

AFRICAN DEVELOPMENT BANK



NAMIBIA

AGRICULTURAL MECHANISATION AND SEED IMPROVEMENT PROJECT (NAMSIP)

RDGS/AHFR DEPARTMENTS

November 2017

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Currency Equivalents

(July 2017)

1 ZAR	=	1.0 Namibia Dollar (NAD/N\$)
1 UA	=	18.1749 NAD
1 USD	=	13.06241 NAD
1 Euro	=	14.90687 NAD

Fiscal Year

1st April to 31st March

Weights and Measures

1 metric tonne (t)	=	2,204 pounds (lbs)
1 metre (m)	=	3.28 feet (ft)
1 millimetre (mm)	=	0.03937 inch
1 kilometre (km)	=	0.62 mile
1 hectare (ha)	=	2.471 acres
1 square kilometre (km ²)	=	100 hectares (ha)

Acronyms and Abbreviations

AfDB	....	African Development Bank	MTR	....	Mid-Term Review
ANA	....	Annual National Accounts	M&E	....	Monitoring and Evaluation
CAADP	....	Comprehensive Africa Agriculture Development Programme	NAD/N\$	....	Namibia Dollar
CSP	....	Country Strategy Paper	NCA	....	Northern Communal Areas
DAPEES	....	Directorate of Agricultural Production, Extension and Engineering Services	NDP	....	National Development Plan
DARD	....	Directorate of Agricultural Research and Development	NHIES	....	Namibia Household Income and Expenditure Survey
DPBD	....	Directorate of Planning and Business Development	NPC	....	National Planning Commission
DVS	....	Directorate of Veterinary Services	NSA	....	Namibia Statistical Agency
DP	....	Development Partners	OAG	....	Office of the Auditor General
EA	....	Executing Agency	O&M	....	Operation and Maintenance
EIRR	....	Economic Internal Rate of Return	PAR	....	Project Appraisal Report
ESMP	....	Environmental and Social Management Plan	PIU	....	Project Implementation Unit
FAO	....	Food and Agriculture Organisation	PS	....	Permanent Secretary
FIRR	....	Financial Internal Rate of Return	PSC	....	Project Steering Committee
GDP	....	Gross Domestic Product	PY	....	Project Year
GRN	....	Government of Namibia	SDG	....	Sustainable Development Goals
HACCIADep	....	Harambee Comprehensively Coordinated and Integrated Agricultural Development Programme	SME	....	Small and Medium Enterprise
HPP	....	Harambee Prosperity Plan	SOE	....	State-Owned-Enterprise
HH	....	Household	TA	....	Technical Assistance
MAWF	....	Ministry of Agriculture, Water and Forestry	USD	....	United States Dollars
MIC	....	Middle Income Country	ZAR	....	South African Rand

Loan Information

Client's information

BORROWER:	Republic of Namibia
EXECUTING AGENCY:	Ministry of Agriculture, Water and Forestry (MAWF)
IMPLEMENTING AGENCY:	Ministry of Agriculture, Water and Forestry

Financing plan

Source	Amount (ZAR)	%age	Instrument
AfDB Group	1.00 billion	70.5%	ADB Loan
Government	0.36 billion	25.5%	N/A
Beneficiaries	0.06 billion	4.0%	N/A
Total Cost	1.42 billion	100.0%	

Important Financial Information

Loan Currency	South African Rands (ZAR).
Loan Type	Fully Flexible Loan.
Tenor	13 years (inclusive of Grace Period).
Grace period	3 years.
Average Loan Maturity*	8.13 (function of the amortization profile).
Repayments	28 consecutive quarterly payments after grace period
Interest Rate	Base Rate +Funding Cost Margin+ Lending Margin + Maturity Premium. This Interest Rate will be floored to zero.
Base Rate	Floating Base Rate (3-month JIBAR reset each 1 st February, 1 st May, 1 st August and 1 st November). A free option to fix the Base Rate is available.
Funding Cost Margin	The Bank funding cost margin as determined each 1 st January and 1 st July and applied to the Base Rate each 1 st February, 1 st May, 1 st August and 1 st November.
Lending Margin	80 basis points (0.8%).
Maturity Premium	Zero (0) % if Average Loan Maturity <= 12.75 years
Front-end fees	0.25% of the loan amount payable at signature of the loan agreement or latest 30 days from signature.
Commitment fees	0.25% of the undisbursed amount. Commitment fees start accruing 60 days after signature of the loan agreement and are payable on Payment dates.
Option to convert the Base Rate**	In addition to the free option to fix the floating Base Rate, the Borrower may reconvert the fix rate to floating or refix it on part or full disbursed amount. Transaction fees are payable.
Option to cap or collar the Base Rate**	The Borrower may cap or set both cap and floor on the Base Rate to be applied on part or full disbursed amount Transaction fees are payable.

Option to convert loan currency**	The Borrower may convert the loan currency for both undisbursed or disbursed amounts in full or part to another approved lending currency of the Bank Transaction fees are payable.
FIRR, NPV (base case)	26.00%, NPV value at 12% is ZAR 1.13 billion
EIRR, NPV (base case)	23.74%, NPV value at 12% is ZAR 1.03 billion

Timeframe - Main Milestones (expected)

Concept Note Approval (OpsCom)	23 rd March, 2017
Board Approval	4 th December, 2017
Effectiveness	February 2018
Completion	31 st December 2022
Last Disbursement	30 th June 2023
Last Repayment	December 2030

PROJECT SUMMARY

1.1 **Project Overview:** The Namibia Agricultural Mechanisation and Seed Improvement Project's (NAMSIP) development goal is to improve household food security and reduce poverty. The Project's objectives are to (i) enhance agricultural productivity in order to reduce annual importation of staple cereal crops/grains, (ii) facilitate job creation, and (iii) enhance household incomes, which will improve the lives of the rural people. The Project will be implemented nationwide by the Ministry of Agriculture, Water and Forestry (MAWF) over a period of 5 years. NAMSIP has 2 components, namely: (a) Component 1 - Value Chain Improvement, with 2 sub-components, (i) Agricultural Mechanisation and (ii) Certified Seed Systems Improvement; and (b) Component 2 - Institutional Support, with 2 sub-components, (i) Capacity Building, and (ii) Project Management. Gender, environmental and social issues have been considered in Project activities. The total Project cost is ZAR 1.42 billion which will be financed by (i) ADB Loan of ZAR 1.00 billion (70.5%), (ii) Government contribution of ZAR 0.36 billion (25.5%), and (iii) beneficiaries contribution of ZAR 0.06 billion (4.0%).

1.2 The Project will directly benefit 294,500 crop producers/farmers (157,558 female and 136,942 male), and also 10,000 livestock farmers (including 2,500 women livestock farmers). In addition, 33 extension and veterinary staff will be trained in agricultural mechanisation in order to ably transfer knowledge and skills to the beneficiaries. The Project will fully support 111 farmer cooperatives. The Project will generate 111,240 jobs for men, women and youth in agricultural production and processing. The Project will also indirectly benefit about 800,000 people along the cereal and livestock value chains. The FIRR is estimated at 26.00% and NPV of ZAR 1.13 billion, at 12% opportunity cost of capital. The EIRR is 23.74% and NPV of ZAR 1.03 billion, at 12 % opportunity cost of capital. To promote inclusive growth, NAMSIP will facilitate equitable allocation of resources to participating rural men, women and youths, and also implement its activities in a sustainable manner.

1.3 **Needs Assessment:** Agriculture is the biggest employer in Namibia but contributed 3.4% share to GDP (2016) and has low wage rates. Consequently, transforming agriculture constitutes the biggest pathway for creating quality jobs and reducing inequality in Namibia. The Fifth National Development Plan (NDP5: 2017/2018-2021/2022), Harambee Prosperity Plan (HPP: 2016/2017-2019/2020) and Growth at Home Strategy for Industrialization identify agriculture as a priority area which has the potential to contribute to economic progression, social transformation and environmental sustainability. The HPP has set up an ambitious target with regard to hunger poverty under Pillar 3 (Social Progression) that *"no Namibian should die of hunger during and after Harambee period"*. The Government's policy is to increase agricultural production by expanding the development of irrigation schemes and also promoting dryland crop production through agricultural mechanisation and seed systems improvement in order to boost cereal crops and livestock production which can be used as launch pads for Small and Medium Enterprises (SMEs) driven industrialization. NAMSIP has been designed based on the Government's Harambee Comprehensively Coordinated and Integrated Agricultural Development Programme (HACCIADep: 2017). HACCIADep was developed to stimulate high quality production and market access for crops and livestock products especially from small and medium scale agricultural producers and agro-processors. NAMSIP's focus on agricultural mechanization, livestock and seed improvement directly responds to NDP5 and HPP which aim at structural transformation through increase in agricultural productivity and value addition as game changers. One of the key challenges affecting food security in Namibia is the inability of rural producers to timely access farm machinery and equipment necessary for effective land preparation, planting, weeding and harvesting which negatively affect agricultural production, post-harvest handling and marketing. Agricultural mechanisation will enable farmers to complete farming operations in a timely manner, especially in dry land farming system, and also help in increasing productivity

and reducing cost of cultivation. Introduction of farm mechanisation is being accentuated by shortage of agricultural labour in rural areas due to increased migration of youth to urban areas, since most farming activities are carried out on small land holdings which utilise manual labour and draught animal power. The modernization of agriculture, through mechanization, will contribute to overall increase in cereal crops production. This will result in 40% reduction of the country's imports of grain/cereal crops needs which is estimated at 60% per annum (MAWF/FAO 2016 data).

1.4 Bank's Added Value: The proposed NAMSIP is responding to development challenges in agriculture sector and is in line with the Government's development agenda. In view of the prevailing liquidity constraints in the domestic market, the long term tenure of the Bank's lending in South African Rand (ZAR) will have softer impact on public debt than borrowing from international capital market. Through NAMSIP, the Bank will leverage its unique position as a reliable and trusted partner of choice to sustain and help implement development projects in Namibia. The NAMSIP design has been guided by the Bank's past and on-going agriculture projects which focussed on improving crop and livestock value chains. Lessons learnt from the Bank's involvement in agriculture sector include the need to involve beneficiaries, in a participatory manner, during project design and implementation in order to enhance ownership and ensure sustainability. The Bank's Country Strategy Paper (CSP: 2014-2018) is anchored on two pillars: (i) **Infrastructure** – transport, energy and water; and (ii) **Private Sector Development** – skills development and improving the regulatory environment. NAMSIP is aligned to the second pillar of the CSP through enhancement of crop and livestock development with involvement of the private sector, especially in supply and major maintenance of agricultural machinery and equipment. The Project is aligned to the Bank's Ten Year Strategy (TYS: 2013-2022) core operational areas of infrastructure and also areas of special emphasis namely agriculture and gender in that it will improve availability and access of agricultural mechanisation and certified seeds to enhance productivity, develop irrigation and civil infrastructure, enhance household income, food security and nutrition, create jobs and promote gender mainstreaming. Gender mainstreaming is also in line with Pillar II of the Gender Strategy (2014-2018). The Project is also in line with the TYS on inclusive growth by focussing on the smallholder farmers. NAMSIP is fully aligned to the Bank's 2 priority-High-5 areas, namely, (i) Feed Africa, and (ii) Improve the quality of life for the people of Africa. Based on the Feed Africa Strategy for Agricultural Transformation in Africa (2016-2025), NAMSIP design has adopted a value chain approach to address various challenges in a manner that increases crop and livestock productivity in order to create an enabling agribusiness environment.

1.5 Knowledge Management: NAMSIP will contribute to the generation of knowledge throughout the implementation period which will be useful during design and implementation of future similar projects especially on how to (i) improve crop and livestock development, (ii) use smallholder farmers cooperatives to produce good quality certified seeds to improve productivity, (iii) raise household incomes of smallholder farmers, and (iv) broaden employment and job opportunities along cereal crops and livestock value chains. The focus on livestock disease control and management will also generate knowledge for future interventions to enhance livestock production which is in line with the development of knowledge-based economy. The generated knowledge will be documented through routine monitoring and shared with key stakeholders during Project implementation. The Project-related online information shall be available, to the public, through the existing Government/MAWF website which will be updated regularly by the Project.

