prices to cover the labor costs incurred by the nursery owners in the first year. From the second year onward, the nurseries owners will charge buyers (ABPO members and non-ABPO members alike) with market prices for sustainable business growth. High-yielding seed varieties will be prioritized to use the harvested grain/produce as seed in the subsequent years. Appropriate and improved technologies of agriculture sector and traditional practices/processes already practiced, established by farmers of the country will be scouted, selected, and adopted for seed storage and preservation for subsequent use. Seed banks will be promoted in the project villages, and nurseries will be developed by the lead farmers for continuous supply of seedlings or planting materials to the targeted households of the project.

21. Agriculture machinery provision will be included in the business plan and centrally procured by MAL to distribute to ABPOs in accordance with their approved business plans. ABPOs will set up and operate a fee-based machine hiring center/shop whereby all assets are registered with ABPOs and ABPO members will hire the machines/tools per demands with a check-out and check-in system. ABPOs will select some youth members to manage the machine hiring centers and also train them to carry out the repair and maintenance of the machines/tools. ABPOs will jointly develop the user-charge system to



ensure it can cover the repair, maintenance, depreciation, and renewal costs in the long run. Members who hire out the machines will pay for the fuel costs as per their use. Power tillers will be used for ploughing lands before each crop, whereas weeders, sprayers, small tools, and implements will be introduced for facilitating continuous intercultural operation in each crop.

22. Feed crop cultivation will also be promoted under the production and productivity enhancement program. Cassava and high-protein feeds such as climbing winged beans, pulses, and cassava leaf meal will be cultivated in part of available or fallow or uncultivated land, to optimize land use and harvest quality smallstock feed. The purchase of seeds and planting stock, feed grinding equipment for household use, and assorted production equipment could be included in the business plans.

23. For smallstock development, village chicken and pig production will be promoted to increase animal protein supply and improve the dietary diversity. Smallstock raising is also designed increase meat production for import substitution and increase household incomes from the higher productivity of smallstock by using improved husbandry practices.

24. Under smallstock activities, existing chicken and pig inventories will be identified at the villages. Three-week-old birds and weaned piglets will be purchased by the ABPOs from smallstock raising households in the same or nearby villages, to supply them with replacement stock. Apart from helping in purchase of smallstock, the project will support training to reduce mortality, increase productivity, and reduce diseases. The smallstock producers will be introduced to the use of night shelters, nesting boxes for village hens, farrowing pens, piglets shelters, and supplementary feeding, thereby reducing mortality, increasing egg production, and achieving higher hatching and chick survival rates and faster growth. Eggs laid in nest boxes instead of in the bush allows for cleaner eggs, less breakage or losses, and higher chick hatching rates, while night shelter protects against predation, weather exposure, and disease. The use of farrowing crates significantly reduces piglet mortality.

25. The project will provide training to ABPO members engaged in smallstock production under their business plans, with selective vaccination and preventive measures for disease control and establish basic smallstock health care services made available by CRPs and paravets to smallstock farmers. Village poultry production will be carried out under good livestock management practices, and the short food supply chain concept will foster closer geographical and social relationships between village women producers, marketeers, and consumers, to facilitate village poultry marketing.

26. **Extension and animal health services accessibility to ABPO members is a project priority.** Currently, only 4 percent of the farmers in the country are receiving extension services from the extension department of MAL. The project is committed to providing extension services at the doorstep to 100 percent of ABPO members. ABPOs will identify a ‘best practicing’ farmer or lead farmer or a family member of ABPO member engaged in farming who has interest, adequate time and motivates member farmers to adopt improved agriculture/smallstock practices and nominate them as a CRP. Province extension staff of MAL will provide phased modular trainings to CRPs. The project will develop a guideline on CRP—selection criteria; training and capacity-building program; monthly work plan development of CRP; types of extension services such as training, demonstration, audiovisual shows, output measurement, project progress data entry in COCO-based MIS, monthly review by ABPO, and incentive payment system. The CRP will also be responsible for bookkeeping of ABPO. The CRP will be remunerated with a monthly stipend of around US\$100 for her/his work and this is budgeted in the business plan.



27. **Disruptive technologies will be introduced to improve the accessibility of agriculture and smallstock extension.** Small videos capturing best practices of Pacific countries (including the Solomon Islands) will be collected and video shows will be organized during the awareness generation/training programs. These video shows will also be organized based on the convenience of targeted communities by CRPs. A tablet will be provided to all the CRPs to carry with them during the project period. Apart from collection of videos on best practices, the project will also develop small videos on different themes (such as agronomic practices, intercultural operations, nursery raising, weeding, cropping pattern and cropping sequence to improve soil health and nutrient status of soil, preparation of plotting in home nutrition garden, diversified food group production in home nutrition garden, seed bank, food bank, smallstock husbandry practices, feed crop production, use of mini-feed mill to prepare feed for smallstock, feeding for increased body weight, vaccination, and feeding and drinking facilities for smallstock). The tablet will also be used for video film production; recording of images such as the best home nutrition garden, best agriculture plots, and best performing smallstock; and data entry in the MIS.

28. **Collaboration among the ABPOs through information sharing.** The project will facilitate information sharing among ABPOs to fulfill the priority demands of normal buying and selling transactions within the ‘internal market’. The information sharing facilitated through the project will mean that, for instance, ABPOs involved in cassava production can be directed to supply cassava to the ABPO with pig or broiler/layer production. Similarly, a coconut producing ABPO will be directed through information exchanges to supply copra meal to the pig production ABPO. Another example is that ABPOs engaged in vegetable production can be directed through information sharing to supply produce waste to ABPOs engaged in chicken or pig production and vice versa. The transactions during this trading process will be the usual buying and selling transactions carried out in cash and based on existing market price. In parallel to fulfilling demand of the ‘internal market’ of the ABPOs, collaboration among ABPOs through information sharing will enable marketable surplus to be sold by ABPO members in the local market as well.

29. ABPOs will select a lead farmer who will serve as a CRP. ABPOs will also benefit from modular trainings such as (a) Module 1: problems faced by individual smallholder and semicommercial farmers; (b) Module 2: what is ABPO, why ABPO, benefits of ABPO, group management, selection of functional committees, selection of office bearers, roles and responsibilities of members, functional committees, office bearers; (c) Module 3: statutory requirements such as formation, registration, and bank account of ABPO and its operation; raising equity, annual membership fees, and dividend distribution; (d) Module 4: bookkeeping and finance management; and (e) Module 5 : Business Plan for agribusiness. These training modules will be delivered as applicable, based on the relevant ABPO’s Business Plan. A detail guideline on the ABPO will be developed to roll out the agribusiness activities in the formal and registered ABPO.

30. To govern and manage the project grants by the ABPOs, a separate Grant Manual will be developed by the project, in addition to the PIM.

Subcomponent 1.2: Infrastructure Investments (US\$5.4 million) (estimated beneficiaries: 60,000)***Public Infrastructure Investments***

31. Productive infrastructure investments under the SI ART would involve a range of basic items such as rural marketplaces/facilities, training center, research center, pig breed improvement facility,



warehouse, and province MAL offices. For most MAL facilities, the investments demands have been identified and are to be further surveyed and designed in detail. For market and storage facility in Makira, consultation with local communities will be conducted by provincial authority and MAL team. These are public investments and will serve to facilitate the ABPOs in improving their production capability and access to markets. MAL will be the lead agency for building the productive infrastructure and will liaise with relevant ministries in the process. After completion of the market and storage facility at Makira, these two infrastructure investments will be handed over by MAL to the Makira Provincial Authority (as existing owners of the two sites) for operations and maintenance.

32. MAL will develop and establish a training center at Tenaru under this project to provide systematic trainings to its staff, extension workers, paravets, and farmers. The project will support in providing high tech-based training center to attract the participants by developing smart class-based training rooms and audiovisual aids with internet connectivity. This training center will also provide information on various predominant crops and livestock of the country required by the farmers. Farmers with mobile network connectivity can also access support from the training center. During the training program, the resource people can video call the best practicing farmers in agriculture and livestock of the Solomon Islands to share their experiences for the benefit of participants. Short video shows on best practices or intercultural operations and its impact on improving efficiency of training and reducing expenditure in extension will also be prioritized under this training center.

33. MAL will develop a research center at Tenaru, upgrade the National Research Center at Honiara, and build MAL's Pig Breed Improvement Facility in Tenaru, Guadalcanal, to enhance agriculture research and pig breed improvement as part of MAL's Pig Breed Improvement Program. The project support will cover site clearing, design and construction of those infrastructure as relevant. The project will also support the expansion of the pig multiplier system and the improvement of pig housing. These infrastructures will contribute to providing a better variety of seed and planting materials of different crops, vegetables, and fruits and a better breed of piglets to farmers. MAL will also construct (including site clearing, demolition, design and construction as needed) its provincial MAL offices at Makira and Malaita, to provide better extension services in agriculture and livestock to the farmers of both the provinces. A market and a storage facility will also be developed (including site clearing, design and construction) in Makira to boost selling of local produce by the farmers and store agriculture commodities for long periods before shipping during bad weather conditions. The market and storage facility will be developed in discussion with the Makira Provincial Authority and handed over to the community by establishing systems to manage user fee collection, ensure repair and maintenance, continuous improvement, and sustained use.

Component 2: Institutional Capacity Development (US\$1.8 million)

Subcomponent 2.1: Community Managed Extension System (US\$1.0 million)

34. **A Community Managed Extension System will be developed to establish community-owned, community-managed, and community-driven extension services to the ABPO members.** The best practicing farmer or lead farmer or his/her family member engaged in agriculture or smallstock, who is willing to give time and motivate fellow ABPO members through training, demonstration, and proper handholding to adopt new or improved agriculture and smallstock practices/technologies, will be selected, trained by MAL, and developed as a CRP. A CRP will receive an incentive amount up to SBD 800



(approximately US\$100) per month from the ABPO, funded out of the grant. Provincial agriculture and livestock extension officers (who received ToTs from MAL or third-party agencies) will organize modular training programs for the local resource person and develop him/her as CRPs. The CRP will report to the ABPO for action plan, review of work, performance assessment, and incentive toward the work accomplished. The CRP of an ABPO will provide either agriculture or livestock extension services depending on the commodity the ABPO deals with. Accordingly, the modular training programs will be organized for different CRPs.

35. The Livestock Division of MAL will try to increase paravets' recruitment for the project provinces to ensure adequate coverage of animal health services. Paravets will be identified by the Livestock Division and will be trained in a similar virtual-based manner. These paravets will provide specialized hand-holding support to CRPs who in turn will provide relevant training, demonstration, promote farm biosecurity and hand-holding support including vaccinations and smallstock health care services for chickens and pigs. CRPs will be provided a computer tablet to organize short video shows, provide weather and market information to ABPO members, and enter project progress in the COCO-based MIS. A detail guideline will be developed in the PIM to roll out this Community Managed Extension System and CRP functioning under the SI ART Project.

36. MAL will review its training program and will engage with relevant experts or agencies to prepare training modules and printed training materials as per the topics requested by ABPOs and demanded under the SI ART. The Agriculture Extension and Training Department of MAL will organize training programs (ToTs) for the extension staff and YPs. MAL will engage the best extension officers or hire experts from FAFF of SINU or any other relevant agencies as needed. MAL will collect the training modules and training materials including flip charts, posters, leaflets, and audiovisuals, developed by RDP II, development partners, NGOs, agribusiness companies, other Pacific countries, and so on. It is expected that MAL will need training modules and training materials on (a) know-how to develop training modules and train CRPs, (b) ABPOs, (c) package of practices of high-value crops, (d) smallstock husbandry, (e) GAP, (f) CSA, (g) CA, (h) SAP, (i) feed crop production, (j) basic disease control and farm biosecurity, (k) cost-benefit analysis of crops and smallstock, (l) profitability analysis of different agribusiness commodities and smallstock, (m) finance management and bookkeeping, (n) production scheduling for efficient transportation, (o) local-level processing and value addition, (p) packaging and transportation, (q) storage and warehousing management, (r) marketing of agriculture and smallstock produce, and (n) group management and coordination. It is obvious that MAL cannot handle them all as some are outside of its expertise areas (for example, ABPO formation and strengthening, finance management, and business plan development). MAL will, therefore, plan to outsource some of the courses to third-party agencies. To comply with project safeguards, training will also address animal welfare (stress-free pig and poultry housing, adequate feeding, humane slaughter); worker safety for operating feed milling and crop harvesting equipment; and environment-friendly waste disposal methods by recycling smallstock manure as vegetable or feed crop fertilizer. This will also include safeguard-related training.