RESULTS-BASED LOGICAL FRAMEWORK (PROJECT MATRIX)

Country and Project Name: Namibia – Agricultural Mechanisation and Seed Improvement Project (NAMSIP). Purpose of the Project: To contribute to food security, poverty reduction and economic growth.						
RESULTS CHAIN		PERFORMANCE INDICATORS ¹			MEANS OF VERIFICATION	RISKS/MITIGATION MEASURES
		INDICATOR (INCLUDING CSI)	BASELINE	TARGET ²		
IMPACT	1. Contribute to improved food security.	1. Percentage (%) decrease of food insecure people.	<u>2017</u> 1. (25)	<u>By 2025</u> 1. (12)	Household Income and Expenditure Survey (NHIES).	
OUTCOMES	2.1 Increased agricultural production for cereal crops. 2.2 Improved rural employment.	2.1.1 Nutrient-dense crop production ('000 tonnes) increased. 2.1.2 Annual import (%) of country's grains/cereal crops. 2.2 No of jobs created.	<u>2017</u> 2.1.1 (i) Maize (1.04); and (ii) Pearl Millet (4.23). 2.1.2 (60%) 2.2. (0)	<u>By 2023</u> 2.1.1 (i) Maize (47.0); and (ii) Pearl Millet (162.0). 2.1.2 (20%) 2.2. 111,240 (for men, women and youths)	NSA report. Market survey reports. Project reports.	<u>Assumptions:</u> • Favourable macroeconomic conditions.
OUTPUTS	3. Agricultural Mechanisation 3.1 Provide assorted farm machinery and equipment to farmer cooperatives. 3.2 Supply and install drip/sprinkler irrigation systems for crop production. 3.3 Support to animal health and traceability equipment. 4. Certified Seed Systems Improvement 4.1 Establish 3 irrigation systems (standard pre-designed drip or sprinkler), 200 ha each, for foundation seed production. 4.2 Facilitate production and distribution of certified seed.	3.1.1 Set of tractors with accessories. 3.1.2 Set of walking tractors with accessories. 3.2 Set of standard (ready for installation) 40 kW-powered drip/sprinkler irrigation systems (each covering max 10ha). 3.3.1 No. of animal health equipment. 3.3.2 No. of traceability equipment. 4.1 Total area (ha) under drip/sprinkler irrigation. 4.2.1 Quantity of certified seed produced (tonnes). 4.2.2 No. of farmers involved in seed multiplication. 4.2.3 No of farmers involved in certified seed marketing.	<u>(2017)</u> 3.1.1 (i) 80-90 KW (0); (ii) 60-70 KW (0); and (iii) 40-50 KW (0). 3.1.2 (0) 3.2 (0) 3.3.1 (i) Veterinary cold chain/drug kits (0); (ii) automatic drug injection guns (0); (iii) deworming applicators (0); and (iv) castration burdizzos (0). 3.3.2 (i) dehorning hot irons (0); (ii) hoof trimmers (0); (iii) ear tag applicator (0); and (iv) branding iron (0). 4.1 (0) 4.2.1 (i) maize (0); (ii) Sorghum (0); (iii) pearl millet (0); and (iv) cowpeas (0) 4.2.2 (i) total (0); (ii) men (0); and (iii) female (0). 4.2.3 (0)	<u>(2022)</u> 3.1.1 (i) 80-90 KW (150); (ii) 60-70 KW (100); and (iii) 40-50 KW (300). 3.1.2 (700) 3.2 (169) 3.3.1 (i) Veterinary cold chain/drug kits (3,500); (ii) automatic drug injection guns (3,500); (iii) deworming applicators (3,500); and (iv) castration burdizzos (3,500). 3.3.2 (i) dehorning hot irons (3,500); (ii) hoof trimmers (3,500); (iii) ear tag applicator (3,500); and (iv) branding iron (700). 4.1 (600) 4.2.1 (i) maize (2,100); (ii) Sorghum (900); (iii) pearl millet (600); and (iv) cowpeas (600) 4.2.2 (i) Total (294,500); (ii) male (136,942); and (iii) female (157,558). 4.2.3 (294,500)	Project Progress Reports.	<u>Risk #1:</u> Reduced sustainability of irrigation schemes and certified seeds processing plant. <u>Mitigation #1:</u> The Project, through cooperatives, will facilitate establishment of management entity. The certified seed processing plant will be managed by the cooperatives (Private Sector). <u>Risk #2:</u> Project implementation delays. <u>Mitigation #2:</u> Regular and close follow up by the PSC, HCT, and Bank supervision missions. <u>Risk #3:</u> Drastic weather variations/climatic conditions. <u>Mitigation #3:</u> Project activities will be implemented together with

¹ Refer to Appendix 3, for the output indicators' full list/description including target quantities per Region/geographical distribution.

² Unless stated, for the outcome and output indicators, the Project is targeting at least 50% of the beneficiaries to be women.

RESULTS CHAIN		PERFORMANCE INDICATORS ¹			MEANS OF VERIFICATION	RISKS/MITIGATION MEASURES	
		INDICATOR (INCLUDING CSI)	BASELINE	TARGET ²			
KEY ACTIVITIES	4.3 Facilitate procurement of seed pre-cleaning machines.	4.3 No. of seed pre-cleaning machines.	4.3 (0)	4.3 (8)		conservation agriculture based on the cropping schedule so that little amount of rainfall can fully be utilised by the crops.	
	4.4 Facilitate construction of full-house seed processing plant, with associated equipment.	4.4 No. of seed processing plants constructed.	4.4 (0)	4.4 (5)			
	4.5 Procure machinery for seed production and processing (supplied to cooperatives).	4.5.1 Sets of tractors with matching trailer, plough, planter, disc harrow, ripper, weeding cultivator, fertilizer applicator, and herbicide boom sprayer.	4.5.1 (i) 80-90 KWA (0), and (ii) 60-70 KWA (0).	4.5.1 (i) 80-90 KWA (5), and (ii) 60-70 KWA (5)			
		4.5.2 No of equipment and packaging material for seeds.	4.5.2 (0).	4.5.2 (4)			
		4.5.3 No. of pearl millet (mahangu), cowpeas and maize prototype thresher plant supplied.	4.5.3 (0).	4.5.3 (14)			
	5. Capacity Building			5.1.1 (3)			
		5.1 Support to agricultural training institutions.	5.1.1 No of MAWF agricultural training centers supported.	5.1.1 (0)			5.1.2 (i) Total (294,500); (ii) male (136,942); and (iii) female (157,558)
			5.1.2 No of farmers trained on the use of farm machinery & equipment.	5.1.2 (i) Total (0); (ii) male (0); and (iii) female (0)			5.1.3 (3,000)
			5.1.3 No of seed growers and seed inspectors trained.	5.1.3 (0)			5.1.4 (34)
			5.1.4 No of staff trained (Training of Trainers)	5.1.4 (0)			
	5.2 Support to farmer cooperatives including community mobilisation.	5.2. No of cooperatives formed/strengthened supported.	5.2 (51)	5.2. (111 cooperatives, with total membership of 10,681, including 6,912 women)			
	5.3 Support Gender mainstreaming activities.	5.3. Percentage of various Gender-related activities supported.	5.3 (0)	5.3 (100%)			
	5.4 Improve food security and nutrition.	5.4.1 No of households trained in food security and nutrition.	5.4.1 (0)	5.4.1 (i) 100 FHH and (ii) 2,000 (MHH).			
		5.4.2 No of infants (6-24 months) undergoing feeding programme (Government support).	5.4.2 (0)	5.4.2 (2,600)			
	6. Project Management						
	6.1 Project management improved.	6.1 No of key (i) PIU and (ii) PSC staff appointed.	6.1. (i) 0; and (ii) 0	6.1. (i) 4; and (ii) 5			
	6.2 M&E system established.	6.2.1 No of M&E system established (No).	6.2.1 (0)	6.2.1 (1)			
		6.2.2 No of reports (i) baseline survey; (ii) QPR; (iii) MTR; and (iv) PCR.	6.2.2 (i) 0; (ii) 0; (iii) 0; and (iv) 0	6.2.2 (i) 1; (ii) 20; (iii) 1; and (iv) 1			
KEY ACTIVITIES	Components				Inputs		
	Component 1 - Value Chain Improvement: Sub-component 1.1 Agricultural Mechanisation (ZAR 0.78 billion); and Sub-component 1.2 Certified Seed Systems Improvement (0.21 billion). Component 1 cost: ZAR 0.99 billion (69.8%).				Project Cost: ZAR 1.42 billion.		
	Component 2 - Institutional Support: Sub-component 2.1 Capacity Building (ZAR 0.07 billion); and Sub-component 2.2 Project Management (ZAR 0.36 billion). Component 2 cost: ZAR 0.43 billion (30.2%).				ADB Loan: ZAR 1.00 billion (70.5%). Government: ZAR 0.36 billion (25.5%). Beneficiaries: ZAR 0.06 billion (4.0%).		

PROJECT TIME FRAME/GENERAL IMPLEMENTATION SCHEDULE³

No	Description of Activities	2017				PY1 (2018)				PY2 (2019)				PY3 (2020)				PY4 (2021)				PY5 (2022)				2023			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
0.0	Loan Signature and Effectiveness			Govt																									
1.0	Component 1: Value Chain Improvement																												
1.1	Agricultural Mechanisation																												
	Support Farmer-Cooperatives																												
	Procurement of Crop Production Machinery and Equipment																												
	Procurement of Livestock Production Equipment																												
	Installation of Drip/Sprinkler Irrigation Systems (Crops)																												
1.2	Certified Seed Systems Improvement																												
	Installation of Drip/Sprinkler Irrigation Systems (seed)																												
	Procurement of Assorted Machinery and Equipment (seed)																												
	Construction of Full-House Certified Seed Processing Plant																												
	Certified Seeds Production and Distribution																												
2.0	Component 2: Institutional Support																												
2.1	Capacity Building																												
	Support Agricultural Institutions																												
	Staff Training																												
	Smallholder Farmer Training																												
	Implementation of ESMP Activities																												
	Gender Mainstreaming Activities																												
2.2	Project Management																												
	Project Implementation																												
	Annual Financial Audit																												
	Annual Procurement Audit																												
	Bank Supervision Missions																												
	Development and Operation of M&E system																												
	Annual Work Plans and Budgets																												
	Mid-Term Review (MTR)																												
	Beneficiary Impact Assessment (BIA)																												
	Project Completion Report (PCR)																												
	Programme Steering Committee Meetings																												
	Progress Review Meetings (Regional)																												

Note: Q4 = Fourth Quarter (January, February, March); Q1 = First Quarter (April, May, June); Q2 = Second Quarter (July, August, September) and Q3 = Third Quarter (October, November, December)

³ This is a general Project implementation schedule. Consequently, the detailed annual work schedule will be developed before the beginning of each Project Year (PY).

REPORT AND RECOMMENDATION OF THE MANAGEMENT TO THE BOARD OF DIRECTORS ON PROPOSED LOAN FOR THE NAMIBIA AGRICULTURAL MECHANISATION AND SEED IMPROVEMENT PROJECT

Management submits the following Report and Recommendation of an ADB Loan proposal of **ZAR 1.00 billion** from the Bank resources to finance the Namibia Agricultural Mechanisation and Seed Improvement Project (NAMSIP).

I. STRATEGIC THRUST AND RATIONALE

1.1. Project Linkages with Country Strategy and Objectives

1.1.1. Namibia is a semi-arid country in south-western Africa with a total land area of 824,268 km² consisting of poorly vegetated semi desert-like areas, Namib Desert, Kalahari Desert, extensive savannah and woodlands, and subtropical forests. Namibia is one of the sunniest (300 days per year) and driest countries in the world. The climate is characterized by hot and dry conditions with mean temperature of 24°C in summer and 14°C in winter. About 92% of the land area is defined as hyper-arid, arid or semi-arid. Rainfall patterns are characterized by their high temporal and spatial variability. Mean annual rainfall is about 285 mm, out of which 83% evaporates, 14% is used up by vegetation, 1% recharges groundwater and 2% becomes runoff. Low and variable rainfall and inherently poor soils are major obstacles to agriculture production. Five perennial rivers are found along the borders with neighbouring countries whilst other inland rivers are ephemeral. Despite this, Namibia is blessed with rich natural resources and also well-developed physical infrastructure. Namibia has enjoyed relative peace and political stability since independence in 1990 and has good track record of economic performance due to a stable political environment and prudent macroeconomic policies. With a median growth rate of 4.5% since independence, real gross domestic product (GDP) per capita was USD 11,408.10 in 2015⁴. However, Namibia has one of the most unequal income distributions in Africa, with a 2016 Gini coefficient of 0.57. According to Namibia Statistics Agency's (NSA) Labour Force Survey (2016), the overall unemployment rate is 34% due to prolonged drought that has affected the agricultural sector. The Labour Force Survey (2016) results demonstrate the importance of the agricultural sector in Namibia economy and in the livelihoods of people. Unemployment (34%), poverty (18% of the population is below poverty line, that is, less than USD 39 per month) and household food insecurity are major challenges. According to the Fifth National Development Plan (NDP5: 2017/2018-2021/2022), poverty is a major factor limiting access to food due to reliance on market purchases for food.

1.1.2. In 2016, mining accounted for about 11.3% of GDP (Annual National Accounts/ANA 2016), but employed only 2% of the labour force. On the other hand, agriculture which is the biggest employer, contributed only 3.4% share to GDP (ANA 2016). Although adverse weather is partly responsible for agriculture's relatively small contribution to Namibia's GDP, lack of modernisation in farming techniques and lack of infrastructure in business development have made the agriculture sector less efficient and profitable than it might otherwise be. Agriculture sector remains a strategic sector for many Namibians. The low employment elasticity of key growth drivers and the low wage in the agriculture sector partly explains the failure by the economy to translate high growth rates into more jobs and greater income equality. Consequently, transforming agriculture constitutes the biggest pathway for creating jobs and reducing inequality. The Project is in line with the NDP5, Harambee Prosperity Plan (HPP: 2016/2017-2019/2020) and Growth at Home Strategy for Industrialization which identify agriculture as a priority area that has potential to contribute to economic progression, social transformation, environmental sustainability and good governance. NDP5 is an instrument for Namibia's Vision 2030 on prosperity, harmony, peace and political stability. The HPP has set up a target with regard to hunger

⁴ World Bank Country Income Classification (December, 2016) categorizes Namibia as an Upper Middle Income Country.

poverty, under Pillar 3 (Social Progression), that “*no Namibian should die of hunger during and after Harambee period*”. The Namibia’s comparative socio-economic indicators are reflected in Appendix 1.

1.1.3. The agriculture sector remains central to the lives of majority of Namibians since it, directly or indirectly, supports over 70% of the country's population. The sector can be divided into two distinct sub-sectors (i) capital intensive, relatively well developed and export oriented commercial sub-sector which covers about 44% of the total arable land, though it accommodates only 10% of the population, and (ii) subsistence-based, high-labour, low-technology communal sub-sector which covers 41% of the total arable area and accommodates about 60% of the population. Agricultural production, and subsequently household income, is low in the subsistence sector due to chronic drought/water shortages resulting in death of animals and also crop failures. Other problems include frequent occurrence of animal diseases, widespread soil erosion and land degradation, inadequate agricultural land, high cost of agricultural inputs, lack of access to finances, poor farmer organisation, low farm-labour force, inability of rural farmers to timely access quality certified seeds, and also farm machinery/equipment. In Namibia, the major food crops are pearl millet (*mahangu*), maize, sorghum, and wheat. According to MAWF, in 2016, the Government imported about 60% of Namibia’s cereal needs.

1.1.4. The Namibia Agricultural Mechanisation and Seed Improvement Project (NAMSIP) has been designed in line with MAWF’s Harambee Comprehensively Coordinated and Integrated Agricultural Development Programme (HACCIADEP: 2017). The HACCIADEP aims at stimulating high quality production and market access for crops and livestock products especially from small and medium scale farmers and agro-processors. The HACCIADEP has 10 schemes (total estimated cost of ZAR 13 billion) namely: (i) Flood water irrigation and infrastructure development scheme, (ii) Northern Communal Areas (NCA) Beef value chain development scheme, (iii) Small stock value chain development scheme for small and medium scale agricultural producers and agro-processors in the Southern Region of Namibia, (iv) Agricultural mechanization scheme, (v) Cereal value chain development scheme, (vi) Horticulture value chain development scheme, (vii) Poultry value chain development scheme, (viii) Milk value chain development, (ix) Seed System development, and (x) Debushing and bush value chain development scheme. At the request of the Government, NAMSIP will contribute to the attainment of HACCIADEP’s 2 schemes, namely (i) agricultural mechanization scheme, and (ii) seed systems development scheme, which are key for sustainable crop and livestock value chain improvement. One of the key challenges affecting food security in Namibia is the inability of rural producers to timely access farm machinery and equipment necessary for effective land preparation, planting, weeding and harvesting which negatively affect agricultural production, post-harvest preservation and marketing. Mechanisation will enable farmers to complete farming operations in a timely manner and also help in increasing productivity and reducing cost of cultivation, especially in rainfed farming systems, where the rainy season is short. Above that, introduction of farm mechanisation is being accentuated by shortage of agricultural labour in rural areas due to increased migration of youth to urban areas, since most farming activities are carried out on small land holdings which utilize mainly manual labour and draught animal power. The support to the certified seeds system development will help to address the challenges on availability of high quality seeds, especially under the dry land crop production programme, which will lead to increased nutrient dense crop productivity. Certified seed quality is the most important determinant of agricultural production potential on which the efficacy of other agricultural inputs depends. Seed of appropriate high value characteristics are required to meet the demand of diverse agro-climatic conditions and cropping system.

1.1.5. NAMSIP will enhance dryland crop production, irrigated crop production, State Owned Enterprises (SOEs), and Private Sector operations through effective utilisation of agricultural machinery and equipment for livestock production, and processing which can be used as launch pads for SME-driven industrialization. The Project will contribute to the Namibia’s Growth at Home Strategy which focuses on supporting value addition for sustainable growth and securing local and international market access. NAMSIP will significantly contribute to Government’s plans to (i) achieve “zero deaths” (HPP outcome # 7) as a result of hunger, (ii) improve food security and nutrition, and (iii) promote import

substitution of staple foods by focusing on cereal-crops and livestock value chains. NAMSIP will also contribute to the achievement of Sustainable Development Goals (SDGs) (i) SDG #1 (No Poverty) - growth in agriculture is effective at reducing poverty, (ii) SDG #2 (Zero Hunger) - efficient crop production improves food security and nutrition, and (iii) SDG #5 (Gender Equality) - provision of resources to women farmers enhance agricultural productivity.

1.2. Rationale for Bank's Involvement

1.2.1. In January/February 2017, the Government of Namibia and the Bank agreed on 2 interventions to meet both short term and long term financing needs comprising (i) a Programme Based Operation (PBO)/budget support (ZAR 6 billion, approved in May 2017) to support the Government's bold reform programme and finance the fiscal deficit, and (ii) an investment programme (ZAR 4 billion) to fill the financing gaps created by fiscal consolidation measures in 'ready to go' HPP projects. The NAMSIP (ZAR 1 billion) is part of the ZAR 4 billion investment programme and complements the approved ZAR 6 billion PBO by addressing agricultural mechanisation, certified seeds and infrastructure bottlenecks in the agriculture sector, as indicated in Appendix 2. The other 2 investment projects are under Transport Sector (ZAR 2 billion) and Education Sector (ZAR 1 billion), which are being processed concurrently.

1.2.2. NAMSIP is aligned to one of the Bank's Ten Year Strategy (TYS: 2013-2022) core operational areas of infrastructure and also areas of special emphasis namely agriculture and gender in that it will improve availability and access of agricultural mechanisation and certified seeds, enhance household income, food security and nutrition, and gender mainstreaming. Gender mainstreaming is also in line with Pillar II of the Gender Strategy (2014-2018). The Project will ensure inclusiveness of rural farmers (men, women and youths) as direct beneficiaries. NAMSIP is fully aligned to the Bank's 2 priority High-5 areas, namely, (i) Feed Africa, and (ii) Improve the quality of life for the people of Africa. Based on the Feed Africa Strategy for Agricultural Transformation in Africa (2016-2025), NAMSIP design has adopted a value chain approach to simultaneously address challenges in a manner that increases agricultural productivity and facilitates an enabling agribusiness environment. NAMSIP is aligned to Feed Africa Strategy's Enabler #1—"Increase Productivity" through provision of agricultural mechanisation and improved certified seeds (pearl millet, maize, sorghum, and cowpeas) since these are the weakest links of the cereal crops value chain. The Bank's Country Strategy Paper (CSP: 2014-2018) is anchored on two pillars: (i) **Infrastructure** – transport, energy and water; and (ii) **Private Sector Development** – skills development and improving the regulatory environment. NAMSIP is aligned to CSP's second pillar through involvement of the private sector in supply and major maintenance of agricultural machinery and equipment.

1.2.3. The Bank's active portfolio in Namibia, as at July 2017, comprised 7 on-going projects with a total commitment of UA 577.3 million. The financial sector dominates the portfolio with 43.1%, followed by transport sector with 28.3%, social sector with 0.1%, and multi-sector with 28.5%. The Projects are mainly funded through the ADB public-sector window (99.83%) and MIC TAF Grant (0.17%). Multi-sector operations include a budget support operation, and MIC Grant technical assistance projects supporting Walvis Bay Corridor Group capacity building and studies, PPP institutional strengthening, statistical capacity building, and higher education quality assurance. Appendix 3 presents the Bank's on-going portfolio in Namibia. According to the Bank's July 2017 Portfolio Flashlight, 71.4% of Namibia's active projects performed satisfactorily. There is no problematic or ageing operation. There is no agriculture sector project in Namibia. There is no PCR backlog of completed agriculture operations.

1.3. Donor Coordination

1.3.1. Development Partners' (DPs) coordination in Namibia is not very strong. Efforts to improve coordination have just started under the leadership of the United Nations Resident Coordinator's office in collaboration with the National Planning Commission (NPC) to enhance cooperation, coordination

of policies, strategies and approaches which support development and effective communication with the Government. The dialogue platform under NPC is for all the sectors and thus there is no platform specific to agriculture sector. Through the dialogue platform coordinated by NPC, DPs carry out activities and finance projects whose outcomes are usually considered during policy formulation. The DPs contribution to the agriculture budget is about 4.2% (2016/2017 financial year), as summarised in Table 1.1. Although the Bank (AfDB) has been active in other Sectors (Finance, Transport and Social), it is one of the donors, coming on board, to support a major project in the agriculture sector. The Bank partnerships will be harnessed with all DPs particularly those operating within the CSP (2014-2018) focus areas.

Table: 1.1 Donor Support to Agriculture (2016/2017 Fiscal Year)

	Sector or subsector*	GDP	Exports	Size Labour Force
	Agriculture	3.4%	3.4%	70%
Players - Public Annual Expenditure (average) : 2016/17				
ZAR m (%)	Government	Donors	Japan, EU	
	ZAR 1,068.50 m (95.8%)	ZAR 44.64 m (4.2%)	China, FAO	USAID
Level of Donor Coordination				
	Existence of Thematic Working Groups (this sector)			[Y]
	Existence of SWAs or Integrated Sector Approaches			[Y]
	ADB's Involvement in Donors Coordination			[M]

Key: L: Leader. M: member but not leader. None: no involvement. Y: Yes. N: No

II. PROJECT DESCRIPTION

2.1. Project Objectives and Components

2.1.1 Project Objectives: The Project's goal is to improve household food security and reduce poverty. The Project's objectives are to (i) enhance agricultural productivity in order to reduce annual importation of staple cereal crops/grains, (ii) facilitate job creation, and (iii) enhance household incomes, which will improve the lives of the rural people.

2.1.2 Project Components: NAMSIP has 2 components, namely: (a) Component 1 - Value Chain Improvement, with 2 sub-components, (i) Agricultural Mechanisation and (ii) Certified Seed Systems Improvement; and (b) Component 2 - Institutional Support, with 2 sub-components, (i) Capacity Building, and (ii) Project Management. The NAMSIP components and major activities are summarised in Table 2.1.

Table 2.1: Description of Project Components and Sub-components

No	Component Name	Cost (ZAR billion) and % allocation	Sub-Component Description, Costs (ZAR billion) and % allocation
1	Value Chain Improvement	0.99 (69.8%)	<p><u>Sub-component 1.1: Agricultural Mechanisation (ZAR 0.78 billion, 55.3%)</u></p> <ul style="list-style-type: none"> Procure assorted crop production, harvesting, processing and storage machinery and equipment (<i>as indicated in Appendix 4</i>), for farmer cooperatives or individuals. Procure assorted livestock production (animal health, livestock feed and traceability) equipment (<i>as indicated in Appendix 4</i>), for farmers cooperatives or individuals. Supply and install 3 drip/sprinkler irrigation systems (each covering 200ha) for crop production. <p><u>Sub-component 1.2: Certified Seed Systems Improvement (ZAR 0.21 billion, 14.5%)</u></p> <ul style="list-style-type: none"> Supply and install 169 standard drip/sprinkler irrigation systems (each covering 10ha, total 845ha) for production of certified seeds (<i>maize, pearl millet, sorghum and cowpeas</i>).