37. Phased training programs will be organized for all the agriculture and livestock extension staff including YPs based in the project provinces. All the training programs will be organized by MAL, with potential support from experts and organization as relevant. Apart from technical information, the training modules must include the know-how of imparting training, demonstration, and handholding. MAL will facilitate and develop an action plan for each participant after each training, which will be reviewed in the subsequent trainings (preferably on a quarterly basis). This review of the action plan will form the



assessment of performance of agriculture extension and training department of MAL. The trained MAL extension staff will develop training modules and training materials in the local pidgin language as relevant while providing trainings to CRPs. The action plan of CRPs will be developed during the training program and assessed on a quarterly basis to assess the performance of trainers and CRPs. After each training, the extension staff will accompany the CRPs to train the ABPO members. This is called handholding of CRPs. Similarly, the CRPs will also visit farmer fields, crop orchards, and smallstock producers to organize demonstration, handhold, and guide the ABPO members on the know-how to achieve higher number of adoptions.

38. **The YP Program** is to attract, prepare, and utilize young talents to provide best quality services to the poor by providing adequate exposure while working in the grassroots and develop them as seasoned development professional. The YP Program exists in different nomenclatures in UN organizations, World Bank projects, national and provincial/state governments, and NGOs. At present, more than 2,000 YPs are working in different World Bank projects across the globe.

39. MAL has only limited number of extension staff at the provincial level, to provide extension services to farmers. Apart from low capacity, difficult terrain and travel connections to inland villages are also a barrier to travel and provision of proper extension services in the villages. The lack of the adequate number of extension staff in the province and ward levels makes accessing adequate extension services a challenge. Considering the context of extension systems and services, the project is proposing a YP Program to support and strengthen the extension department of MAL at the province, ward, and village levels. It is also clearly proposed that in the absence of an extension staff in the catchment area of a ABPO or ABPOs, a YP will be placed to fill the gap and continue to ensure extension services reach the last mile. Currently, MAL divides the whole country into agriculture zones comprising few villages. YPs will be placed in the agriculture zones within the selected project provinces to promote and work with ABPOs. MAL will hire 50 YPs as project consultants in a phased manner and provide training to induct them into the project.

40. The objective of the YP Program is to fast-track agricultural development by hiring and placing young, energetic, and talented professionals at the critical positions of the project to improve the extension services for the last mile. One-week induction cum orientation programs will be organized for the YPs soon after they join the PMU. Apart from project orientation, quarterly action plan will be developed for each YP. YPs will be based in the villages within the project provinces for the first three months. After that PMU and PMTs will review each YPs' performance and together with YPs to develop longer term support plans to YPs' assigned ABPOs/communities. A detailed guideline will be developed to roll out the YP Program.

41. The diploma and degree graduates of FAFF from SINU, or other universities, majoring in agriculture, livestock, and/or natural resource management, are eligible to become YPs in the extension department of MAL. Both diploma and degree holders will be considered under the YP Program. The diploma graduates will be paired with the field officer rank whereas the degree graduates will be paired with the senior field officer rank. The ministry will hire these YPs on a contractual basis (as consultants) and incentivize them with the salary of a field officer and senior field officer to work in the project. The contract period will be for three years, and the contract may be renewed based on performance and requirement of the project.



42. The project will follow two processes to hire YPs: campus recruitment and open market selection. The diploma and degree agriculture graduates will be recruited through campus recruitment in FAFF, SINU campus, whereas the agriculture graduates of the Solomon Islands studying in other countries will be recruited through an open market selection process. Earlier diploma and degree agriculture graduates of FAFF, SINU, can participate in the open market selection process. The maximum age limit to become a YP will be 32.

43. **Project-based internship for agriculture students of FAFF (SINU).** Field internship is an integral part and an academic requirement of the agriculture stream scheduled during June–July and December–January (Christmas/New Year). Internship during June–July will be two weeks and during December–January will be four weeks. Each student has to undergo at least two internships comprising six weeks during their academic session at FAFF. MAL will coordinate with FAFF to design project-specific internship arrangements for FAFF students in the three project provinces. Interns will be properly inducted and trained on the project approach, codes of conducts, required behavior, and safety protocols to comply with during their internships with the project. Internship offers an opportunity to work with farmers while learning and earning. The best suited students will be offered modest accommodation in the villages and stipend to cover their meals, stationery, and so on and actual expenses during project-related travels. Nursery raising, development of mechanisms to distribute planting materials to farmers from nursery, development of standardized home nutrition garden, estimation of productivity in different crops, cost-benefit analysis of different crops and smallstock, documenting of package of practices of different crops, inclusion of pulses within cropping pattern to enrich soil health, orientation of farmers in improved technologies and practices, know-how to reach last mile in livestock extension services, organizing of short video shows in villages, facilitating of implementation of CSA and GAP, know-how to capture adoption, and so on are some of the short-term projects covered under internships. Performance of internships will be assessed at the PMU and FAFF separately to award grades. This has been a pre-existing program between MAL and SINU. Upon this project, the project will finance training and stipends for the selected interns up to the project's closing date. MAL may consider continuing with the program by its own funding upon relevant agreement between MAL and SINU.

Subcomponent 2.2: Smallstock Sector Renewal (US\$0.55 million)

44. The project will support MAL in upgrading its central and selected provincial veterinary laboratories (where possible); veterinary, paravet, and livestock extension service; and applied feed crop research. Village-based, solar-powered incubators will be provided to hatch day-old chicks for use as replacement stock. The project will also support an applied field crop research program with emphasis on the cultivation of new and existing high-protein feed crops to be carried out as demo plots by lead farmers, and expansion of the pig multiplier farms to provide replacement stock to semi- and fully commercial pig farmers.

45. The project will support a veterinary consultant to carry out and update the national livestock disease survey as part of the country's membership application to OIE. The consultant will work closely with the country's veterinary services to carry out the survey. Lead farmers demonstrating superior husbandry skills will be selected as multipliers and receive breeding stock from the MAL Pig Breed Improvement Facility from which to raise and sell part of the breeding pig offspring to other farmers while keeping part for themselves. Multiplier farms will be evaluated and reappointed annually, based on their performance in raising and selling breeding stock. Project support for applied feed crop research will be



shifted to the private sector in the form of on-farm trials and demonstration plots, supervised by MAL staff. MAL is in the process of recruiting a volunteer chief veterinary officer (CVO) who will be responsible for veterinary regulatory enforcement, veterinary quarantine, and veterinary drug procurement. The CVO will also head the paravet training program. In the absence of a CVO, paravets will carry out basic animal health services for the smallstock ABPOs. It is important to note that these are the ABPOs that focus on smallstock as the business and are part of the 100 target ABPOs under the SI ART. The project will support the training of five additional paravets to work in the project provinces. They will be trained by using the internet paravet course provided by the South Pacific Community.

46. Pig and poultry slaughter slabs have been placed in this subcomponent as the best fit for these activities. One pig and poultry slaughter slab each would be located near Honiara and Auki where the heaviest smallstock concentrations are present. The project will invite by public announcement interested parties to submit an EoI to construct and operate the slabs. Selection of successful applicants will be based on the most feasible and cost-effective proposal submitted. The project support is proposed to be the lesser of a US\$15,000 grant or 49 percent of the total estimated costs for each slab. This support will be in the form of sub-grant(s) to the selected private sector entity/entities via Sub-grant agreement(s) between MAL and each private sector entity selected in accordance with the PIM and Procurement Regulations. The closing date of the sub-grant agreement falls within the closing date of the project. The waste management systems of the slabs will be designed to treat liquid and solid waste, possibly by means of biogas production. To save the cost of electric power and avoid outages, it is recommended to further investigate the feasibility of installing solar power to heat the water used in the pig slab scalding/dehairing vats, and the poultry defeathering machine.

47. The project will support the MAL Division of Livestock to enlarge its Pig Breed Improvement Program by constructing a newly built MAL Pig Breed Improvement Facility at Tenaru and increase the capacity of multiplier farms in the project provinces (through provision of training and relevant equipment). A Pig Breed Improvement Facility will be established as a new pig nucleus breeding farm at Tenaru, beginning with 30 breeding sows transferred from the old pig breeding farm in Ranadi, Honiara, and expanding over time to 80 sows. Four multiplier farms will be established in each of the three provinces, which will receive multiplier stock from the nucleus farm and will multiply and sell offspring to commercial pig farmers. To counter the increasing cost of pig feed, cassava will be produced to lower feed costs. The project will support all aspects of the Pig Breed Improvement Program, including the purchase of small-scale feed processing equipment to dry, grind, and process raw cassava into cassava meal, and the expansion of the pig multiplier farm network.

48. The project will also support the training of four meat inspectors. Given that this type of training course is not available in the Solomon Islands, the project will support four MAL staff members to attend a three-month training course on meat inspection in Australia. Upon successful completion of the course, they could receive a diploma, which, together with slab design and slaughter operations, opens the way to best practice HACCP hygiene slaughter accreditation.

Subcomponent 2.3: Innovations and Development Market Place (US\$0.25 million)

49. The 'Development Market Place' is a platform to showcase the innovations and upscale wherever feasible either in the project villages or elsewhere in the Solomon Islands. Innovation is the process of translating successfully demonstrated new ideas, approaches, processes, practices, methods,



technologies, or techniques into tangible societal impacts. The objectives of the Development Market Place is to (a) showcase, share, and learn innovations among communities, NGOs, agribusiness companies, government departments, and development partners, which can be scaled up to improve livelihoods in the rural areas of the Solomon Islands; (b) replicate these innovations in the SIART Project villages as relevant for higher economic returns, build higher resilience and sustainability; (c) award these innovations and innovators to boost individuals and organizations in continuing their effort to innovate for larger societal impacts; and (d) provide opportunities to youth innovators to create culture of continuous innovations among youth in agribusiness and smallstock sector. The Development Market Place will be organized in the project to maximize the benefit to the ABPOs. The showcasing events will be organized at both national and province levels.

50. The Innovations and Development Market Place has two parts: (a) Annual Innovation Competition and (b) Development Market Place. Annual Innovation Competition will be organized every year during the project implementation period. Call for submission of innovations will be invited in online and offline mode to facilitate and encourage more innovators to submit and participate. The project will advertise in the project website in the online mode to receive innovations. The PMU will form a committee comprising the senior experts of MAL and experts invited from other agencies to evaluate the innovations. Successful innovations will be celebrated in an annual event and awarded with a certificate and a prize in the form of farm tool or equipment with value up to SBD 10,000 (approximately US\$1,200). These successful innovators will be provided opportunities from the SI ART Project to replicate and scale up these innovations in the existing ABPOs or form new ABPOs in the three project provinces. Successful innovators may also be invited as resource persons to provide training, guidance, and advise to the ABPOs as relevant. It is expected to award five innovations per year.

51. The innovations must cover nurturing of ABPOs; digital finance; banking correspondent/facilitators; home nutrition garden; production of high-quality and export-oriented products such as cocoa, CNO, virgin coconut oil, honey, cassava, and banana for niche and boutique markets; employment/enterprise linked skill development of youth; feed production from locally available materials; preventive and curative measures for smallstock; linking of smallholders to market; extension service delivery to last mile; women ABPOs; and so on. These innovations must have applicability, replicability, scalability, impact, and sustainability. The details are provided in box 1.1.

Box 1.1. Key Features for Development Market Place

- **Applicability to improve rural livelihoods** (its relevance to context of rural livelihoods). Context to innovations, type of innovations, issues addressed by innovations/genesis, sectoral classification, process involved, interventions adopted/adapted.
- **Replicability** (can be demonstrated in other places). Restricted to any social group, role and inputs of external agencies, initial cost involved, raw material/resources required, availability of resources (local or outside), level of skill required (existing or developed), number of people sensitized and trained, examples of any replication, legal issues, funds arrangements for scaling up/replication.
- **Scalability** (can be expanded in terms of geography and human coverage). Outreach of innovations- number and type of direct beneficiaries, number of groups and villages covered, socioeconomic status of direct beneficiaries, number and type of indirect beneficiaries, identification of focus groups and methods of outreach.



- **Impact for a cause/concern** (long-term results for social, economic, and environmental benefits). Increase in household income, change in the status of beneficiary households, increase in awareness, status of service delivery systems in the village documentation, social impact-equity, participation, gender, redivision of labor, environmental impacts.
- **Sustainability** (in the absence of external support, can it be sustained). Number of people/households participating (scale), status of institutional arrangements for learning, initiation by organization/individuals, people's contribution (cash/kind), sources of fund, M&E systems, capacity building/strengthening, technological feasibility, financial systems, management systems (assets and operational), market issues, environmental impacts.

52. Public advertisements to invite innovations will be published in all the local newspapers and messages will be provided through radio, social media, and bulk SMS (short messaging service) to reach out to innovators such as individuals, communities, ABPOs, youth innovators/entrepreneurs, saving clubs, NGOs, agribusiness companies, and government departments to apply and participate in the 'Development Market Place'. Scouting will be done additionally by applying snowball technique to reach out to innovators to further expand the search. Rating tool will be developed by engaging national-level thematic experts to screen proposals. The rating tool is used to screen all the innovations and short-list them. Short-listed innovations will be validated by a field visit of a team of experts from the national and provincial level. An evaluation tool will be developed by using a separate team of senior development and agribusiness professionals within the PMU and MAL. Validated innovations will be evaluated by a team of national experts to rank the innovations for showcasing, presentations, and awards. An expert agency will be hired on a turnkey basis to organize the Development Market Place in the third year of the project.

53. Development partners, international buyers, buyers of niche and boutique markets, NGOs, bankers of the Solomon Islands, and senior government officers will be invited to participate to understand, learn, and appreciate the innovations and innovators to create a culture of continued innovations in the Solomon Islands. The international buyers and buyers of niche and boutique markets will establish market links with products displayed by innovators and ABPOs. Development partners may be investing in the innovations to replicate/scale up either in the project villages or elsewhere in the Solomon Islands. The SIG may be focusing on certain best practices or innovations to frame policy to upscale innovations. The ABPOs established under the SI ART Project will also adopt and replicate many best practices which are applicable to their project activities.

54. The event of Development Market Place will have two subevents. There will be public presentations for the top 10 innovations and a showcasing workshop for innovations and innovators in the stalls/booths. The showcasing workshop will be open to public of the province apart from invitees and participants. Students from different schools and universities will also be invited. Each ABPO will send two representatives to attend and participate in the Development Market Place to learn and share among the fellow ABPO members upon their return. The logistics cost and expenditure at the venue will be part of the Business Plan of ABPO. However, the logistics and other related costs of the successful innovators will be borne by the project under this subcomponent. A learning document with pictures and an audiovisual will be developed by the expert agency at the end of the event in both pidgin and English. This will be shared among all the ABPOs apart from all the project stakeholders.

Component 3: Project Management (US\$2.0 million)



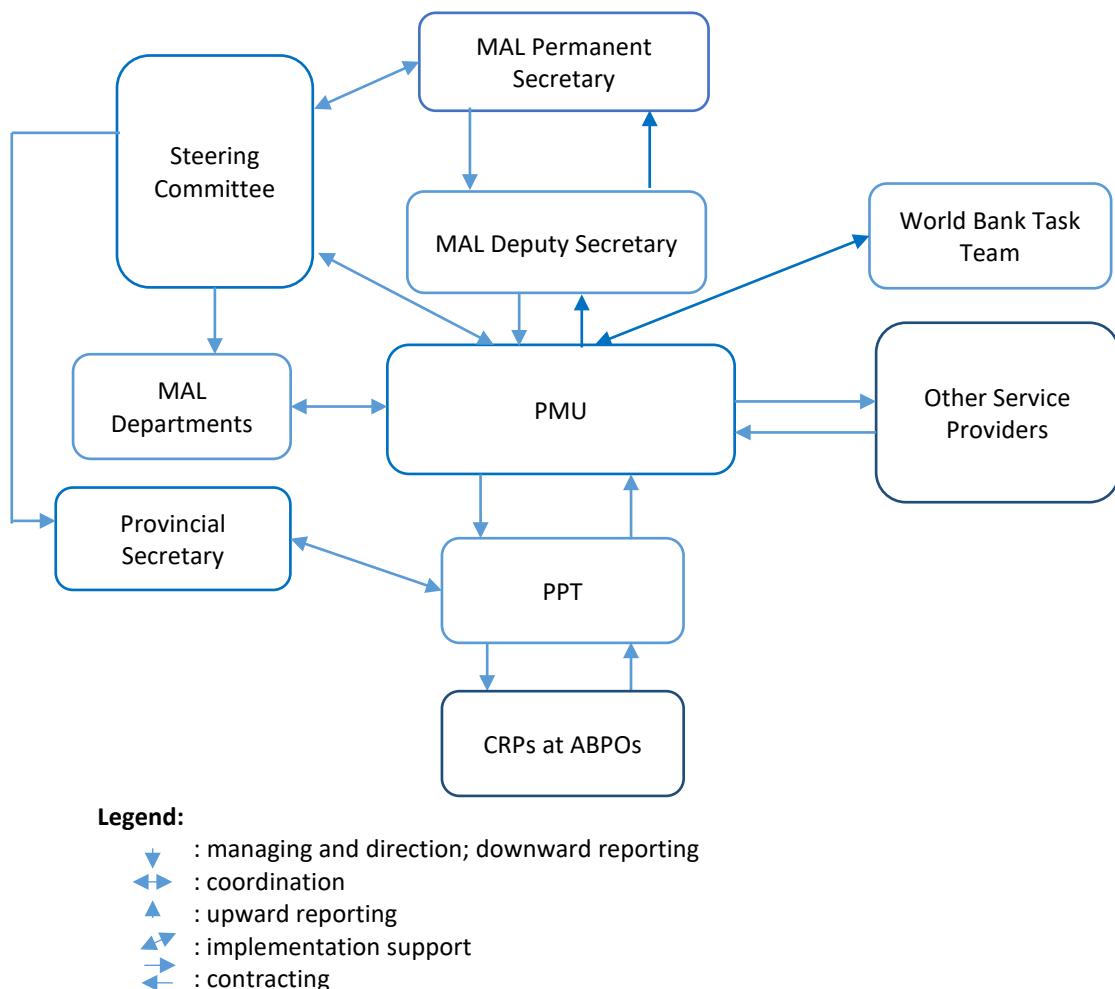
55. This component will support the project's implementation architecture by establishing a PMU under MAL. The PMU will be staffed and equipped to enable it to effectively carry out these activities. The PMU comprises a manager, 19 project staff/consultants including three subject matter specialists from agriculture, agribusiness, and institution development to implement the project. It will support the coordination of project activities, environmental and social safeguards, and the fiduciary functions under the guidance of MAL. The component will finance contractual/incremental staff, consultants, operating costs, technical assistance, training, M&E activities, MIS design and rollout, baseline and final impact assessments, information dissemination, GRM, and annual audits. Under this component, the project will ensure that at least half of the participants in M&E workshops, training events, seminars, and conferences will be women. Furthermore, the project aims that at least half of all project-funded professional positions such as PMU staff, YPs, and interns will be filled by women.

Component 4: Contingent Emergency Response Component (CERC) (US\$0 million)

56. The objective of this component is to improve the Government's response capacity in the event of an emergency, following the procedures governed by OP/BP 10.00, if the Government so requests. There is a high probability that during the life of the project, the Solomon Islands will experience frequent climate-related disasters which cause a major adverse economic and/or social impact including food shortage leading to food insecurity and would result in a request from the country to the World Bank to support mitigation, response, and recovery in the region(s) affected by such an emergency. In anticipation of such an event, this CERC provides for such requests. The CERC can serve as a first line financing option during an emergency response; country IDA funding under this project that has not been committed can be allocated to this subcomponent in an emergency. MAL will develop the CERCPIM and an Emergency Action Plan (EAP) for the project and adopt the CERCPIM and EAP acceptable to the World Bank as a condition of disbursement under Component 4 of the project. MAL will begin drafting the CERCPIM and EAP immediately to ensure that the CERC could be in place as soon as possible as a precautionary measure to deal with any unforeseen eligible crisis or emergency that might occur early in the implementation of the project. Triggers for the CERC will be clearly outlined in the PIM and the CERCPIM acceptable to the World Bank. Disbursements can be made against an approved list of goods, works, and services required to support crisis mitigation, response, and recovery as set out in the EAP acceptable to the World Bank. Should the CERC be triggered, MOFT will be the implementing agency of the CERC.

**ANNEX 2: Implementation Arrangements and Support Plan****COUNTRY: Solomon Islands
Solomon Islands Agriculture and Rural Transformation Project****Institutional and Implementation Arrangements**

1. MAL will be the implementing agency for Components 1 to 3 of the project. Component 4 (CERC) will be implemented by the MOFT should the CERC be activated.
2. The SI ART will have three levels of implementation and coordination: (a) central at MAL with a PMU for daily implementation and management of the project, (b) provincial with PPTs for coordination at provincial level, and (c) community level with activities on the ground with ABPOs and actual investments.
3. The proposed project organization chart is presented in Figure 2.1.

Figure 2.1. Project Organization Chart



4. The PMU will be headed by the project manager cum PMU manager and staffed with key positions of specialists for FM, procurement, M&E, environmental safeguards, social safeguards, and communications. To support project implementation, the PMU will also mobilize additional consultants, including (a) an international adviser to support the overall project implementation, with stronger focus on Component 2; (b) an Agricultural specialist in charge of monitoring and supervising the implementation of agricultural production under Subcomponent 1.1; (c) an agribusiness specialist in charge of monitoring and supervising the implementation of agribusiness aspects; (d) an institutional development specialist, working alongside the international adviser; (e) an accountant to report to and work with the FM officer; (f) a procurement assistant to report to and work with the procurement officer; and (g) support staff (a secretary and a driver).

5. At the provincial level, provincial governments will sign MOUs (draft MOUs will be developed and presented in the annex of the PIM) for their participation in the project, with the provincial secretary as the signatory and the person with oversight for activities in their province. This is to ensure the project activities are embedded in the provincial system. Further, the provincial secretary in the project provinces will also act as a signatory on the SI ART provincial project bank account and endorse the SI ART provincial work plans and monthly action plans against which payments from the account are made. The provincial secretary is to receive copies of all SI ART reports including any provincial reports to brief the provincial assembly as required.

6. The PPT will comprise a provincial team leader position assumed by MAL's CFO, an FM officer (hired consultant), an M&E officer (mobilized existing MAL provincial staff), and all MAL extension officers employed at each provincial MAL office.