No	Component Name	Cost (ZAR billion) and % allocation	Sub-Component Description, Costs (ZAR billion) and % allocation
			<ul style="list-style-type: none"> Procure assorted machinery and equipment for production and processing of certified seed (<i>as indicated in Appendix 4</i>). Facilitate production of certified seeds under dryland and irrigation. Support 200 certified seed inspection activities (seed production under dryland/rainfed and irrigation). Facilitate distribution of certified seeds to silos. Construct 5 full-house-certified seed processing plant (buildings including installation of appropriate equipment).
2	Institutional Support	0.43 (30.2%)	<p><u>Sub-component 2.1: Capacity Building (ZAR 0.07 billion, 4.8%)</u></p> <ul style="list-style-type: none"> Support 3 agricultural institutions, under MAWF. Sensitise/mobilise communities/beneficiaries to participate in NAMSIP activities. Form/strengthen 111 farmer cooperatives (total membership 10,681, including 6,912 women). Train 2,100 households in food security and nutrition activities. <i>Support infants feeding programme (Government support).</i> <i>Support behaviour communication change at household on Infant and Young Child Feeding Practices (IYCFP), food diversification and water born related diseases (Government support)</i> <i>Intensify campaign on Conservation Farming, agricultural mechanisation and improved seeds (Government support).</i> Support livestock (small stock) pass-on scheme for women groups (at least 80% women) Train 4,000 farmers in various agriculture-related practices. Facilitate international training for 5 MAWF staff (Training of Trainers/ToT, covering operation and maintenance of agricultural machinery and equipment). Conduct national training (ToT) for 28 MAWF staff from the participating Regions (Training of Trainers/ToT, covering operation and maintenance of agricultural machinery and equipment). Facilitate implementation of ESMP activities. Support the existing MAWF-ESMP Task Force. Recruit 3 TAs for MAWF. Support gender mainstreaming activities. <p><u>Sub-component 2.2: Project Management (ZAR 0.36 billion, 25.4%)</u></p> <ul style="list-style-type: none"> Support the Project Implementation Unit (PIU). <i>Provide PIU and Focal Point with Government offices including utilities and vehicles (on-going/existing arrangement-Government).</i> Facilitate 5 financial audits and procure 1 accounting package. Facilitate 5 procurement audits. Support activities of Project Steering Committee (PSC). Carry out Project coordination activities. Establish and operationalize gender sensitive participatory Monitoring and Evaluation (M&E) system. Prepare 5 Project annual work plans and budgets. Conduct 1 baseline survey, 1 beneficiary impact assessment (BIA), 1 MTR and 1 PCR.
Total		1.42	

Notes:

- Unless stated otherwise, for each activity, the Project is targeting at least 50% of the beneficiaries to be women.
- Under Component 1 (Value Chain Improvement), the type, quantities, and distribution of Project interventions are indicated in Appendix 4 of this Project Appraisal Report (PAR) - Volume I.
- Details of the activities are provided in PAR Volume II Technical Annexes B.2 and C.2.

2.2. Technical Solutions Retained and Other Alternatives Explored

The technical solution which was retained comprises use of modern farming machinery, equipment and vehicles in order to reduce the time required for land preparation. The drip and sprinkler irrigation systems have been chosen, due to their high irrigation efficiency, taking into account the

scarcity of surface and groundwater resources in Namibia. NAMSIP has included the equipment to address the problem of livestock diseases in order to enhance the marketing of livestock and livestock products. Table 2.2 indicates other alternatives which were explored.

Table 2.2: Alternatives Considered and Reasons for Rejection

Alternative Name	Brief Description	Reasons for Rejection
Animal draught power and manual system.	Use of work oxen for garden preparation.	Use of animal draught power is relatively less efficient. Livestock diseases may affect farming activities if not timely controlled
	Use of traditional hand hoe.	Use of hand hoe is less efficient in terms of timeliness and increases drudgery on farmers (low factor productivity – land and labour).
Surface irrigation system	Irrigating crops from open canals using furrow or beds.	This technology is not suitable since water is very scarce resource and there is very high evaporation. Surface network attracts high maintenance costs and may accelerate soil erosion.

2.3. Project Type

The NAMSIP is a stand-alone investment Project aimed at improving cereal-crops/grains and livestock value chains.

2.4. Project Cost and Financing Arrangements

2.4.1 The proposed ADB loan is denominated in South African Rand (ZAR) since Namibia Dollar (NAD/N\$) is pegged to ZAR (1:1) thus (i) avoiding further exchange rate risk exposure, and (ii) increasing foreign exchange reserves. The Project cost, including physical and price contingencies, is ZAR 1.42 billion (net of taxes and duties) which will be financed by (i) ADB Loan of ZAR 1.00 billion (70.5%) covering all major Project activities, (ii) the Government contribution of ZAR 0.36 billion (25.5%) through in-kind (monetary value) for existing Government staff salaries linked to Project activities, office space including utilities, and vehicles, and (iii) beneficiaries in-kind contribution of ZAR 0.06 billion (4.0%) through specific labour during agricultural production activities and also valuable time for attending training sessions. The price contingencies were based on projected local and foreign inflation rates of 5% and 2% per annum, respectively. The physical contingencies ranged from 0% (Government staff salaries) to 8% (works) based on (i) common technical practices, and (ii) available Engineer's cost estimates. Summary of the Project costs by components, sources of financing, expenditure categories and schedule by component are presented in Tables 2.3 to 2.6 and the details are in Project Appraisal Report (PAR) Volume II Technical Annex B.2.

2.4.2 Justification for Government Level of Contribution: The Government/beneficiary's total contribution of ZAR 0.42 billion represents about 29.5% of the total NAMSIP cost which is less than the recommended 50% minimum counterpart contribution as per the Bank's 2008 "*Policy on Expenditure Eligible for Bank Group Financing*". The policy further stipulates that the ADB may finance more than 50% of the total project costs on a case-by-case basis and up to a limit that does not exceed 100%. The justifications for the reduced Government contribution is based on (i) Government's budget situation and debt level, (ii) country's Financing Allocation to the Agriculture Sector, and (iii) Government's commitment to implement other development programmes including proposed Transport Sector project (ZAR 5.52 billion) in which the Government has contributed over 64%. Details are in Appendix 5. In view this, there is a case for the Bank to reduce the Government's counterpart funding of NAMSIP to 25.5%.

Table 2.3: Project Cost Estimates by Components (NAD and ZAR ‘000)

Component Name	NAD ‘000			ZAR ‘000			% Foreign Cost
	Local	Foreign	Total	Local	Foreign	Total	
1. Value Chain Improvement	479,909.91	411,779.00	891,688.91	479,909.91	411,779.00	891,688.91	46
2. Institutional Support	332,965.00	50,938.00	383,903.00	332,965.00	50,938.00	383,903.00	13
Total Base Costs	812,874.91	462,717.00	1,275,591.91	812,874.91	462,717.00	1,275,591.91	36
Physical Contingencies	21,346.82	18,474.82	39,821.64	21,346.82	18,474.82	39,821.64	46
Price Contingencies	82,642.99	20,745.81	103,388.80	82,642.99	20,745.81	103,388.80	20
Total Project Cost	916,864.72	501,937.63	1,418,802.35	916,864.72	501,937.63	1,418,802.35	35

Table 2.4: Sources of Financing (Amount in ZAR ‘000)

Source of Financing	Total Amount (ZAR ‘000) and Percentage Contribution (%)					
	Foreign		Local		Total	
	ZAR	%	ZAR	%	ZAR	%
ADB Loan	501,937.63	100.0	498,062.37	54.3	1,000,000.00	70.5
Government	-	-	362,174.70	39.5	362,174.70	25.5
Beneficiaries	-	-	56,627.65	6.2	56,627.65	4.0
Total	501,937.63	35.4	916,864.72	64.6	1,418,802.35	100.0

Table 2.5: Project Cost by Categories of Expenditure (Amount in ZAR ‘000)

Category of Expenditure	Total Amount (ZAR ‘000)			% Foreign Cost
	Foreign	Local	Total	
A. Investment Costs				
1. GOODS				
Vehicle	67,352.00	-	67,352.00	100
Equipment	126,519.00	-	126,519.00	100
Plant and Machinery	100,368.00	333,940.00	434,308.00	23
Sub-total	294,239.00	333,940.00	628,179.00	47
2. WORKS				
Irrigation Works	84,500.00	80.00	84,580.00	100
Seed Processing Plant	1,080.00	42,414.91	43,494.91	2
Sub-total	85,580.00	42,494.91	128,074.91	67
3. SERVICES				
Training	31,138.00	52,150.00	83,288.00	37
Technical Support (MAWF)	30,760.00	-	30,760.00	100
Financial Audit	1,500.00	-	1,500.00	100
Procurement Audit	2,000.00	-	2,000.00	100
Consultancy – Other (Individual)	17,500.00	-	17,500.00	100
Sub-total	82,898.00	52,150.00	135,048.00	61
Total Investment Costs	462,717.00	428,584.91	891,301.91	52
B. Recurrent Costs				
1. OPERATING COST				
Personnel-Govt Staff/NBF	-	274,400.00	274,400.00	-
Daily Subsistence Allowance	-	4,590.00	4,590.00	-
Operation and Maintenance	-	105,300.00	105,300.00	-
Sub-total	-	384,290.00	384,290.00	-
Total Recurrent Costs	-	384,290.00	384,290.00	-
Total Base Costs	462,717.00	812,874.91	1,275,591.91	36
Physical Contingencies	18,474.82	21,346.82	39,821.64	46
Price Contingencies	20,745.81	82,642.99	103,388.80	20
Total Project Cost	501,937.63	916,864.72	1,418,802.35	35

Table 2.6: Expenditure Schedule by Components (Amount in ZAR ‘000)

Item Description	Amount (ZAR ‘000)					
	PY1	PY2	PY3	PY4	PY5	Total
1. Value Chain Improvement	225,436.51	212,053.60	152,053.60	151,628.60	150,516.60	891,688.91
2. Institutional Support	101,492.00	74,273.00	76,673.00	65,792.00	65,673.00	383,903.00
Total Base Costs	326,928.51	286,326.60	228,726.60	217,420.60	216,189.60	1,275,591.91
Physical Contingencies	11,678.86	8,271.59	6,831.59	6,548.94	6,490.66	39,821.64
Price Contingencies	5,467.56	13,774.15	20,323.71	27,692.29	36,131.09	103,388.80
Total Project Cost	344,074.93	308,372.34	255,881.90	251,661.83	258,811.35	1,418,802.35

2.5. Project Target Area, Population and Beneficiaries

The Project will be implemented nationwide (14 Regions of Namibia) as indicated in Appendices 4 and 6. Appendix 4 has also included population data for each Region. Namibia has 517,649 households with estimated population of 2.28 million (2016/2017 NHIES). The agriculture mechanization scheme, if fully implemented, will target 58,900 crop producers (including 50% female) with about 117,857 ha of land to be serviced per annum and thus within a period of 5 years the scheme will benefit approximately 294,500 producers (including 50%) on 589,285 ha under production. The Project will directly target and empower 10,000 livestock farmers (including 2,500 women livestock farmers). In addition, 33 agricultural extension staff will be capacitated on agriculture mechanization for transfer of skills to the beneficiaries. The Project will fully support 111 farmer cooperatives with a total membership of 10,681 of whom 6,912 will be women. The Project will generate 111,240 jobs for men, women and youth in agricultural production and processing, as indicated in Appendix 7. The Project will also indirectly benefit from 300,000 people under dryland/rainfed agriculture and irrigation through generation of employment along cereal crops and livestock value chains, including suppliers, local traders, casual labourers, agro-processors, millers, transporters, rural youth, men and women. About 500,000 people will indirectly benefit and be food secure due to improved cereal crop production.

2.6. Participatory Process for Project Identification, Design and Implementation

The proposed Project intervention areas have been extracted from the HACCIADep which was developed by the MAWF after countrywide consultations with key stakeholders in order to give practical, tangible and visible meaning to policy intentions of the Government, as defined in Vision 2030, HPP and NDP5. These 3 policy documents had also gone through intensive countrywide consultations with key stakeholders during their formulation. The Bank, during NAMSIP preparation in January/February 2017, held consultations with senior Government staff in the Ministry of Finance, NPC, MAWF, Ministry of Gender and Social Welfare, Ministry of Poverty Eradication and Social Welfare, Ministry of Industrialization, Trade and SMEs Development, Ministry of Environment and Tourism (MET), and representatives from SOEs (Namibia Agronomic Board/NAB, Agricultural Business Development Agency/AgriBusDev, Agricultural Bank of Namibia/AgriBank, Agricultural Marketing and Trading Agency/AMTA), Namibia National Farmers Union (NNFU), DPs, and Private Sector. Consultation and feedback on the interventions were undertaken which informed the NAMSIP. During the Project Appraisal Mission (July 2017) further consultations were made with the same institutions. Project implementation will be carried out through the existing Government/MAWF structures. In line with the Project's capacity building sub-component, smallholder farmers (rural men, women and youth) will be fully involved during implementation of planned activities including participatory Monitoring and Evaluation (M&E).