7. The project will also have a Steering Committee which will be set up by MAL, with representatives from each of the provinces as well as relevant government ministries. The suggested members of the Steering Committee include (a) MAL, (b) the MOFT, (c) the MNPDC, (d) the Ministry of Infrastructure Development, (e) the Ministry of Health and Medical Services, (f) the Ministry of Provincial Government, (g) Ministry of Education, and (h) three provincial secretaries.

8. CRPs will be part of the overall project structure with the dual roles of providing key extension services to other ABPO members and farmers and of collecting and reporting on key project indicators on a regular basis under the supervision and support of provincial M&E officers and/or MAL provincial staff.

9. The project will be implemented according to a detailed PIM. The PIM will be prepared and officially adopted by MAL six months after the project's effectiveness. It will provide the step-by-step guidance for implementation of the project by components and key aspects of procurement, FM, M&E, and safeguards. In addition, a Grant Manual will be developed to guide the management of the project grants to the ABPOs.

10. A separate Implementation Manual for the CERC will be prepared and adopted by the MOFT. The manual will provide detailed guidance on special institutional arrangements for coordinating and implementing the CERC; specific activities which may be included in the CERC, eligible expenditures required thereunder ('emergency expenditures'), and any procedures for such inclusion; FM arrangements for the Emergency Response Part; procurement methods and procedures for the Emergency Response Part; documentation required for withdrawals of the emergency expenditures;



application of any relevant safeguards instruments to the Emergency Response Part; and any other arrangements for the coordination and implementation of the Emergency Response Part.

11. Under the SI ART, the project support will be in the form of (a) public investment to productive infrastructure, (b) grants to ABPOs (with mandatory contributions of ABPOs), and (c) innovation prizes in the form of project-financed low-value goods and equipment as awards to winners at the Annual Innovation Competition and Development Market Place. Productive infrastructure will employ participatory processes for identification stage and normal public investment procedures following World Bank's Procurement Regulations. ABPOs will be required to develop a Business Plan acceptable to the World Bank and provide evidence of their contribution of at least 10 percent of the total budget under the Business Plan. The PMU and MAL will assess the Business Plan and if it meets the project's criteria (detailed criteria will be further developed in the PIM), and then the project will provide the grant of 90 percent of the Business Plan budget (through a decision issued by MAL, subject to the approval of the World Bank). The project grant will be provided in tranches per milestone to the ABPO's bank account to ensure the effective and efficient use of resources for implementation of the Business Plan. Details of milestones will be further developed in the PIM. Full acquittal of the preceding tranche is conditional for transferring of the subsequent tranche.

Procurement

12. **Applicable procurement regulations.** Procurement under the project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers for Goods, Works, Non-Consulting and Consulting Services, dated July 1, 2016 (revised in November 2017, August 2018, and November 2020). This includes the requirement for the implementing agency (MAL) to prepare a PPSD which will form the basis for devising the most appropriate procurement arrangements and a PP for the project and subject to the World Bank's prior approval. The project will be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006, revised in January 2011, and as of July 1, 2016. The project shall also use the Systematic Tracking of Exchanges in Procurement (STEP) to plan, record, and track procurement transactions.

13. **Procurement staffing.** As part of risk mitigation measures, the implementing agency (MAL) will be staffed with a procurement officer with additional procurement assistant who will assist and report to the procurement officer. Preferably the procurement officer candidate shall have experience with the World Bank Procurement Regulations and be familiar with the STEP system. Both the procurement officer and procurement assistant shall be hired as soon as possible to assist the procurement function within MAL to develop the PPSD and PP and strengthen procurement capacity of MAL.

14. **Implementation support plan.** As the procurement risk is assessed as **Substantial**, other than hiring the procurement officer and procurement assistant to strengthen MAL's procurement capacity, the World Bank's procurement specialist will supervise the implementation of the PPSD and PP on a semiannual basis to ensure timely procurement processes of project activities/packages at central, provincial, and community levels. For this, the procurement team will provide virtual/online procurement training, including STEP system training, to the project's procurement officer and procurement assistant at the central level and make the procurement officer at the central level as the trainer or mentor for the one at provincial and community levels.



Financial Management

15. **FM staffing.** MAL establishes the PMU to oversee project operations. The PMU includes a project manager and other support staff. Additional consultants or advisers will be recruited with the aim of strengthening the overall procurement and FM function of the PMU under MAL. In any circumstances, it is important that MAL takes full fiduciary, including FM, responsibilities of the project, such as the reporting, monitoring, and oversight of the FM function.

16. **Accounting policies, systems, and procedures.** The project will adopt accounting policies and procedures applied by the SIG and acceptable to the World Bank.

17. **Internal controls.** The PMU under MAL is responsible for ensuring that an adequate internal control framework and internal controls are in place and operating for the project. All these internal control procedures, including detailed FM guidance, are specified in the PIM and FM Chapter, in accordance with government regulations including authorization of payments and transactions, segregation of duties, asset physical management, cash management, budget formulation and variance analysis, and financial reporting.

18. **Fund flow and disbursement arrangement.** One separate pooled Designated Account (DA) in Solomon Islands dollars for receipts of only IDA Grant and Credit funds will be opened at the Central Bank of Solomon Islands or one of the commercial banks present in the Solomon Islands acceptable to the World Bank. The MOFT will manage the DA and then subsequently channel the funds from the DA to a separate project bank account in Solomon Islands dollars for the receipt of funds only from the IDA Grant and IDA Credit to implement project activities at both central and provincial levels. The disbursement methods available to the project include reimbursement, advances, special commitment, and direct payments. The ceiling of the DA will be set as equivalent to about six months' worth of project expenditures to be financed out of the funds in the DA and to be specified in the Project Disbursement and Financial Information Letter. The minimum value of applications for direct payment, reimbursement, and special commitment is also set in the Project Disbursement and Financial Information Letter to facilitate payment processing.

19. **Financial reporting and external audit.** The PMU within MAL will be responsible for overall FM and financial reporting. The PMU will consolidate the project activities at both central and provincial levels (relevant PPT will prepare financial statements on an ABPO Grant recipient's behalf) and prepare interim unaudited financial reports every six months and submit these reports to the World Bank within 45 days of the end of each six-month period (semester). The project annual financial statements—which cover all project components—will be prepared and audited either by the Office of the Auditor General (OAG) of the Solomon Islands or by selected private audit firms in the island. In case the OAG is not available, a private audit firm in the island will be selected and financed from the project fund to fully comply with annual audit requirement. The audited financial statements and the management letters of the whole project will be submitted to the World Bank within six months after the end of each fiscal year.

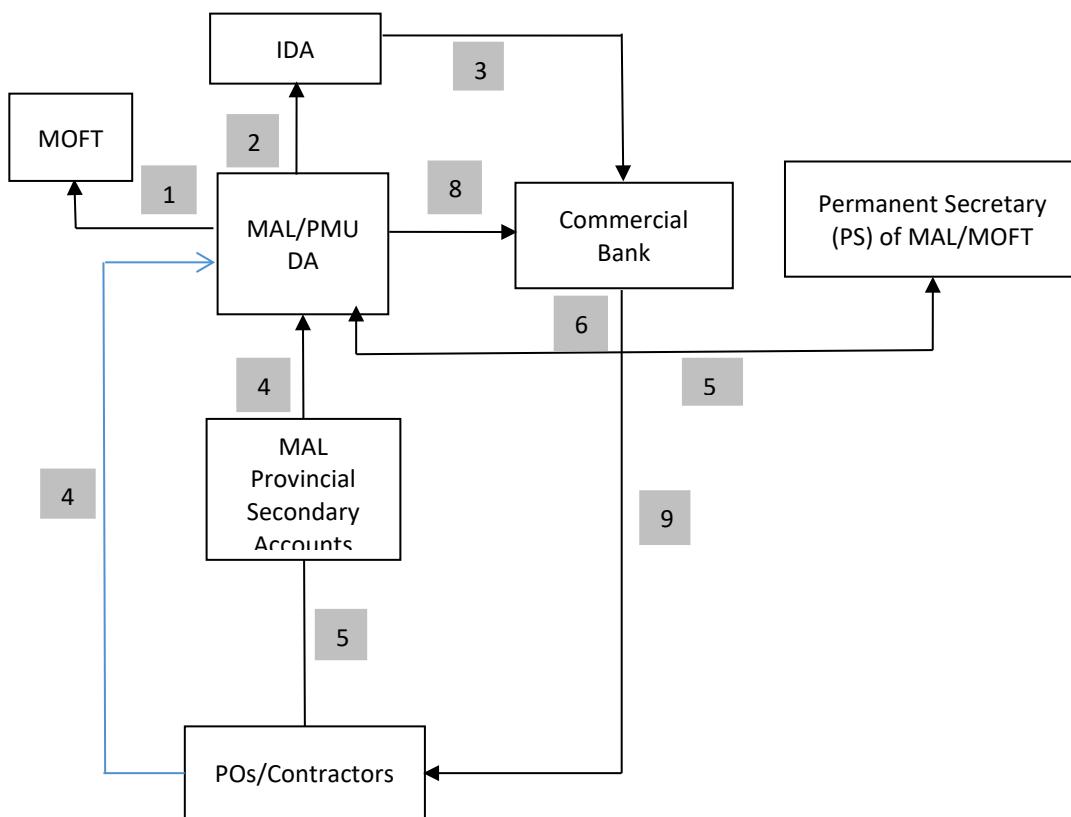
20. **Implementation support plan.** As the FM residual risk is assessed as **Substantial**, supervision of project FM will be done on a semiannual basis. The FM performance is to be monitored by reviews of the semesterly (semiannual) interim unaudited financial reports and discussions with MAL/PMU and project teams; other remote FM support includes regular online team/FM meetings with the project team to



discuss the FM implementation issues and provision of online training to the project FM staff, in lieu of onsite FM missions. Otherwise, biannual FM missions will be carried out to reassess FM risks and performance. Time-bound FM action plans will be prepared for implementation to mitigate any identified control weaknesses and risks.

21. **Summary of the flow of funds and the accountabilities.** Figure 2.2 presents funds flow for the SI ART.

Figure 2.2. Project Funds Flow



1. The PMU prepares and sends withdrawing application to the MOFT and MAL for co-signatures.
2. The PMU submits withdrawing applications to IDA.
3. IDA/IBRD disburses fund to the DA of the PMU at a commercial bank.
4. The PMU advance project funds to secondary accounts at provincial levels.
5. POs/contractors submit claim for expenditure to either the provincial coordinator or PMU.
6. The PMU consolidates, reviews, certifies, and then submits to the PS of MAL for approval.
7. The PS of MAL checks, approves, and sends back to the PMU.
8. The PMU sends the request for payments to the commercial bank.
9. The commercial bank makes payment to the ABPOs/contractors.

22. **Disbursement arrangement.** The World Bank's documentation of eligible expenditures under reimbursement and advance methods will be based on the statement of expenditures; a template of the statement of expenditures will be attached to the Disbursement and Financial Information Letter. Direct



payments will be utilized for procurement of goods and contracts with payments exceeding the minimum application size. The disbursement deadline date is four months after the closing date of the project.

23. Other disbursement methods, such as reimbursement, direct payment, and special commitment, remain available to the project.

24. Table 2.1 presents the SI ART's disbursement details.

Table 2.1. Eligible Expenditure, Grant/Credit Proceeds Allocation, and Financing Percentage

Category	IDA Grant Allocated (US\$)	IDA Grant Allocated (SDR)	IDA Credit Allocated (US\$)	IDA Credit Allocated (SDR)	Percentage of Expenditures to Be Financed (inclusive of taxes)
(1) Goods, works, non-consulting services, consulting services, stipends, training and operating costs for the project except Parts, 1.1 (c), and 2.2(a)(i)	3,700,000	2,700,000	5,910,000	4,300,000	100%
(2) ABPO grants under Parts 1.1 (c) of the Project	5,300,000	3,800,000	0	0	100% of amount disbursed
(3) Sub-grants under Part 2.2(a)(i) of the Project	0	0	90,000	100,000	100% of amount disbursed
(4) Emergency expenditures under Part 4 of the project	0	0	0	0	100%
Total	9,000,000	6,500,000	6,000,000	4,400,000	

Monitoring and Evaluation

25. The M&E system will monitor the performance of the project with respect to the baseline situation by tracking inputs, outputs, and achievement progress toward the PDO and intermediate results indicators.

26. The result monitoring and evaluation is developed and put into function for project management and provision of timely data and information to allow for timely self-evaluation and to take corrective measures if needed. The M&E plan of the project is based on the indicators detailed in the project's Results Framework. The Results Framework includes the indicators, their unit of measurement, baseline value, annual targets, data sources and methodology for calculation of annual progress against the indicators, frequency of data collection, and responsibility for data collection and reporting.

27. **Formulation of Result Framework indicators.** The Result Framework includes the PDO indicators, intermediate indicators, and the component-specific performance indicators. The PDO indicators include



the core indicator on direct project beneficiaries and Result Framework indicators include at least one satisfaction indicator as part of the citizen engagement strategy that will capture the satisfaction of target beneficiaries with project interventions. Each of the PDO indicators is described especially in relation to the overall goal. The intermediate indicators are selected to balance the number of results areas that are considered critical to keep the overall project on track. Annual and end-of-project targets are set based on the present situation, baseline level, expected level of changes based on the potential scope and funding of intervention, and the capacity of implementation stakeholders. The component indicators are relatively straightforward and easy to measure with few quality issues and rely on existing data sources

28. **Measurement of indicators.** PDO indicators will be measured at midterm and the end of the project. All immediate indicators will be measured and reported annually, and component indicators will be reported quarterly or biannually. This is also the case for indicators that have achieved their targets as well as for those for which the target has to be achieved only at midterm or at the end of the project. Indicators are interlinked and continued measurement contributes to ensuring that the first year's indicators indeed contribute to achieving end-of-project indicators. Furthermore, end-of-project indicators will be measured from Year 1 to ensure the validity of the data source(s) and methodology and as a test of attribution.

29. **Impact evaluation.** To account for the change brought about by the project and foster an understanding of its consequences on beneficiaries, the project will conduct a rigorous scientific impact evaluation. The impact analysis deals with the intended and unintended benefits of project interventions. The project will arrange for baseline and end-line surveys to inform its impact evaluation. Both surveys will apply rigorous setup with treatment and control groups for project attribution. Impact evaluation will use the difference-in-difference method (or other relevant methods). Thematic studies and/or light survey may be conducted at the midterm review to inform the project progress toward its stated PDO and any adjustment required at that time. MAL would also contract with an independent monitoring agent to conduct specialized studies and surveys during the project to closely monitor the intermediate results of agriculture production and value chain activities to rapidly assess project implementation and outcome issues.

30. **M&E plan.** An M&E plan will be developed to define (a) what specific data and information are to be collected consistent with the project indicator systems (inputs, processes, results, and impacts); (b) who, how, and when they will be collected; and (c) how they will be stored, processed, and delivered. Much of the data collected will be disaggregated by gender. The M&E plan will be realistic with focus on information critical for project monitoring and assessment taking into account existing M&E capacity constraints. The data will feed into the implementation supervision missions and will be used to track the progress that the project makes in terms of outcomes.

31. **Monitoring and MIS.** The project's MIS will be developed and rolled out from the first year of project implementation. The MIS will be maintained and managed by the PMU at MAL in collaboration and coordination with PPTs. The MIS will be modular and will integrate all information needs, including the monitoring reports, planning, and decision-making on project intervention modification.

32. The project MIS will contain and manage data in relation to inputs and outputs of project interventions, status of intervention progress, and accounting data. That includes information about project activities (or subproject) with geotagging. Basic information of the subprojects including, but not



limited to, name, scale, and the number of beneficiaries or participants (men/women); progress status, investment, and funding, the progress made at the time of retrieval; and images before and after the subproject ended. In addition, MIS data will record the immediate changes for project beneficiaries as a result of the project intervention, with regard to the increase in production and sale revenue of ABPOs and the increase in sale revenue of beneficiary value chain actors.

33. The MIS, as a key management instrument, will be designed to be user-friendly and, as much as possible, integrated with project implementation processes, allowing the export of reports in real time, updating data to key reports automatically.

34. Depending on the level of mobile phone coverage, the project will investigate the application of smartphone technologies for monitoring including grievance reporting and geotagging.

35. The project will introduce the farmer record books, the farmer association profile, and the ABPO's profile as the monitoring tools using standardized formats. Farmer record books/ABPO's profile will record data on their production process and achievements gained by beneficiaries and adoption of new skill/practice or farming techniques learned from project intervention. Farmers/ABPOs will be trained on recording and keeping the books. Data from the farmer record books/ABPO's profile will be checked/validated by provincial M&E officers before feeding to the MIS for analysis and used for routine monitoring reports.

36. **MIS data collection arrangements.** Collection of data for the MIS will commence at the community, with the CRP. The data will be communicated and aggregated at the project PPT office and then at the PMU at MAL.

37. **Reporting.** The PMU will process M&E reports quarterly at the regional levels and every six months at the national level. Semiannual and annual reports will be circulated to the concerned departments of MAL and MAL regional office. It is important that M&E reports bring analytical values to help MAL/PMU at the central level and project management bodies at regional levels monitor the project's progress closely and help the management make timely and efficient decisions.

38. **Sharing and learning facilitation.** Through a focus on result monitoring and evaluation and related learning facilitation, it is expected to provide useful lessons to formulate future development agriculture interventions in the Solomon Islands.

39. Furthermore, as M&E is vital to learning and transparency and provides a platform of evidence to inform policy, particular attention should be paid to building sustainable monitoring capacity for MAL and stakeholders that will extend beyond the life of the project. For this, M&E workshops will be conducted to discuss improvement of the M&E system, share lesson learned, and facilitate the M&E tools and results.

40. **M&E operation.** The project M&E system will operate at the central, provincial, and community/ABPO levels.

41. **Roles and responsibilities in M&E.** Overall M&E of progress toward the project objectives and outcomes will be the responsibility of the PMU, based within the MAL. The M&E specialist positioned at the PMU will (a) specify MIS requirements and ensure that the robust required information is made



available and prescribed in a uniform reporting process; (b) supervise all M&E activities under the project, ensure quality control for data obtained from the various components (or project regional offices), and take the lead in compiling data for reporting; and (c) provide (or design) training courses to all project M&E officers on standardized methods and tools for systematic data collection, analysis, and sharing of information.

42. **M&E at the provincial level.** An M&E officer will be hired at the PPT to be in charge of M&E at each province. The M&E officer will coordinate regular data collection and field visits to monitor project implementation and data verification

Implementation Support Plan

43. The project will require intensive implementation support and a continuous dialogue with the client. The World Bank's implementation support strategy combines periodic supervision with timely technical support and policy advice as necessary. Implementation support will include (a) an implementation support mission every six months; (b) interim technical discussions and field visits by the World Bank; (c) monitoring and reporting by the PMU on implementation progress and achievement of results; (d) third-party impact evaluation (baseline, midterm, and final); (e) half-yearly progress report from MAL; (f) annual internal and external financial audits and FM reporting; and (g) periodic procurement post review. The implementation support mission will visit randomly selected project sites to assess and physically verify the work financed by the project. These site visits will include interaction with members of the ABPOs, PMU team, MAL officers, provincial extension staff, YPs, paravets, CRPs, the private sector, NGOs, bankers, telecom service providers, and so on. The implementation support mission and technical support mission may be conducted online depending on the COVID-19-related travel restrictions.

44. It is expected that the early implementation phase, in particular, could face implementation challenges, which will be addressed through the following actions:

- (a) **Implementation support strategy.** This will be largely built on dialogue and partnerships. The implementation support team will have continuous interaction with all stakeholders of the project such as MAL, the Ministry of Commerce Industry Labor and Immigration, bankers, telecom service providers, the private sector, and NGOs. This will require consistency in the composition of the core implementation support team, technical expertise, and familiarity with country/local situations.
- (b) **Capacity building of the implementation agencies.** Significant training and hands-on support will be required at a technical level and in terms of fiduciary and safeguards management. This will include supporting the PMU in (i) development of annual work plan and budget, (ii) review of implementation; (ii) review of important project guidelines on PO, CRP, community managed extension system, YP, Internship, and terms of references (ToRs) for key consultants and consultancies; and (iii) coordination with development partners.
- (c) **M&E and learning.** Coordination of M&E and the capturing of project outcomes and results will need professional guidance from an M&E expert on the implementation support team.



- (d) **Fiduciary assurance support.** The proposed funds flow brings challenges for project FM. The implementation support team will provide hands-on guidance related to review and audit reporting procedures. Similarly, procurement activities will be spread widely among entities, types of procurement, and size of contracts. This will require intensive implementation support.
- (e) **Social and environmental safeguards.** M&E and mitigation of social risks require experienced expertise on the implementation support team with a good understanding of the culture and business process in the Solomon Islands. In addition, sufficient staff time and resources will be provided to review site-specific environmental management measures during the investment planning process for ABPOs, agricultural production interventions, and agribusinesses in both agriculture and smallstock. Special emphasis will be placed on strengthening the GRM to solicit feedback and grievances from the beneficiaries. The World Bank team will be able to access the report.

45. **Implementation support plan.** The following implementation support plan reflects the preliminary estimates of skill requirements, timing, and resource requirements over the life of the project. Keeping in mind the need to maintain flexibility over project activities from year to year, the implementation support plan will be reviewed periodically to ensure that it continues to meet the implementation support needs of the project. Table 2.2 indicates the World Bank team's implementation support plan and the required skill mix.

Table 2.2. Implementation Support Plan and Skill Mix

Time Needed	Focus	Skills
0–18 months	<ul style="list-style-type: none">• Setting up a core team at the PMU, project management systems including fiduciary, safeguards, and M&E• Baseline survey completed• Capacity building of the agriculture and livestock extension system of MAL• Organizing Development Market Place• Inducting YPs and interns• Inducting CRPs• Capacity building of ABPOs• Business Plan development of ABPOs• Digital technology in extension and MIS	<ul style="list-style-type: none">• Core team, particularly FM, procurement, M&E, and so on• Agriculture and livestock-based agricultural production and agribusiness• Development Market Place• YP and internship• Agribusiness producer organization and community managed extension experts• Banking sector experts• Digital agriculture experts
18–36 months	<ul style="list-style-type: none">• Performance of MAL staff and YPs• Performance of CRPs• Evaluation of ABPOs• Study of progress in agricultural feed production• Study of production and productivity enhancement of feed crops and smallstock• Performance of extension service to last mile• Status of productive infrastructure• Evaluation of inclusion of innovations and best practices to project components	<ul style="list-style-type: none">• Core team, particularly FM, procurement, M&E, and so on• Agricultural production and Agribusiness experts• Banking sector experts• Private sector link experts• Digital agriculture experts



Time Needed	Focus	Skills
	<ul style="list-style-type: none"> Performance of banking service and telecom services 	
36–54 months	<ul style="list-style-type: none"> Continued improvements in project management systems including fiduciary, safeguards, and M&E Performance of productive infrastructure Midterm evaluation of the project Stocktaking of project interventions and design improvements Prepare detailed learning and analysis framework 	<ul style="list-style-type: none"> Core team, particularly FM, procurement, M&E, and so on Technical specialists based on thematic focus of the missions
54–60 months	<ul style="list-style-type: none"> Completion of activities Understand failure and success parameters in close dialogue with the implementing agencies Facilitate knowledge exchange and events to consolidate project learnings Prepare detailed learning and analysis framework and prepare for end-of-project evaluation Support technical and financial analysis of project investments End-term evaluation and project completion report 	<ul style="list-style-type: none"> Core team, particularly FM, procurement, M&E, and so on Agricultural production and Agribusiness experts Banking sector experts Private sector link experts Digital agriculture experts

46. **Skill mix.** The skill mix and team composition for supporting project implementation are as proposed in Table 2.3.