2.7. Bank Group Experience and Lessons Reflected in Project Design

The Bank has enormous experience in designing and implementation of agriculture projects in Africa. Some lessons learnt from implementing past projects and through experience of other donors in

Namibia have been used to inform the design and subsequent implementation of NAMSIP, as tabulated below:

No	Lessons Learnt	Actions incorporated in the Project design
1.	Lack of construction drawings at project start-up resulted in delay in implementation.	Drawings and tender documents for standard drip and sprinkler irrigation systems are available with the Government.
2.	Role played by Project Implementation Unit (PIU) in expediting project execution.	MAWF's Project implementation capacity will be enhanced through recruitment of 3 TAs who will be part of the PIU.
3.	Inadequate consultation with stakeholders results in poor management of the proposed investments	Adequate consultations with key stakeholders were undertaken during Project preparation and appraisal phases.
4.	Weak M&E system results in poor assessment of implementation progress	M&E activities with adequate financial allocation have been included in Project design.

2.8. Project Performance Indicators

The logical framework (LogFrame) has provided the impact, outcome and output indicators which will be measured during Project implementation using M&E system. The impact indicator is “percentage (%) reduction of food insecure people”. The outcome indicators are (i) nutrient dense crop production (tonnes), (ii) percentage (%) reduction of annual cereal imports, and (iii) number of jobs created. Major output indicators are reflected in the LogFrame.

III. PROJECT FEASIBILITY

3.1. Economic and Financial Performance

3.1.1. Financial Analysis: The financial analysis has been carried out at the farm household level as well as the entire Project level. This has been done by comparing the benefits accruing to the individual beneficiaries, and aggregated for the Project as a whole on “with Project” and “without Project” basis. Gross margin analyses have been carried out for the major crops to be grown under the Project, namely maize, pearl millet (*mahangu*), sorghum and wheat with first 3 crops to be grown under dryland/rainfed while wheat will be grown under irrigation. Pearl millet will take up the largest share of land which constitutes about 57% of the total land under cultivation. These analyses assumed full utilization of the area targeted for production starting from third year of Project implementation period. The land distribution per crop per season, summary of analysis of individual crop budgets, and net income (gross margin) at household level have been presented in PAR-Volume II Technical Annex B.7. **Results:** The analysis shows that annual net income (gross margin) per farming household in the Project increased (under crop production) from ZAR 19,742 to ZAR 74,179 while income from livestock production increased from ZAR 5,221 to ZAR 16,012. The gross margin analyses took into consideration the farm gate prices of the produce and the total cost of production, including an imputed wage of ZAR 300 per hectare for family farm labour per farming season. The financial internal rate of return (FIRR) to the Project is estimated at 26.00%, and the net present value (NPV), at 12% opportunity cost of capital, is estimated at ZAR 1.13 billion.

3.1.2. Economic Analysis: The agriculture sector farm inputs market is subsidized by Government and therefore financial prices for the farm inputs have been adjusted by a standard conversion factor of 1.3 that took into account the level of subsidies for the farm inputs and taxes. The economic prices for farm produce have been derived using a standard conversion factor of 0.82 **Results:** The economic internal rate of return (EIRR) to the Project is estimated at 23.74% and the net present value (NPV), at 12 % opportunity cost of capital, is estimated at ZAR 1.03 billion.

3.1.3. Sensitivity Analysis: Sensitivity analysis shows that an increase in the cost of production by 10% reduces FIRR to 17% and NPV to ZAR 0.51 billion and a fall in the revenue by 10% reduces FIRR to 13 % and NPV to ZAR 0.065 billion. An increase in the cost of production by 5% reduced EIRR to 18.78% and NPV to ZAR 0.64 billion while a fall in revenue by 5% reduced EIRR to 16.88% and NPV to ZAR 0.45 billion.

FIRR, NPV, 12% (base case)	26.00% : ZAR 1,13 billion
EIRR, NPV, 12% (base case)	23.74% : ZAR 1.03 billion

Note: calculations are indicated in Appendix 8 of this PAR and also in PAR Volume II, Technical Annex B.7.

3.2. Environmental and Social impacts

3.2.1. Environment and Social Issues: The Project was classified as Category 2 in line with the Bank's Environmental and Social Assessment Procedures (ESAP), which requires only the Environmental and Social Management Plan (ESMP). The ESMP was prepared by the Government, cleared by the Bank and posted on Bank's website⁵ on 25th October 2017. The provision of farm machinery and equipment to smallholder farmers and agro-processors as well as the development and supply of improved seeds are slated to engender significant positive impacts on food production, climate resilience, economic development, livelihoods and quality of life of NAMSIP beneficiaries. Nevertheless, the development of crop and livestock operations can result in direct and indirect environmental and social impacts, including loss of fauna and flora, degradation of terrestrial habitats and disruption or contamination of water courses. These negative impacts are expected to be site-specific and can be minimized by applying appropriate mitigation measures. During Project implementation, the existing MAWF ESMP Task Force will be maintained in order to ensure adequate environmental and social management, compliance with national laws, and to monitor and report on ESMP implementation. NAMSIP has made financial provision to address ESMP implementation capacity gaps and environmental and social management needs. The total cost associated with ESMP implementation is about ZAR 8 million, excluding costs for mitigation measures related to civil works which will be reflected in respective contractors' bills of quantities (BoQs). Additional information on environmental issues is in Appendix 9 and also in PAR Volume II Technical Annex B.8.

3.2.2. Climate Change: The Project was classified as Category 2 and is potentially vulnerable to climate risk. Practical climate risk mitigation measures have been taken into consideration in the location and design of the proposed irrigation infrastructure. Furthermore, arid conditions and erratic rainfall threaten the viability of agricultural production. Therefore, the inclusion of the component on certified seed (cereal crops) production through irrigation qualifies as an adaptation activity. This Project will be implemented taking into consideration opportunities to enhance climate resilience of the agriculture value chains and also enhance adaptive capacity of stakeholders to manage the impacts of climate change through improved extension services. The implementation of these activities is aligned with national ambitions to "*instil resilience to impacts of climate change in the most vulnerable sectors of the economy*" articulated in Nationally Determined Contributions to the UNFCCC. Proposed activities include developing and implementing appropriate responses and adaptation strategies to reduce the impacts of floods, low rainfall and high temperatures on people, crops, livestock and infrastructure. Agricultural adaptation strategies include (i) coordinating the timing of ploughing and crop planting with rainfall events, (ii) using drought-resistant crop varieties and livestock breeds, (iii) shifting livestock to alternative grazing areas, and (iv) implementing soil and water conservation activities. Mechanisation in agriculture is usually associated with use of diesel powered equipment whose emission will be mitigated through specifications of engines which include either (i) recirculation of exhaust gas to dilute intake of air/oxide, or (ii) cooling the exhaust gases in order to inhibit formation of nitrogen. With regards to climate finance, NAMSIP's climate related activities will contribute ZAR 0.2 billion to the Bank's target. The majority of Namibian population, especially rural households, depend on climate-sensitive sub-sectors such as crop production and livestock farming. Consequently, climate change variability will only serve to compound the impacts on livelihoods, food security, and community well-being. Changes in rainfall patterns and increased temperatures affect crop yields, increases droughts and reduces feedstock resulting in livestock losses. Namibia has thus prioritized environmental protection, specifically climate change, as evidenced by the adoption of the National Policy on Climate Change

⁵Web-link: [Namibia - Namibia Agricultural Mechanisation and Seed Improvement Project \(NAMSIP\) - ESMP Summary](#)

(2011) and the National Climate Change Strategy and Action Plan (2013-2020). The latter aims, under the food security and sustainable resource use pillar, to: (i) improve climate change understanding and related policy responses in food security; (ii) develop, identify and disseminate climate resilient crop farming practices; (iii) enhance sustainable land management and suitable land use practices; and (iv) ensure maintenance of resilient ecosystems to ensure climate resilience, and environmental sustainability.

3.2.3. Land Issues: Land is fundamental to the lives of smallholder farmers especially women and youth since women account for 59% of people engaged in skilled and subsistence agriculture in Namibia. The Namibia Constitution and the National Land Policy (1998) lay the foundation for land ownership and established basic principles for the governance of all land in Namibia, with a strong emphasis on protecting the rights of the poor and women and promoting transparency and accountability in land administration. Namibia's agriculture sector consists of 2 types of land ownership, namely, freehold title deeds mainly in the central and southern commercial areas and non-title deeds mainly in the Northern Communal Areas (NCA). The Government efforts are in place to bring equity in land ownership, through land redistribution and tenure reform which have been shaped by Agricultural (Commercial) Land Reform Act 6 of 1995 and the Communal Land Reform Act 5 of 2002. These land reforms focus, amongst others, on redistribution of commercial farmland to redress past imbalances in land ownership among Namibians. Considering that land tenure is important for the Project, the MAWF emphasised the role the communal land reforms plays in strengthening the smallholder farmers' access and ownership to land and credit. The Namibia Constitution in Article 95 (a) accords women the same status as men, with regard to all forms of land rights, either as individuals or as members of family land ownership trusts. Equal rights to land have been granted to both men and women in communal areas.

3.2.4. Gender: In Namibia, 44% of rural households are headed by females. Most female landowners are widows who inherited the land from their husbands, followed by women who obtained land through divorce or inheritance from families. Since the commencement of the Communal Land Reform Act (CLRA) No. 5 of 2002, single women can register their land without the consent of family members. The CLRA protects wives and gives them the right to apply for and register land in their names. In 2016, it was estimated that more than 40% of all land use certificates in Namibia were issued to women. The land use certificates for communal land guarantee the use of the land in perpetuity. Furthermore, the CLRA mandates the inclusion of a minimum of four women in the Communal Land Board (CLB) that facilitates land registration. The main source of income for female farmers is subsistence farming. They dominate in most cropping activities except in land preparation. On the other hand, animal husbandry (cattle, sheep and goats) is almost exclusively a male domain although herding small stock is sometimes done by women whilst feeding livestock has a 50/50 gender division of labour. Women and children are responsible for fuel wood and wild fruit gathering. Women also dominate post-harvest processing of crops such as sun drying, threshing and winnowing, head-loading to markets, and storing for market or future use. The Government has embarked on new levels of improving women's lives in rural areas but according to the 2013 Gender Needs Assessment, there are challenges which include: (i) unequal access to and control over resources such as agriculture support services, appropriate technology – about 0.9% of females in rural areas own tractors in comparison with 2.6% of males; (ii) rural women's workload - family welfare and subsistence agriculture functions increase due to rural-urban migration of men; and (iii) inadequate representation in structures of decision making, at community levels - only 10% of women head traditional authorities.

3.2.5. Equitable agricultural mechanization in the agriculture value chain will therefore contribute to addressing some of the challenges faced by women farmers. Equitable distribution of equipment will contribute to higher production levels and reduce the drudgery that women face through non mechanized agriculture. Current figures indicate that women form majority of members of seed multiplication, crop production and marketing cooperatives. Women will participate as individuals or members of cooperatives. The Project will promote: (i) equitable access to farm equipment by women; (ii) training female farmers to increase the uptake of technology and mechanization, and in the maintenance of the

equipment (at least 50% for female farmers); and (iii) women's participation in leadership of cooperatives.

3.2.6. Social: NAMSIP is aimed at addressing some of the major limiting factors to increased food security and sustainable agricultural production through provision of agricultural mechanisation and improvement of seeds which will result in multiple socio-economic benefits including contributing to improved household income, enhanced food security and nutrition, and increased rural employment. The Project will also result in social risks, safety and security concerns related to the increased use of machinery and equipment which will be addressed and minimized through implementation of the ESMP's mitigation measures.

3.2.7. HIV/AIDS: According to the 2015 National HIV sentinel survey, out of the population of over 2.2 million people, about 210,000 to 230,000 people (10.5%) are living with HIV and the virus prevalence is highest among women aged 35-39 years at 32.3%, and women aged 45-49 years at 31.6%. The survey highlighted a higher prevalence in rural areas than in urban areas. The most affected Regions are Zambezi (23.7%), Omusati (17.4%), Kavango (17%), Oshana (16.1%) and Ohangwena (15.6%). Consequently, HIV/AIDS campaigns will be mainstreamed in the implementation of the Project, targeting beneficiaries including civil works contractors and consultants. The farmer cooperatives will be used to deliver HIV/AIDS awareness messages to the communities.

3.2.8. Inclusive Growth: In the context of broad-based and pro-poor growth, the Project will promote inclusive growth with equitable allocation of resources to activities which will benefit all levels of the participating communities. In particular, NAMSIP will be implemented in rural areas which (i) have very poor households, (ii) are frequently affected by drought, and (iii) have food shortages during some months of the year and are consequently nutritionally vulnerable. The Project will assist poor rural men, women and youth to participate in planned agricultural activities for increasing productivity, job creation, and income generation.

3.2.9. Food Security and Nutrition: Namibia's food security and nutrition have been weakened by severe droughts leading to a number of households depending on market and Relief Food Programmes. Namibia produces about 40% of the food it consumes and is highly dependent on imports (60%), mainly from South Africa. According to NDP5, poverty is a major factor limiting access to food. Access to food in Namibia is affected by reliance on market purchases for food. When combined with the heavy reliance on food imports, it makes Namibia vulnerable to high food prices. Overall, the production scale of smallholder farmers is lower which is attributed to limited access to inputs, poor soils, access to land and frequent occurrence of natural disasters such a drought and flood. For 2016/2017 cropping season, MAWF has estimated below average cereal crop production of 75,300 tonnes. Considering that the annual national cereal consumption is about 326,500 tonnes, this leaves a huge deficit of 251,200 tonnes. Based on the number of food insecure rural people, the Project will scale up irrigated agriculture, dry land crop production intervention and promote food security resilience measures through the provision of agricultural machinery, equipment and improved seeds at subsidized rates for drought affected farmers. Nationwide, the stunting rate for children under 5 is between 24% and 30%. Malnutrition continues to blemish the future of children, with an average of 1 out of every 4 children under the age of 5 more likely to be stunted. Stunted growth is strongly associated with poor living conditions, household food insecurity, poor breastfeeding practices and inappropriate foods for children. The Project will support the Government's efforts on (i) nutrition, especially, breastfeeding awareness campaigns, and (ii) expansion of the existing infant (6-24 months) feeding programmes within the NAMSIP communities. To that effect, the Project interventions will also lead to increase appropriate knowledge and practices regarding infant, young child and maternal nutrition with the aim of contributing to SDG #2 target. With regards to nutrition, NAMSIP will promote the Government's feeding programme (1,000 days from pregnancy to two years) in order to reduce malnutrition and child/women morbidity. Promotion of availability, accessibility, and consumption of a variety of foods will strengthen the capacity of women and households to adopt the optimal nutritional practices. Sensitization on water related diseases will help to improve the health of the population.

3.2.10. The modernization of agriculture through agricultural mechanization for cereal crops and livestock production will contribute to overall increase in food production in the country. This will result into 40% reduction of the country's imports of grains/cereal crops which is currently estimated at 60% for grain/cereals every year according to MAWF/FAO reports (2016). The use of mechanization will also enhance the value of the products and industrialization of the agriculture sector since some of the livestock and livestock products will be exported.

3.2.11. Involuntary Resettlement: There will be no involuntary resettlement or land acquisition envisioned during implementation of Project activities. The agricultural mechanization and seed system development activities will be carried out in beneficiaries' fields or public land which will benefit individual farmers and cooperative members.

IV. IMPLEMENTATION

4.1. Implementation Arrangements

4.1.1. MAWF will be the Executing Agency (EA) of the Project which will be implemented, over a period of 5 years, using the existing Government structures. At National Level, the existing Programme Steering Committee (PSC) comprises (i) Presidential Advisor - Policy Implementation and Monitoring, as the Chairperson; (ii) Presidential Advisor - Constitutional Affairs and Private Sector Interface; (iii) Presidential Advisor - Economic, and (iv) Permanent Secretary (PS)-Ministry of Finance (MoF). MoF will serve as the secretariat of the PSC. This is in line with the Government's wish to have oversight responsibility, at the highest level, for NAMSIP and also the Transport and Education Sectors' projects which have been appraised concurrently, under the Bank's current support to the country. The PS-MAWF shall be co-opted when the PSC is deliberating issues concerning agriculture sector. The PSC will meet on semi-annual basis, and as need arises, in order to (a) approve annual work plan and budget, (b) review progress reports, and (c) provide overall policy and strategic direction of NAMSIP. At Sector level, the existing HACCIADep Coordination Team (HCT) consists of MAWF's (i) PS, (ii) Deputy PS (Department of Agricultural Development), and the Directors of: (iii) Directorate of Planning and Business Development, (iv) Directorate of Agricultural Production Extensions and Engineering Services, (v) Directorate of Agricultural Research and Development, and (vi) Directorate of Veterinary Services. The HCT will (i) give the overall sectoral guidance to NAMSIP, (ii) approve Project information to be uploaded on MAWF website, and (iii) approve quarterly progress reports (QPRs). The MAWF DPBD will be the secretariat of HCT. The HCT has already appointed: (1) members of the Project Implementing Unit (PIU) comprising the (a) Project Coordinator, (b) Accountant, (c) Monitoring and Evaluation (M&E) Specialist, and (d) Procurement Specialist who will be in charge of day-to-day Project implementation; (2) focal points/desk officers (existing MAWF staff) from each Directorate; and (3) a focal point (existing senior-level MAWF staff) in each of the 14 participating Regions. The PIU staff will spend, at least, 90% of their official time on NAMSIP activities. The Project Coordinator will report to the Deputy-PS (Agriculture). The PIU will work closely with the Government appointed focal points in the (i) Directorate of Planning and Business Development (DPBD), (ii) Directorate of Agricultural Production Extensions and Engineering Services (DAPEES), (iii) Directorate of Agricultural Research and Development (DARD), (iv) Directorate of Veterinary Services (DVS), and (v) Nutrition Unit. The DAPEES and DVS will be responsible for sub-component 1.1 (Agricultural Mechanisation) and DARD will be responsible for sub-component 1.2 (Certified Seed Systems Improvement). The DAPEES and DARD will be supported by 3 Technical Advisors (Cereal Crops, Livestock and Seed Systems) who will be competitively recruited by the Project, based on Bank's Rules and Procedures. Based on the value chain approach, including construction activities, the PIU will be supported by SOEs, namely, (i) AgriBusDev Agency, (ii) AMTA, (iii) AgriBank, and (iv) Namibia Agronomic Board (NAB). The PIU will also work closely with the Namibia National Farmers Union (NNFU).

4.1.2. The NAMSIP Component 1 will mainly be implemented through farmer cooperatives or individual farmers who will be required to save part of their income in a group bank account. The cooperatives and individuals, with the assistance of MAWF, AgriBusDev and AMTA, will identify appropriate machinery/equipment for their operations based on their needs. A qualifying cooperative/farmer will be expected to directly pay about 10% of the overall cost of the associated machinery/equipment from their own resources. Procurement of standard machinery/equipment will commence in Project Year 1.

4.1.3. Procurement Arrangements: Procurement of goods, works and the acquisition of consulting services, financed by the Bank for the Project, will be carried out in accordance with the “Procurement Policy and Methodology for Bank Group Funded Operations” (BPM), dated October 2015 and following the provisions stated in the Financing Agreement. Specifically, procurement will be carried out using the following:

- **Borrower Procurement System (BPS)**: Specific Procurement Methods and Procedures (PMPs) under BPS comprising its Laws and Regulations, Procurement Act of 2015 and Public Procurement Regulation (no. 2016), using the national Standard Solicitation Documents (SSDs) or other Solicitation Documents agreed during project negotiations” for various group of transactions to be entailed under the project.
- **Bank Procurement Methods and Procedures (Bank’s PMPs)**: The Project will use Bank standard PMPs, using the relevant Bank Standard Solicitation Documents SDDs, for contracts that are either: (i) Contracts procurement under Open Competitive Bidding (OCB)—international; Limited Competitive Bidding (LIB) and Consultancy services of firms; (ii) in case BPS is not relied upon for a specific transaction or group of transactions; and (iii) in case Bank’s PMPs have been found to be the best fit for purpose for a specific transaction or group of transactions.

4.1.4. Procurement Risks and Capacity Assessment (PRCA): the assessment of procurement risks at the Country, Sector, and Project levels and of procurement capacity at the Executing Agency (EA), were undertaken for the project and the output have informed the decisions on the procurement regimes (BPS or Bank’s PMPs) being used for specific transactions or groups of similar transactions under the project. The appropriate risks mitigation measures have been included in PAR Volume II, Technical Annex B.5. Various items under different expenditure categories and related procurement arrangements have been developed for goods, works and consultancy services, as reflected in PAR Volume II, Technical Annex B.5.

4.1.5. Financial Management (FM): An assessment of the Ministry of Agriculture, Water and Forestry (MAWF) as Project Executing Agency (that included a review of the budgeting, accounting, treasury systems, internal controls, reporting, and external audit arrangements) was done to ascertain effective financial management of the project. The Department of Finance headed by a Director of Finance within the MAWF is responsible for the function of planning and budgeting at central and local levels including recording expenditures and maintaining assets through the use of the Government-wide IFMIS. The system has, however, not been configured to enable comprehensive Project reporting, therefore, a suitable system that will include the use of spreadsheets will be used for supplementing the recording and reporting of the Project transactions. The MAWF staff (Finance Department) have been involved in implementation of donor (EU, FAO, JICA and South-South Cooperation China) funded projects. Given the fiduciary requirements related to the Bank’s financing, MAWF has already appointed a well-qualified Project Accountant to handle Project financial management (FM) tasks. The Project Accountant will work together with other PIU members including Project Coordinator, M&E, and Procurement Specialist. Training in Bank requirements regarding financial management will be provided as part of project launching and during implementation.

4.1.6. Internal audit function at the Ministry will cover the project, the reports resulting from the audits will be shared with the Bank during supervisions. All deficiencies identified by internal audits will be communicated in a timely manner to the Government, for action. The PIU will also be responsible for ensuring compliance with the Bank’s reporting requirements, regarding the submission of periodic

progress reports with financial information for the Bank loan and Government contribution to the Bank not later than 45 days after the end of the respective quarter. The PIU will also be required to produce annual project financial statements. The Ministry's financial statements are audited annually by the Auditor General of Namibia. In this regard, the Project financial statements will also be subject to audit by the AG (or a private independent audit firm under the oversight of the AG) with the audit done in accordance with a Bank approved Terms of Reference. The audit reports (including management letter) will be submitted to the Bank within six months after the end of the reporting period with costs of the audit borne by the loan. These arrangements are in line with the current moderate country fiduciary risk levels after mitigation factors.

4.1.7. The overall conclusion of the assessment is that the MAWF's capacity, to handle all the FM aspects of the project, currently meets the Bank's minimum requirements as laid out in the Bank's FM guidelines. In addition, with the implementation of the proposed FM actions, there will be further improvement in the Project financial management systems to ensure funds to be made available to finance Project activities would be used economically, efficiently and for the purpose intended. The overall initial FM risk for the Project is assessed as "Moderate". This is also in line with current country fiduciary risk levels that allow the use of existing systems subject to their satisfactory assessment. The detailed analysis and financial management arrangements are contained in PAR Volume II, Technical Annex B.4.

4.1.8. Disbursement arrangements: Disbursement of funds under the project shall be primarily by the Direct Payment method for the activities under the project. The PIU will be responsible for certification of invoices submitted and preparation of disbursement application which will be reviewed and signed off by Government designated staff and submitted to the Bank for payment. The Special Account method to be managed by the PIU will be limited to financing the smaller and recurring operating expenses. The opening of the Special Account denominated in ZAR together with the associated local currency account denominated in NAD will be "*other condition*" to the Loan. In addition, the Reimbursement method will also be available. All disbursements under the Loan would be made in accordance with the Bank's rules and procedures as laid out in the Disbursement Handbook, as applicable. In addition, the Bank will issue a Disbursement Letter whose contents were discussed and agreed upon during the loan negotiations meeting between the delegations from the Government of Namibia and the Bank.

4.2. Monitoring

The Project monitoring will be at different levels with the highest level being the NPC. NPC has developed an M&E framework that guides various sectors and assists to monitor the HPP and NDP5 Results Framework. In addition, the Namibia Statistics Agency (NSA) will assist the Project to carry out regular surveys. At Sector level, the DPBD will have the overall responsibility for Project monitoring and evaluation activities. The Project activities will commence with preparation of AWP&B (based on detailed cost tables/DCTs, PAR Volume II Technical Annex B.2), which will be submitted to the PSC for approval, before transmission to the Bank. The Project M&E Specialist will establish participatory M&E system based on performance indicators. If need be, a short term individual consultant will be recruited by the Project to develop the participatory M&E system which will be linked to NPC M&E framework. The Project has allocated financial resources to facilitate training on data collection, processing and reporting. In Project Year 1, the PIU will develop the Project Implementation Manual highlighting the organisation, implementation, financial, disbursement and procurement arrangements. The Regional Project launch workshops will be organised by MAWF for key stakeholders with the purpose of (i) ensuring that all partners understand the Project components, subcomponents, activities, implementation modalities, and reporting needs, and (ii) acting as a networking event to build relationships for future knowledge sharing. All spending Regions will submit monthly reports for compilation of Quarterly Progress Report (QPRs). All QPRs will be reviewed and cleared by HCT before submission to the Bank, not more than 45 days after the end of reporting period. The key Project

M&E milestones/reports are presented in Table 4.2. The Bank will monitor NAMSIP implementation through supervision missions, at least twice per calendar year, in order to verify progress and monitor key verifiable indicators.