Table 2.3. Skill Mix and Team Composition

Skills Needed	No. of Staff Weeks	Number of Missions	Comments
Agriculture, extension, and value chain specialist	56	15	Based in the region
Livestock specialist	30	12	Based in the United States
Infrastructure specialist	25	10	Based in the region
Environmental safeguard specialist	24	12	Based in the region
Social safeguard specialist/gender specialist	28	12	Based in the region
Procurement specialist	24	12	Based in the region
FM specialist	24	12	Based in the region
M&E specialist	28	12	Based in the region
Operations officer	30	20	Based in the country
Task team leaders	56	12	Based in the region

**ANNEX 3: Project Sequencing and Phasing Plan³⁷****COUNTRY: Solomon Islands
Solomon Islands Agriculture and Rural Transformation Project****Phase I (Year 1 through first half of Year 2)**

1. The project will follow a phased approach in which activities will be sequenced to achieve the project objectives. The project will start with the launching of the project at the national and provincial levels. The PMU and PPTs will be strengthened by hiring consultants and organizing project orientation and sequencing. The first major task of the PMU will be to develop a master capacity building plan. The plan will outline the activities together with the required actors to roll out the project's capacity building and pave the way for effective support to project investments and ABPOs. The plan will identify necessary training modules and MAL will gather this information and material.
2. MAL will identify relevant extension staff to provide extension services in the project's target villages and include them in the relevant training courses. The project will recruit approximately 50 YPs to support the project for three years and they will reside in the ABPO service areas. The YPs will also undergo similar training programs provided by MAL.
3. An expert agency will be contracted to develop a COCO-based MIS, and a consultant will be hired to prepare the project baseline activities. MAL will construct a training center and research centers at Tenaru and provincial MAL offices in Makira and Malaita. The Pig Breed Improvement Facility at Tenaru will be planned in Year 1 and constructed in Year 2.
4. In Year 1, Six pilot communities will also be identified: two villages in each of the three project provinces for agribusiness. The objective of this pilot will be to 'dry run' the systems and processes as defined in the PIM and Grant Manual and fine-tune the developing principles, meeting requirements, savings, inter-lending, repayment, and bookkeeping details. Tablets will be provided to check the efficacy of digital extension, access weather and market information through bulk messaging, and enter data into the COCO-based MIS. The project will learn from field constraints such as lack of connectivity or power supply and develop solutions, for example, establishing manual bookkeeping, which can then be implemented in ABPOs facing similar constraints.
5. The pilot will inform the prerequisites and duration for registration as well as the processes for opening bank accounts, with suitable ABPO-friendly solutions developed by collaborating with relevant ministries, departments, and banks. Books of registers for ABPOs will be developed by the PMU, which will not require farmer literacy. Identification, selection, and an incentive payment system for CRPs will be established in ABPOs and the amount of working capital required per ABPO will be better estimated. The role of agribusiness companies as well as the timing and duration required for establishing machine hiring centers, nurseries, and seed banks will also be explored. Procurement of chicks and piglets from local sources to promote semi-commercial poultry and pig rearing will also be explored. Meetings and

³⁷This annex presents local and sequential stages for project activities as a guiding process. Further details will be provided in the PIM. The phases/stages are for illustration purposes.



discussions with the ministries and banks will be organized based on the pilot results to explore solutions to move toward registration of all ABPOs and provide them with standardized books of registers and banking operation facilities.

6. The project will generate awareness on innovative ideas and practices by inviting the submission of innovations on an annual basis. Youth and youth entrepreneurs will be encouraged, and winners will be selected through rating tools to evaluate submissions. The PMU will establish a committee of experts from MAL and other relevant agencies to develop these rating tools.

Phase II (Second Half of Year 2 through Midterm Review)

7. The second phase of the project implementation will begin from Year 2. More ABPOs will be brought on and additional CRPs will be mobilized by MAL-trained extension workers. Registration of ABPOs and bank account opening will be streamlined and scaled up. The project will also finance the registration of selected ABPOs identified through Subcomponents 1.1 under relevant acts. Support will be provided to eligible ABPOs for registration under the Solomon Islands' Co-operative Societies Act 1953. The PIM will contain detailed processes and reference to the applicable sections of the relevant act for registration of the ABPOs.

8. Training programs will be organized for all ABPO members; extension services such as information, demonstration, and video shows will be provided directly to ABPO members by the CRPs. Digital extension, information dissemination, and the MIS will be streamlined across ABPOs and user-friendly books of registers will be made available. The project will streamline the incentive payment system of CRPs by ABPOs and interns will be institutionalized during this phase. Selected youth in the ABPOs will be trained in repair and maintenance work. Nurseries, seed banks, machine hiring centers, user fee collection, and the repair and maintenance of equipment will be established at the ABPO level. Market links will be established by the project in the absence of agribusiness companies as partners.

9. Applied research on feed crops, the upgrading of veterinary laboratories, replacement of parent stock for pig breed improvement, and the design and construction of the Pig Breed Improvement Facility at Tenaru site will begin in the second phase. Meat inspectors will also be trained during this period, who in turn will provide technical support at pig and poultry slaughter slabs. Investment will be made in the National Research Center and the project will start the selection of strategic locations in Makira to develop a local market and a storage facility.

10. Selected innovators from the annual competition will be invited to work with existing ABPOs or develop a new ABPO to replicate and scale up their innovations in the project provinces. These innovators may also be hired as resource persons to train/guide/advise ABPOs.

Phase III (after Midterm Review through Year 5)

11. During this phase, the Development Market Place will be organized to showcase best practices and products. It is expected that this will establish market links by creating more buyers from the national and international levels and generate higher price realization for the ABPO members. Selected best practice innovations can also be replicated and scaled up in the participating ABPOs.



12. This phase will also focus on scaling up activities, including the availability of piglets from the Pig Breed Improvement Facility; day-old chicks from village-operated egg incubators; the preparation of smallstock feed from feed crop production, with inputs from the research laboratory; and availability of quality meat from pig and poultry slaughter slabs. Fully functional machine hiring centers, seed banks, and nurseries will be streamlined and scaled up.

13. The component, subcomponent, and year wise phasing and sequencing of activities are presented in the following table.

Table 3.1. Sequencing of project activities by year

Components/Activities	Year 1 (2022– 2023)	Year 2 (2023– 2024)	Year 3 (2024– 2025)	Year 4 (2025– 2026)	Year 5 (2026– 2027)
Component 1: Agribusiness and Infrastructure Investments					
<i>Subcomponent 1.1: Agribusiness Producer Organizations</i>					
Identification of existing ABPOs working in agribusiness					
Agribusiness pilot in 6 ABPOs/villages	6				
Formation and strengthening of ABPOs			50	44	
Selection of CRPs		6	50	44	
Training of CRPs		6	50	44	
<i>Institution Building Trainings to ABPO Members</i>		6	50	44	
Registration of ABPOs			50	44	
Opening of bank accounts			50	48	
Business Plan development			50	48	
<i>Technical Training to ABPOs</i>		6	50	48	
Installation of value chain assets		6	50	48	
Working capital received by ABPO		6	50	48	
Establishment of machine hiring center		6	50	48	
Training of youth on repair and maintenance services		12	50	48	
Providing set of books of registers to ABPOs	6	6	50	48	
Providing tablets to ABPOs	6	6	50	48	
Agriculture and smallstock value chain through ABPOs		6			
<i>Subcomponent 1.2: Infrastructure Investments</i>					
Research center at Tenaru, Guadalcanal		1			
Research center at headquarters, Honiara		1			
Storage facility in Kira-Kira, Makira		1			
Rural market development at Makira		1			
Pig Breed Improvement Facility at Tenaru, Guadalcanal	1	1			
Provincial MAL office at Makira and Malaita		2			
Training center at Tenaru, Guadalcanal	1				
Component 2: Institutional Capacity Development					



Components/Activities	Year 1 (2022– 2023)	Year 2 (2023– 2024)	Year 3 (2024– 2025)	Year 4 (2025– 2026)	Year 5 (2026– 2027)
<i>Subcomponent 2.1: Community Managed Extension System</i>					
ToR for hiring training department, MAL	1				
Contract signing between MAL and training department	1				
Training module and material development	1				
ToTs for extension staff and YPs	80				
Recruitment of YPs	4	3	24	19	
Training of extension staff on pilot	12				
Internship of FAFF, SINU students		20	40	20	20
<i>Subcomponent 2.2: Smallstock Sector Renewal</i>					
Pig slaughter slab			1		
Poultry slaughter slab			1		
HACCP hygiene slaughter accreditation			2		
Training of four meat inspectors		4			
Strengthening MAL Pig Breed Improvement Facility		1			
Applied research on high-protein feed crops (field trials)					
Establishment of feed analysis laboratory		1			
Central veterinary laboratory		1			
Provincial laboratories		2			
Hiring of veterinary consultant	1				
<i>Subcomponent 2.3: Innovations and Development Market Place</i>					
Annual innovation competition	1	1	1	1	1
Hiring of expert agency			1		
Showcasing workshop			1		
Component 3: Project Management					
Project launch in Honiara	1				
Project launch in 3 provinces	3				
Hiring and placement of consultants at PMU	13	3			
Hiring and placement of consultants for 3 provinces	15				
Hiring contractors for MIS development	1				
Hiring agency for baseline	1				
Hiring agency for impact assessment					1

**ANNEX 4: Economic and Financial Analysis****COUNTRY: Solomon Islands**
Solomon Islands Agriculture and Rural Transformation Project

1. An economic and financial analysis of the project was undertaken to assess the economic soundness of the project and its likely impact on the target beneficiaries. The economic and financial impacts were estimated at two levels: (a) societal economic impacts of the project resulting from the overall project investment and (b) direct economic and financial impacts of the project's productivity and income-enhancing interventions on primary beneficiaries (small farmers organized into ABPOs).
2. **Methodology.** The analysis considers the project costs and project outreach assumptions at the time of appraisal. The assumptions for the economic analysis are linked to the project's Results Framework and its PDO indicators. The economic analysis is also informed by the results of the financial analysis which has been carried out for the main productive activities supported by the project. A sensitivity analysis was conducted to assess the impact of changes in the main parameters affecting the economic outcome of the project as a result of (a) changes in project costs, (b) changes in expected benefits from the production systems promoted by the project, and (c) delays in project execution due to the risks that have been identified in the project's risk analysis.
3. The economic and financial analysis was carried out through the following steps: (a) potential value chains to be supported by the project were preselected; (b) within the selected value chains, illustrative models of ABPOs were prepared, which provide an indication of the viability of the businesses and potential profit margins in the value chain; and (c) indicative returns to investment gross margins were calculated and aggregated with equal weight to ensure appropriate balance of representation of economic sectors in the overall project benefit stream. All models are expressed in 2020 constant prices. The analysis builds on primary data collected by MAL in October 2020, experience from the RDP project and secondary sources, and a comprehensive review of relevant publications and case studies. The NPV is calculated over all incremental inflows and outflows, including the costs of financing investments and working capital, for five years. Incremental economic costs have been calculated by the removal of price contingencies and taxes/duties and a shadow exchange rate factor of 1.13 was taken based on the export/import data for the country for the last five years.
4. **Learning from RDP II.** The agribusiness partnerships under RDP II have promoted value chain development of commodities that include cocoa, coconut, ngali nut, honey, fruits and vegetables, and small livestock. The program has facilitated partnerships between the private sector, agribusiness enterprises, and smallholder farmers; introduced technologies; and improved efficiencies along the value chain. An impact assessment conducted in May 2020 studied 35 such agribusiness partnerships to benefit 16,948 people. The total value of the partnerships is SBD 50,867,263 and these investments have in turn leveraged SBD 23,612,353 as contribution from partners and farmers in the form of cash and kind.