Table 4.2: Project Key Milestones

Timeframe	Milestone	Monitoring and Evaluation Process/Feedback Loop
Year 1	Baseline Survey Report	MAWF/NSA: Baseline data generation
Year 1 - 5	Procurement (goods, works and services) Reports	MAWF/Bank: Review and approvals
Year 1 - 5	Project Implementation (QPRs and Aide Memoires)	MAWF/Bank/Beneficiaries: Progress review meetings. Bank supervision missions.
Year 1 - 5	Audit Reports	MAWF/Auditors: Annual financial audit
Year 3	Mid-Term Review Report	MAWF/NSA/Bank Mid-Term technical review
Year 4	Beneficiary Impact Study Report	MAWF/NSA: Project beneficiary impact assessment
Year 5	Project Completion Report	MAWF/NSA/Bank: End of Project technical review

4.3. Governance

4.3.1. Namibia is one of the countries with the best governance record in Africa and has continually been ranked within the top ten performers on the Mo Ibrahim Index of African Governance (IIAG), which measures the quality of governance in every African country. Namibia has been ranking 6th since 2000 and improving to 5th in 2015 (2016 IIAG report) based on 4 categories of governance, namely, (a) Safety & Rule of Law (score 76.1/100, rank 4th/54), (b) Participation and Human Rights (score 76.1/100, rank 2nd/54), (c) Sustainable Economic Opportunity (score 62.2/100, rank 7th/54), and (d) Human Development (score 64.7/100, rank 10th/54). The 2013 Corruption Perception Index by Transparency International ranked Namibia as the 7th least corrupt country in sub-Saharan Africa. In January 2017, Namibia unconditionally acceded to the African Peer Review Mechanism (APRM), which provides for self and peer-assessment of governance policies and practices in Africa.

4.3.2. To achieve inclusive and sustainable development, Namibia has put in place strong accountability systems in line with the Constitution and the State Finance Act of 1991 (amended 1995). The Minister of Finance presents accountability report, together with other budget documents, at the National Assembly every year. The Country's efforts to reform the Public Financial Management (PFM) system are yielding results. This is testified by a transparent, consultative, and inclusive fiscal budgetary process that is succeeded by well-controlled and coordinated budget execution mechanisms, which have resulted in the decline in public sector over-expenditures. The modernization of the public procurement system is being pursued through the new Public Procurement Act 2015, which became effective on 1st April 2017, following issuance of Regulations. The Constitution clearly defines the legal and institutional framework for the fight against corruption. The Namibia Anti-Corruption Commission, established under the Anti-Corruption Act No. 8 of 2003, is mandated to combat and prevent corruption. The 2016 Corruption Perception Index ranks Namibia 53 out of 176 countries, with an overall score of 52/100. The agriculture sector will benefit from AfDB-funded PBO reforms through (i) strengthened PFM and SOE efficiency; and (ii) improved business enabling environment, which are expected to result in higher GDP growth rates, and reduction in unemployment and poverty. NAMSIP institutional arrangement has been designed to ensure good governance, and will serve as an instrument for achieving intended objectives. The Project's specific governance risk mitigation measures include (i) recruitment of external audit firm, and (ii) training of PIU in Bank's rules and procedures.

4.4. Sustainability

The Project has been designed in a participatory and consultative manner in order to enhance ownership by beneficiaries thus ensuring sustainability. The Project will be implemented using the existing Government structures and SOEs, with minimal outsourced technical assistance, which will assist to preserve the institutional memory and also build the capacity of the Government staff to ably assist the smallholder farmers during and after Project implementation (operation and maintenance) period. The Project's focus on seed system development and agriculture mechanization will enhance Private Sector involvement, with good back-up service. Major maintenance of machinery and equipment will be carried out by the suppliers and the cooperatives will be paying for the services. Through the cooperatives, the beneficiaries will be mobilised and trained to properly operate and carry out routine maintenance of the agricultural machinery and equipment. The capacity building for MAWF staff and cooperatives will guarantee sustainability of planned activities when the Project phases out. The certified seed processing plant including associated equipment will be operated and maintained by the cooperatives (Private Sector) for sustainability. Behaviour communication and awareness campaigns for food diversification and nutritional interventions have been mainstreamed to build resilience and sustainability of the investments. The Project is financially viable and the analysis indicated that beneficiaries will be able to generate adequate funds for their household needs, as well as sustain the investments made in the agriculture ventures.

4.5 Risk Management

No	Potential Risks	Rating	Mitigation Measures
1.	Poor sustainability of irrigation schemes and certified seeds processing plant.	Medium	Project, through cooperatives, will facilitate establishment of management entity. The certified seed processing plant will be managed by the Private Sector.
2.	Project implementation delays.	Low	Regular and close follow up by the NPC, HCT and Bank.
3.	Drastic weather variations/climatic conditions.	Medium	Dryland/rainfed Project activities will be implemented together with conservation agriculture based on cropping schedule so that little amount of rainfall can fully be utilised by the crops.

4.6 Knowledge Building

4.6.1. The Project's agricultural mechanization will scale-up the existing MAWF Dry Land Crop Production Programme subsidy-mechanisation programme but using a concept of ownership scheme which will generate considerable knowledge on access and sustainable use of modern farm machinery/equipment. The focus on livestock disease control will also generate lessons for future interventions to enhance livestock animal health, traceability, and productivity. The lessons and experiences from NAMSIP will be shared within the Bank and other institutions interested in implementing future similar projects. The value chain approach for both crops and livestock production will generate information on profitability and sustainability of agricultural investments. The establishment of certified seed processing plant to be managed by the Private Sector and cooperatives will also provide lessons on how the small-scale farmers' cooperatives can be integrated into the certified seed production value chain.

4.6.2. The Project will contribute to knowledge building through: (i) the M&E system which will be designed to generate information on implementation achievements, Project financing, disbursement trends, procurement, contractor performance, beneficiary participation, Project outputs and outcomes and sustainability; (ii) lessons learnt from supervision mission reports, MTR and PCR; and (iii) beneficiary impact assessment and final stakeholders' workshop will provide feedback on key lessons and experiences. NAMSIP will provide an opportunity to strengthen the Bank's knowledge on the agriculture sector in Namibia. Above that, the Project has incorporated specialised training which will help to build knowledge, skills and capacity of MAWF staff, cooperatives members and other individual beneficiaries.

4.6.3. Documentation and sharing of lessons, experience (successes and failures) and good practice will be carried out continuously during and after Project implementation. Depending upon the need, appropriate support (print and electronic media) and several communication channels (such as newspapers, mobile-phone-SMS, radio, TV and billboards) will be used in order to boost visibility. The Project-related online information will also be available on the existing Government/MAWF website which will be regularly posted after approval by HCT.

V. LEGAL INSTRUMENTS AND AUTHORITY

5.1. Legal Instruments

5.1.1 ADB Loan to the Republic of Namibia.

5.2. Conditions Associated with Bank's Intervention

5.2.1 Condition Precedent to Entry into Force: The entry into force of the Loan Agreement shall be subject to the fulfilment by the Borrower of the provisions of Section 12.01 of the General Conditions of the Bank.

5.2.2 Condition Precedent to First Disbursement: The obligations of the Bank to make the first disbursement of the Loan shall be conditional upon the entry into force of this Agreement.

5.2.3 Other Conditions: The Borrower shall:

- a. Prior to the request for disbursement of advance to the special account provide evidence of having opened one (1) Special Account denominated in ZAR and one (1) local currency account denominated in NAD, at the Bank of Namibia into which the proceeds of the Loan will be deposited (§4.1.8); and
- b. within six (6) months of the signing of the Loan Agreement, provide evidence, in form and substance satisfactory to the Bank, of the recruitment of 3 Technical Advisors (TA) to MAWF, each with skills and qualifications acceptable to the Bank (§4.1.1).

5.3. Undertakings

The Borrower undertakes to implement the Environmental and Social Management Plan (ESMP) of NAMSIP, and report to the Bank on a quarterly basis, as part of the quarterly progress report, throughout the Project implementation period (§3.2.1).

5.4 Compliance with Bank Policies

- This project complies with all applicable Bank policies.
- Non-standard conditions (if applicable): N/A

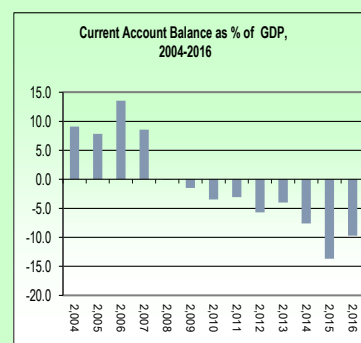
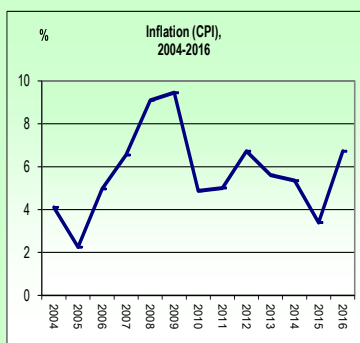
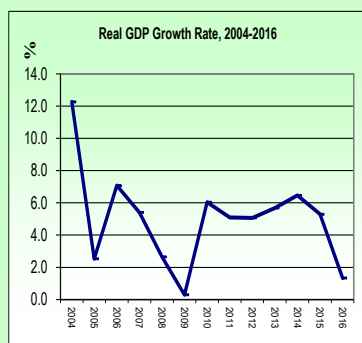
VI. RECOMMENDATION

Management recommends that the Board of Directors approves the proposed ADB Loan of **One Billion South African Rand (ZAR 1 billion)** to the Republic of Namibia for the purpose of implementing the Namibia Agricultural Mechanisation and Seed Improvement Project (NAMSIP) and subject to the conditions stipulated in this report.

Appendix 1:

Namibia - Comparative Socio-economic Indicators

Indicators	Unit	2000	2011	2012	2013	2014	2015	2016 (e)
National Accounts								
GNI at Current Prices	Million US \$	4,005	11,134	12,489	13,446	13,624	12,811	...
GNI per Capita	US\$	2,110	4,970	5,450	5,730	5,670	5,210	...
GDP at Current Prices	Million US \$	3,909	12,410	13,016	12,720	12,838	11,546	10,414
GDP at 2000 Constant prices	Million US \$	3,909	6,439	6,765	7,149	7,611	8,014	8,121
Real GDP Growth Rate	%	4.1	5.1	5.1	5.7	6.5	5.3	1.3
Real per Capita GDP Growth Rate	%	1.9	2.9	2.7	3.2	4.0	2.9	-0.9
Gross Domestic Investment	% GDP	17.1	22.4	26.7	25.2	33.0	34.0	26.5
Public Investment	% GDP	5.1	8.2	7.2	6.8	4.3	5.3	5.5
Private Investment	% GDP	12.0	14.1	19.5	18.4	28.7	28.8	21.0
Gross National Savings	% GDP	25.0	19.3	21.0	21.2	22.3	21.2	16.8
Prices and Money								
Inflation (CPI)	%	9.3	5.0	6.7	5.6	5.4	3.4	6.7
Exchange Rate (Annual Average)	local currency/US\$	6.9	7.3	8.2	9.7	10.9	12.8	15.1
Monetary Growth (M2)	%	66.4	11.3	9.7	6.5	7.7	10.5	11.4
Money and Quasi Money as % of GDP	%	58.8	98.9	91.4	84.7	80.4	84.0	87.6
Government Finance								
Total Revenue and Grants	% GDP	29.6	27.7	31.7	33.0	33.4	35.4	34.9
Total Expenditure and Net Lending	% GDP	31.1	39.0	34.0	37.3	42.0	43.6	39.0
Overall Deficit (-) / Surplus (+)	% GDP	-1.5	-7.2	-1.0	-3.9	-6.6	-8.7	-4.7
External Sector								
Exports Volume Growth (Goods)	%	-0.9	-4.3	-1.1	0.8	-4.1	0.4	9.5
Imports Volume Growth (Goods)	%	-5.2	-0.6	19.0	1.1	8.5	1.0	3.4
Terms of Trade Growth	%	12.7	5.7	1.5	4.7	3.5	-8.3	5.9
Current Account Balance	Million US \$	308	-379	-742	-509	-976	-1,582	-1,011
Current Account Balance	% GDP	7.9	-3.1	-5.7	-4.0	-7.6	-13.7	-9.7
External Reserves	months of imports	1.9	3.4	2.9	2.4	1.7	2.6	2.8
Debt and Financial Flows								
Debt Service	% exports	16.0	33.2	40.6	30.7	38.7	42.7	43.8
External Debt	% GDP	20.4	41.5	35.5	39.1	42.9	50.6	60.3
Net Total Financial Flows	Million US \$	127	708	-769	280	-777	394	...
Net Official Development Assistance	Million US \$	152	278	252	261	226	142	...
Net Foreign Direct Investment	Million US \$	186	1,120	1,133	801	432	1,078	...