Table 4.1. Average Investment in Business Enterprises in RDP II

Commodity	% Distribution	Average RDP Grant (SBD)	Average Total Investment (SBD)
Vegetables	2.9	689,527	876,367
Fruits	2.9	690,700	889,000



Commodity	% Distribution	Average RDP Grant (SBD)	Average Total Investment (SBD)
Pig	2.9	1,028,272	2,579,412
Ngali nut	5.7	1,237,790	1,671,526
Coconut	34.3	1,325,858	2,002,390
Cocoa	37.1	1,543,067	2,008,978
Honey	2.9	1,938,010	2,771,960
Copra oil	2.9	1,972,444	2,628,444
Cattle	2.9	1,985,562	2,615,778
Mixed commodity	2.9	2,000,000	2,601,077
Cocoa, honey	2.9	2,000,000	7,218,120

5. **Project area and beneficiaries.** The project will be implemented in the provinces of Guadalcanal, Malaita, and Makira, with farmers who are involved in semicommercial production and value addition. The proposed project will support farmers through both the establishment of new, and strengthening of existing, ABPOs. It is expected that the project will reach around 5,000 households. Table 4.2 provides an overview of project costs, outreach, and phasing assumptions, including estimated costs per main unit of output (for example, farm household reached). This allows the assessment of the project's efficiency at completion in terms of actual costs relative to the planned costs per unit of output as well as comparison with similar projects.

Table 4.2. Outreach and Phasing of SI ART by project year

	(Project) year 1	Year 2	Year 3	Year 4	Year 5	Total
Business Plan financing (PO)	6	16	50	38		100
Mini feed mill	—	1	—	—	—	1
Slaughter slabs	—	3	3	—	—	6
Community extension workers promoted	—	24	70	56	—	150
YPs supported	4	3	24	19	0	50
Intern supported	—	20	40	20	20	100

6. **Project benefits.** The main benefits of the project that contribute to the project EIRR are increased and diversified incomes of the targeted beneficiaries in the project area. Specifically, this will result from (a) adoption of improved agricultural and animal husbandry practices; (b) productivity enhancement of key production activities; (c) improved marketing, postharvest management, and processing from increased investment in value chain activities; and (d) increased opportunities for farm and nonfarm employment including self-employment. Other benefits that are difficult to quantify in monetary terms include (a) improved agricultural production and dietary diversification for targeted households, (b) improved extension systems and doorstep delivery of extension services, (c) increased financial inclusion, and (d) improved penetration of digital services for effective monitoring of services.

Table 4.3. Description of Illustrative Enterprise Models

Sl. No	Activity	Without Project (WoP) Scenario	With Project (WP) Scenario
1	Small-scale poultry	Flock of 30 birds with low hatching rate and high mortality	Flock of 30 birds with improved hatching rate and low mortality due to investments in low-cost night shelter, nest boxes, and so on. Also promote increased consumption of eggs for supporting dietary diversification



Sl. No	Activity	Without Project (WoP) Scenario	With Project (WP) Scenario
2	Small-scale pig rearing	Herd of 2 sows and 1 boar. Low production capacity and high mortality	Herd of 4 sows and 1 boar. Improvements include 2 farrowing crates to reduce piglet mortality and supplementary cassava feeding
3	Semicommercial broiler	Flock of 300 birds. Production capacity and efficiency one-fifth of commercial unit. Live bird sale only.	Flock of 300 birds. Investments in poultry house, use of imported feed in bulk, bulk sale, and possible sale of poultry slaughtered in poultry slaughter slabs
4	Pooled pig production	Herd of 40 sows and 3 boars. Low production capacity and high mortality	Herd of 40 sows and 3 boars. Investments in pigsty, production equipment for reduced drudgery, and cassava grinder for improved feeding
5	Cassava production	All products sold unprocessed in the market. Assume SBD 20 per kg. Family provides labor on farm.	ABPO of 60 farmers. Investments in equipment, drying bed, cassava chipper. Cassava is dried into chips for sale in the market and cassava leaf also sold for feed in poultry.
6	Coconut - virgin coconut oil	Existing farmers trade in copra from which they yield 250 kg per hectare from their farm. Copra fetches a low export value of SBD 4.4 per kg.	Group of up to 60 farmers form a ABPO and supply a DME unit managed by a member of the ABPO. Farmers add value to their produce by turning 60% of nuts earmarked for copra into virgin coconut oil which fetches a higher export value of SBD 18–24 per kg.
7	Cocoa	Existing farmers yield 350kg of dry cocoa beans per hectare from their farm through hot-air drying which fetches a low export value of SBD 11–13 per kg.	60 farmers organize as a ABPO to supply dry bean in bulk to exporters. The SI ART will support construction of basic solar driers for members to use and provide training and extension support to improve yield and rehabilitate plantation. Solar-dried beans sold by the ABPO will fetch a higher market export value of SBD 15–17 per kg.

7. **Financial analysis.** The demand-driven nature of the project makes it difficult to predict the exact investments in each commodity value chain. Hence, the financial analysis for this project focuses on the key commodities that have been promoted in RDP II and based on the distribution of livelihood activities as indicated in the Report on National Agricultural Survey 2017. Further, these activities are well aligned with the ASGIP's commodity-focused Subprograms 3.3 Pig Industry Development, 3.4 Poultry Industry Development, 3.5 Honey Industry Development Program, 4.1 Coconut Industry Development, and 4.2 Cocoa Industry Development. Detailed financial models were prepared for key production commodities with typical smallholder plot sizes, providing an overview of the production system including the key production parameters, farmer organizations, investments, and marketing channels. The main financial performance measures, including gross margin, net profit, return to family and total labor, and the return on investment, are calculated for the present (P) (as applicable), future WoP, and future WP scenarios. If applicable, the investment costs including required working capital and annual depreciation were calculated. The results show considerable increase in gross margin, net profit, and return to family and total labor for all production systems.



Table 4.4. Overview of Financial Analysis of Productive Activities Supported by the Project

Sl. No.	Activity	Unit of Production	Incremental Investments (SBD)	Annual Input Costs (SBD)		Annual Net Income (SBD)			Incremental Income per HH (SBD)
				WoP	WP	WoP	WP	Increment	
1	Small-scale poultry	30 HHs in a PO, 20 birds per HH	39,072	13,722	49,735	33,278	100,665	67,387	2,246
2	Small-scale pig rearing	30 HHs in a PO, 2 sows and 1 boar per HH	97,680	76,646	383,232	33,595	167,976	134,381	4,479
3	Semicommercial broiler	ABPO with 3,000 birds per year	215,710	12,850	113,917	27,470	193,164	165,694	16,569
4	Pooled pig production	ABPO with 40 sows and 3 boars	1,325,192	868,438	4,434,954	857,162	4,193,046	3,335,884	83,397
5	Cassava production	ABPO of 60 farmers	580,382	286,528	2,394,715	1,139,072	2,122,985	983,913	16,399
6	Coconut - virgin coconut oil	ABPO of 60 farmers	216,500	363,725	442,200	68,275	897,000	828,725	13,812
7	Coconut - coconut oil	ABPO of 60 farmers	278,569	1,380,533	1,656,640	1,049,467	1,889,040	839,573	13,993
8	Cocoa	ABPO of 60 farmers	160,000	633,401	765,646	148,807	988,890	840,083	14,001
9	Mini feed mill	130 tons	33,598	—	382,792	—	23,346	23,346	—
10	Slaughter slab	5,000 pigs per year	325,226	—	144,828	—	80,637	80,637	—

Note: HH = Household. a.

8. **Economic analysis.** The economic analysis is based on a cost-benefit methodology. The total financial project costs have been converted to economic costs (which exclude taxes and duties and price contingencies), using the Costab software. The analysis was carried out for a 20-year period, which is the estimated project life including the five-year project implementation period. It is based on 2020 constant prices, and a discount rate of 10 percent was assumed. The Solomon Island dollar was used as the unit of account and the official exchange rate of SBD 8.14 to US\$1 (October 2020) was applied when converting to US dollar. Since the project is demand driven, it is difficult to ex ante estimate the commodity-wise ABPOs promoted in the project. Hence, the 2017 Agriculture Census has been taken as a reference for the distribution of the ABPOs across the commodities.

Table 4.5. Ex Ante Projection of Commodity-Specific ABPOs to Be Promoted under ART

Sl. No.	Activity	POs to Be Promoted by ART	Distribution as per 2017 Agriculture Census



1	Small-scale poultry	10	18.7% of agri holdings kept poultry
2	Small-scale pig rearing	10	29.6% of agri holdings kept pigs
3	Semicommercial broiler	5	18.7% of agri holdings kept poultry
4	Pooled pig production	10	29.6% of agri holdings kept pigs
5	Cassava production	20	66.7% of agri holdings planted cassava
6	Coconut - coconut oil (virgin coconut oil and CN)	25	34.5% of agri holdings planted coconut
7	Cocoa	20	16% of agri holdings planted cocoa
Total		100	

9. **Economic viability.** The EIRR of the project over a 20-year period for the base case, excluding benefits from GHG emission reduction, is 33.9 percent with an NPV of US\$22.6 million at a discount rate of 10 percent. Placing a monetary value on potential GHG sequestration in terms of reduction in GHG emissions (estimated at 14,487 tons of CO₂ equivalent [tCO₂e] over the project life of 20 years), the base case EIRR increases to 33.8 percent for a low shadow price scenario and to 34.3 percent for a high shadow price scenario. This assumes that the low shadow price is US\$40 per ton at the start of the project and reaches US\$50 per ton at the end of the 20-year period and that the high shadow price is US\$80 per ton that reaches US\$100 per ton at the end of the 20-year period.

10. **Sensitivity analysis.** A sensitivity analysis was conducted to assess the impact of changes in the main parameters affecting the economic outcome of the project as a result of (a) changes in project costs, (b) changes in the expected benefits from the production systems promoted by the project, and (c) delays in project execution due to the risks that have been identified in the project's risk analysis. The results show that the project benefits are viable, and the project remains economically viable within a range of changes in project costs and benefits. A reduction in project benefits by 20 percent results in an EIRR of 26.0 percent. A 20 percent increase in project costs combined with a 20 percent reduction in project benefits reduces the EIRR to 20.4 percent. Table 4.6 presents an overview of the sensitivity analysis including other scenarios.

Table 4.6. Sensitivity Analysis of Project EIRR

Scenario			EIRR (%)	ENPV (US\$, millions)
Base case (without GHG)			33.3%	22.30
Base case (with GHG - low estimate)			33.8%	22.62
Changes (base case without GHG)				
Program costs	Incremental benefits	Benefits delayed by		
+20%			27.3%	18.38
+40%			22.5%	14.46
	-20%		26.0%	13.92
	-40%		17.3%	5.54
+20%	-20%		20.4%	10.00
Base case		1 year	25.6%	17.40
		2 years	20.6%	12.95
		3 years	16.9%	8.90
		1 year	15.6%	6.08



Scenario			EIRR (%)	ENPV (US\$, millions)
+20%	-20%	2 years	12.1%	2.51
		3 years	9.4%	-0.730.
Switching values^a				
Costs	+		113.6%	0
Benefits	-		53.3%	0

Note: a. Percentage change in cost and/or benefit streams to obtain an EIRR of 10 percent, that is, economic viability threshold.

GHG Accounting

11. The ex-ante GHG estimating analysis was carried out to ascertain the impact of project investments using the FAO EX-ACT which quantifies the net carbon balance in terms of tCO₂e, resulting from GHGs emitted or sequestered, as a result of project implementation compared to the WoP scenario. The GHG analysis was carried out as part of safeguards requirements and will help in lowering the carbon footprint of the project, which will bring both adaptation and mitigation benefits.

Table 4.7. Assumptions for Inputs Usage for Agriculture under the SI ART

Activity	WoP	WP
Poultry birds (number)	67,875	71,888
Swine (breeding) (head)	2,100	2,550
Area under perennial crops (ha)	583 317	650
Diesel consumption (1,000 liters)	0	198
Electricity (MWh)	0	130
Buildings (m ²)	0	1,600

12. **Project characteristics.** The dominant soil type in the Solomon Islands is high-activity clay soils, as per Intergovernmental Panel on Climate Change (IPCC) classification. The project implementation phase is 5 years of actual implementation and the capitalization phase is assumed to be 15 years, resulting in a 20-year implementation period which is common in the use of EX-ACT and aligned with the project period for the economic and financial analysis. During project consultations, it was assumed that the main benefits would come from adopting a sustainable and integrated farming system approach focused on water management, integration of composting for building soil health, promotion of animal husbandry, and sustainable agriculture. These are aligned to landscape approaches, CA principles,³⁸ and integrated farming systems being promoted globally for sustainable development. The ex-ante GHG emission estimates for the project based on the detailed crop budgets were prepared for key intervention areas and their impact over 20 years was analyzed.

13. GHG emissions from other components of the project such as promotion of higher order economic activities involving producer groups are difficult to estimate and hence have not been included in the ex-ante estimates. Based on the assumptions it is estimated that the project would result in decreased emissions of 16,920 tCO₂e compared to a business-as-usual baseline scenario over the next 20

³⁸<http://www.fao.org/conservation-agriculture/en/>



years. This is equivalent to an annual decrease in GHG emissions of 846 tCO₂e and consequently has a low positive impact on GHG emissions.

Table 4.8. Annual and Total GHG Emissions with and without the Project and Balance (tCO₂e)

Project Activities	Over the Economic Project Lifetime			Annual Average		
	GHG Emissions of WoP Scenario	Gross Emissions of WP Scenario	Net GHG Emissions	GHG Emissions of WoP Scenario	Gross Emissions of WP Scenario	Net GHG Emissions
Land use changes	-18,842	-25,740	-6898	-942	-1287	-345
Agriculture						
Annual	6,935	-9,709	-16,644	347	-485	-832
Perennial	-182,655	-195,588	-12932	-9133	-9779	-647
Livestock	47,887	56,031	8,411	2,394	2,802	407
Inputs	0	11,410	11,410	0	570	570
Total	-146,675	-163,596	-16,920	-7,334	-8,180	-846

**ANNEX 5: Project Contributions to Climate Change Adaptation and Mitigation****COUNTRY: Solomon Islands**
Solomon Islands Agriculture and Rural Transformation Project

Component	Subcomponent	Adaptation	Mitigation
1. Agribusiness and Infrastructure Investments	1.1: Agribusiness Producer Organizations (ABPOs)	<ul style="list-style-type: none">• Financing and support for CSA practices such as integrated farming systems, appropriate integrated nutrient management, choice of suitable crops and varieties, residue management like mulching and biodegradation of crop waste, CA, crop diversification, and so on• Innovative shelters and feeding stalls, drinking pan• Cattle feed and fodder production by using locally available crops and materials• Organic beekeeping and honey production, which will improve farm production through effective pollination• Aggregation, storage-shed management, and efficient transport planning lead to a smaller number of shipping transactions while transporting commodity through ship• Promotion of IDPM practices integrated nutrient management practices, regenerative agriculture, and different seed varieties which can withstand climatic hazards like flood and drought• Strengthened local food supply chains to be more resilient to climate shocks• Building of facilities such as storage facilities using climate sturdy equipment that is resilient to climate extremes and minimizes emissions• Establishing of efficient weather and climate information system to support adequate capacities to store commodities and manage a smaller number of shipping/road transportation	<ul style="list-style-type: none">• Climate mitigation screening of Business Plans which give priority to ones that invest in the sustainable and climate-smart value chain.• Promotion of renewable energy power sources: solar-operated tools and equipment.• Cocoa dry bean production through solar drier.• Use of digital wallet or online payment platform for easy payment transfer. This will reduce the carbon footprint related to transportation of ABPO members and financial transaction in farming.• Application of IDPM practices, which will reduce pest-induced crop losses, maintain ecosystem, and reduce the GHG emissions intensity per unit of crop produced.• Promotion of energy-efficient equipment and the application of renewable energy where possible for production and along commodity value chains, such as solar-powered storage and processing (for example solar driers).• Solar-powered small-scale village-based egg incubators using village technology.



Component	Subcomponent	Adaptation	Mitigation
		<ul style="list-style-type: none">• Collaboration among ABPOs to support each other by exchanging preferred commodities in large quantity and less quantity for selling in domestic market	
	1.2: Infrastructure Investments	<ul style="list-style-type: none">• Investment in climate-resilient, resource-efficient, and energy-efficient investments (including use of renewable energy whenever possible)• Rainwater harvesting practices• Adoption of climate resilient designs such as flood risks and promotion of energy efficiency/renewable energy in the infrastructure investment decisions• Reconstruction and/or adoption of improved engineering designs using international best practices standard to enhance their climate resilience• Strengthened producers' climate resilience (more resilient livelihoods) through improvement in local market infrastructure	<ul style="list-style-type: none">• Investments in climate-smart, resource-efficient, and energy-efficient infrastructures• Promotion of renewable energy power sources• Reduced transport to reach domestic market to sell commodities will reduce carbon emission
2: Institutional Capacity Development	2.1: Community Managed Extension System	<ul style="list-style-type: none">• Training on climate change resilience including CSA and energy and resource efficiency• Mainstreaming of CSA into extension curricula to include GAP• Promotion of e-extension services on CSA through tablets or projector-based smartphones• Demonstration and video shows on best practices by CRPs at the doorstep of farmers• Training on best practices for ABPO members in the regular ABPO meeting	<ul style="list-style-type: none">• Training on climate change mitigation including CSA and energy and resource efficiency• Technical assistance on CSA and climate mitigation principles• Promotion of e-extension services on CSA through tablets or smartphones• Ensuring of extension services including demonstration and video shows by CRPs at the doorstep of farmers through tablets or smartphones and projectors
	2.2: Smallstock Sector Renewal	<ul style="list-style-type: none">• Investments in hygienic slaughter slabs and hygienic slaughtering practices as they convert the unhygienic and poor waste disposal of home slaughter which contributes to air and soil pollution into a climate-friendly waste disposal system and possible biogas production	<ul style="list-style-type: none">• Reduction of methane or other GHG emissions (with biodigesters)• Solar-powered village-based small-scale egg hatcheries and solar-powered scalding water for pig slaughter should be included• Use of climate-smart

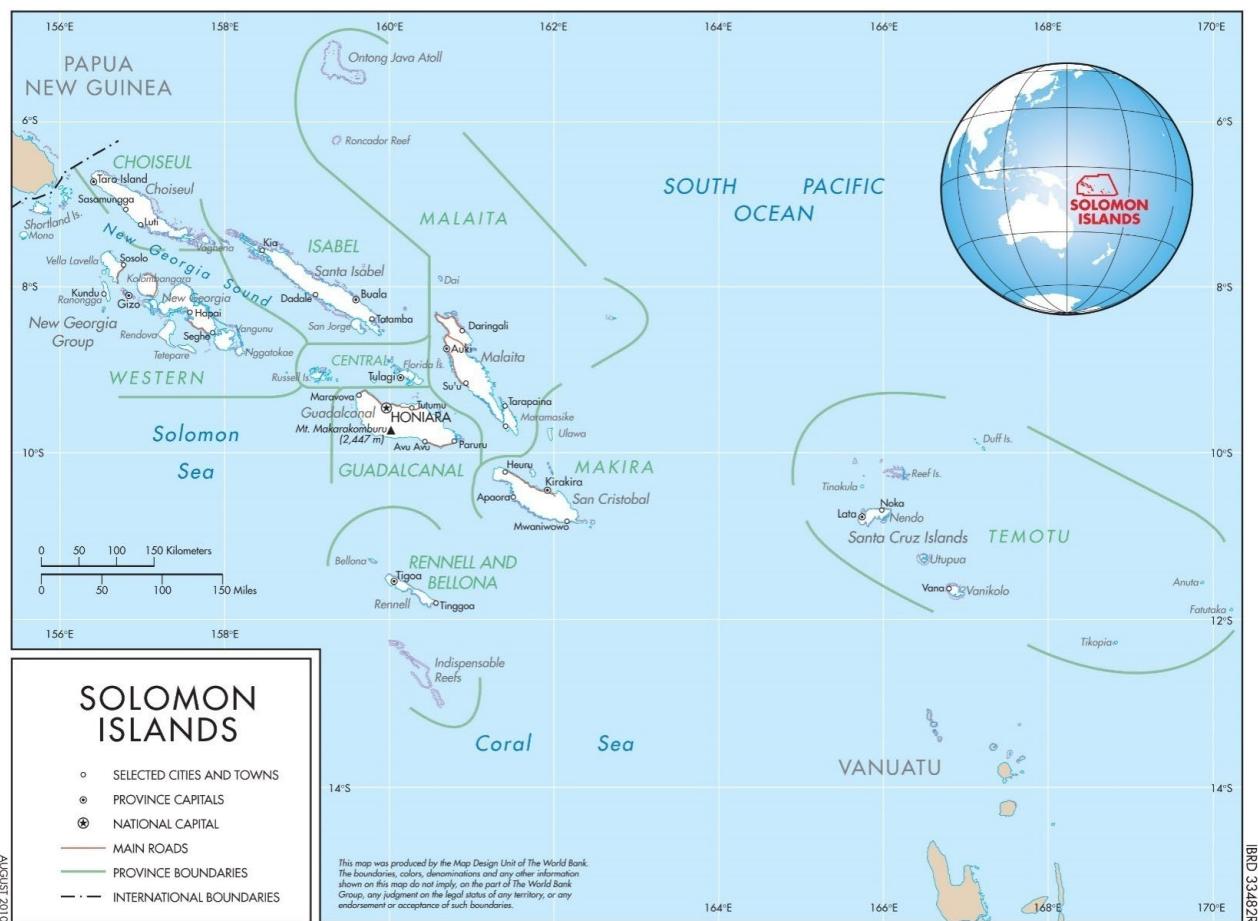


Component	Subcomponent	Adaptation	Mitigation
		<ul style="list-style-type: none">• Financing of adaptive research on new high-protein climate-resilient feed crops such as pulses, beans, winged bean, cassava, and cowpea as well as insect protein feed production for households producing poultry• Adaptive research on food crops and feed crops such as legumes and its scaling up will improve soil health through nitrogen fixation	feedstocks, emerging from climate-resilient and low-emission feed crop farming such as pulses and tubers (cassava), generally lowers the carbon intensity in livestock production <ul style="list-style-type: none">• Improved animal health services and breed improvement through pig multiplier system will result in healthier animals, which are more productive and generate lower emissions per weight of product
	2.3. Innovations and Development Market Place	<ul style="list-style-type: none">• Identify, select, and adopt best practices or innovations on the adaptation opportunities as promoted and specified under all project subcomponents above. Innovations with climate relevance will be given priority.	<ul style="list-style-type: none">• Identify, select, and adopt best practices or innovations on the mitigation opportunities as promoted and specified under all project subcomponents above.• Investments that promote climate smartness and resource and energy efficiency will be prioritized.



ANNEX 6: Project Map

COUNTRY: Solomon Islands
Solomon Islands Agriculture and Rural Transformation Project



Note: World Bank Cartography Unit, clearance date January 13, 2022.