Source : AfDB Statistics Department; IMF: World Economic Outlook, April 2017 and International Financial Statistics, April 2017;

AfDB Statistics Department: Development Data Portal Database, March 2017. United Nations: OECD, Reporting System Division.

Notes: ... Data Not Available (e) Estimations (p) Projections

Last Update: June 2017

Appendix 2: The Macroeconomic and Structural Context for the Bank’s Financial Support to Namibia - the Link between the Policy Based Operation (PBO) and Agriculture Sector Project (NAMSIP)

The Bank’s financial support to Namibia takes a two pronged approach designed to help advance the country’s development agenda in a comprehensive and coherent manner. The PBO (ZAR6 billion) constitutes one part to support policy measures for addressing emerging vulnerabilities undermining macroeconomic stability and bold structural reforms for job creation and income equality. On the other part, this Namibia Agricultural Mechanisation and Seed Improvement Project (NAMSIP: ZAR 1.00 billion), builds on and reinforces the PBO results for enhanced sustainable development outcomes.

Core Development Challenges		Government’s Intervention	Budget Support (Policy Based) Operation	NAMSIP
Emerging vulnerabilities and challenges are undermining macroeconomic stability	After strong growth performance during the global downturn, Namibia is nursing wide fiscal and current account deficits, sharp rise in public debt and low international reserves. Furthermore, liquidity constraints in the domestic market and rollover risks are impacting on the authorities' capacity to raise money domestically a traditionally preferred modality for gap financing. Recourse to international capital markets, is constrained by exchange rate risks and its impact on public debt. Fitch and Moody’s in 2016Q4 revised Namibia’s sovereign credit rating outlook from stable to negative.	Accelerated fiscal consolidation stance: Spending cuts of up to 2.8% of GDP in 2016/17 budget; Strengthening revenue mobilization and tax arrears; Reducing non priority spending, containing public sector wage bill. Prudent fiscal gap financing: To limit negative impact on public debt, GRN is focusing on ZAR borrowing from domestic market, JSE and AfDB at competitive rates.	Prior policy actions support collection of tax arrears and containment of wage bill. Financing provides fiscal space for priority capital and social spending. Long-term liquidity in ZAR mitigates exchange rate risk on debt.	NAMSIP’s construction and implementation phases will be instrumental in catalyzing domestic demand and creating jobs supporting the Government’s ‘growth friendly’ fiscal consolidation stance.
Weaknesses in PFM and economic governance are impacting on the quality and efficiency of public sector spending	Slow pace of PFM reforms is weakening public sector efficiency, regulatory oversight and enforcement and increased participation of private sector in public investment financing. At the same time while State Owned-Enterprises (SOEs) play an important role in social service delivery and public sector capital investments, the majority exhibit poor governance and financial performance and represent a significant fiscal burden and risk on public finances through annual budget transfers and guaranteed debt estimated at 4.5% of GDP.	Establishing semi-autonomous Revenue Agency to strengthen revenue collection; Making public procurement more transparent and efficient and facilitating participation of SMEs Operationalizing Public-Private Partnerships (PPP) to strengthen mobilization of private financing. Improving SOE governance and financial performance to reduce fiscal risks. Modernizing PFM law and achieve Auditor General’s independence . Enhancing public debt strategy.	Prior policy actions support advancements in the operationalization of the Revenue Agency, PPP, new Public Procurement law, new PFM and Audit law, improvements to SOE performance and approval of the new public debt strategy.	Use of country institutions and systems such as public procurement, PPP unit and related SOEs will help strengthen capacity.

Core Development Challenges		Government's Intervention	Budget Support (Policy Based) Operation	NAMSIP
<i>Structural bottlenecks are limiting Namibia's capacity to achieve broad economic diversification for the creation of quality jobs and meaningful reduction in income inequality</i>	Dependence on mining contributes to growth volatility, slow employment creation and income inequality. An analysis of the growth pattern, shows that low labor intensive mining sector has been a key growth driver. Mining account for the largest share of GDP, contributes nearly half of export earnings and offers the highest wage rate but employs only 2% of the labour force. While agriculture is the biggest employer, it contributed 3.8% share to GDP and has low wage rates. The low employment elasticity of mining and low wage in agriculture partly explains the failure by the economy to translate high growth rates into more jobs and greater income equality. Economic diversification efforts are hampered by a poor business regulatory environment, infrastructure bottlenecks, skills mismatch, and lack of financing for Micro, Small and Medium Enterprises (MSMEs).	<p>The HPP has identified SME based manufacturing (industrialization) as one of the key priorities of the NDP on which to focus reforms and resources in order to drive economic diversification and long term job creating growth. The Growth at Home Strategy provides a clear road map for export oriented industrialization. It promotes the creation of quality jobs through SME value-adding market oriented activities in agricultural crops, horticulture and livestock and the country's vast mineral resources including diamond, gold and copper.</p> <p>The HPP, NDP and Growth at Home Strategy underscore the importance of improving competitiveness of infrastructure: energy, transport, water and sanitation, agriculture, and ICT for industrialization. The Green Scheme is supporting growth in agricultural productivity. The Business and Intellectual Property Authority (BIPA) has been established to improve the business environment. An MSME policy is in place and an Industrialisation Agency is being established for oversight.</p>	Prior policy actions support advancements in the operationalization of the BIPA Authority to improve the business environment for industrialization, MSME policy and financing strategy and the Industrialization Agency.	NAMSIP will support priority investments in agriculture infrastructure, mechanisation and seed systems, including capacity building, in order to enhance agricultural production and productivity, SME driven agricultural value addition and financing to promote the creation of quality jobs, improve household incomes, enhance food security and nutrition, and reduce poverty.

Appendix 3a: AfDB's Active Portfolio in Namibia (July 2017)

No	Division	Long name	Status of Project	Task Manager Name	Finance Project	Loan Number	Sector Name	Window	Approval date	Entry into force	Project completion date	Amount (UA) Approved	Amount (UA) Disbursed	Disb. Ratio	Age (Yrs)
1	PISD	Development Bank of Namibia (DBN) - Corporate Loan	OnGo	BANDA Jonathan Richard	P-NA-HAA-004	2000130014230	Finance	ADB	7/9/2015	7/22/2016	1/1/2028	245,182,170.4	190,697,243.6	77.8	2.0
2	PISD	Corporate Loan to TRUSTCO Finance Limited	OnGo	ANSAH Dennis	P-NA-HB0-001	2000130008080	Finance	ADB	12/7/2011	12/12/2012	8/1/2019	3,541,520.2	3,541,520.2	100.0	5.6
							Finance					248,723,690.6	194,238,763.9	78.1	2.0
3	ECST	Statistical Capacity Building Program Phase II (SCB-II)	OnGo	MUWELE Besa	P-NA-K00-001	5500155004654	Multi-Sector	ADB	7/7/2011	3/2/2012	9/30/2016	490,600.0	490,600.0	100.0	6.0
4	ECGF	MIC Grant Institutional Strengthening for PPP	OnGo	KOMA Baboucarr	P-NA-KA0-001	5500155009151	Multi-Sector	ADB	7/8/2015	11/9/2015	12/31/2019	787,671.0	149,493.8	19.0	2.0
5	ECGF	Economic Governance and Competitiveness Support Programme	APVD	KOMA Baboucarr	P-NA-IAD-004	5500155009951	Multi-Sector	ADB	5/10/2017		12/31/2019	163,454,780.2	0.0	0.0	0.1
							Multi-Sector					164,733,051.2	640,093.8	0.4	2.7
6	AHHD	MIC - Support To The Namibia National Council On Higher Education	OnGo	BANDA Kelvin Kanswala	P-NA-IAD-004	5500155009951	Social	ADB	2/3/2016	5/10/2016	9/30/2018	396,985.0	184,055.2	46.4	1.4
							Social					396,985.0	184,055.2	46.4	1.4
7	PICU	New Port of Walvis Bay Container Terminal Project - Loan	OnGo	MALINGA Richard	P-NA-DD0-002	2000130010780	Transport	ADB	7/22/2013	11/8/2013	12/31/2017	162,474,051.6	100,147,878.8	61.6	3.94
						5500155006651		MIC	7/22/2013	11/8/2013	6/30/2018	1,000,000.0	489,936.2	49.0	3.94
							Transport					163,474,051.6	100,637,815.0	61.6	3.9
							Grand Total					577,327,778.4	295,700,727.7	51.2	3.0

Appendix 3b: AfDB's Active Portfolio in Namibia (July 2017)

Sector	Approved Amount (UA)	Distribution by sector (%)
Finance	248,723,690.6	43.1
Multi-Sector	164,733,051.2	28.5
Social	396,985.0	0.1
Transport	163,474,051.6	28.3
Grand Total	577,327,778.4	100.0

Namibia: Portfolio Performance by Sector				
Sector	Number of Projects	Amount Approved (UA million)	Disbursement Ratio (%)	Average Age (Years)
Finance	2	248.7	78.1	2.0
Multi-Sector	3	164.7	0.4	2.7
Social	1	0.4	46.4	1.4
Transport	1	163.5	61.6	3.9
Grand Total	7	577.3	51.2	3.0

Namibia: Key Portfolio Performance Indicators	
Selected Indicators	July-2017
Portfolio performance (Flashlight Report) % satisfactory	71.4
Number of Projects Flagged Red	0
Average size of projects (UA million)	82.5
Average project age (years)	3.0
No. active operations (#)	7
Average disbursement rate (%)	51.2
No. of ageing projects (#)	0
Slow disbursing projects (#)	1
Projects at Risk (#)	0
Commitments at Risk (UA million)	0
Commitments at Risk (in %)	0
Average time from approval to effectiveness (years)	1
Projects experiencing signature, effectiveness and first disbursement delays (#)	0

Appendix 4a: Distribution of Project Interventions per Project Year (PY) – Details are in PAR Volume II Technical Annex C

No	Item Description	HACCIADEP Proposal (Quantity)	Total Qty	Planned Quantities per Project Year (PY)				
				PY1	PY2	PY3	PY4	PY5
Crop Machinery and Equipment								
1	Tractors (80-90 kW) with matching trailer, plough, planter, disc harrow, ripper, weeding cultivator, fertilizer applicator, and herbicide boom sprayer	150 (15 x 10 regions)	150	30	30	30	30	30
2	Tractors (60-70 kW) with matching trailer, plough, planter, disc harrow, ripper, weeding cultivator, fertilizer applicator, and herbicide boom sprayer	100 (10x10 regions)	100	20	20	20	20	20
3	Tractors (40-50 kW) with matching trailer, plough, planter, disc harrow, ripper, weeding cultivator, fertilizer applicator, and herbicide boom sprayer,	300 (30 x10 regions)	100	20	20	20	20	20
4	Walking tractors with matching trailer, plough, planter, disc harrow, ripper, weeding cultivator, fertilizer applicator, and herbicide sprayer	700 (50x14 regions)	700	140	140	140	140	140
5	4 row engine propelled Harvesters	80 (8x 10 regions)	80	16	16	16	16	16
6	2 row engine propelled Harvesters	80 (8x 10 regions)	80	16	16	16	16	16
7	Maize Threshing machine	80 (8x 10 regions)	80	16	16	16	16	16
8	Pearl Millet Threshing machine	80 (8x 10 regions)	80	16	16	16	16	16
9	Tricycle with trailers	80 (8x 10 regions)	80	16	16	16	16	16
10	Engine Driven Hammer Mills	80 (8x 10 regions)	80	16	16	16	16	16
11	40 kW irrigation pumps with abstraction and delivery pipes, filters, solar or diesel engines powered, valves, dripper lines, drip lines, nozzles, fertigation tanks	169 (13x13 regions)	169	34	34	34	34	33
12	Water Tanks	1,400 (100x14 regions)	1,400	280	280	280	280	280
13	Operational Cost for tractors and maintenance of equipment	LS	1	1				
14	Green house sets (100m x100m)	28 (2x14 regions)	28	6	6	6	5	5
15	Shade netting sets (200mx50m, between 50 to 60%)	112 (8x14 regions)	112	23	23	23	23	20
16	Knapsack sprayers	2,800 (200x14 regions)	2,800	560	560	560	560	560
17	Jab Seed Drillers	3,500 (250x14 regions)	3,500	700	700	700	700	700
18	Vegetable seed drillers	3,500 (250x14 regions)	3,500	700	700	700	700	700
Livestock Machinery and Equipment								
1	Veterinary Cold chain/drug Kits	3,500 (250x14 regions)	3,500	700	700	700	700	700
2	Castration Burdizzos	3,500 (250x14 regions)	3,500	700	700	700	700	700
3	Dehorning Hot Irons	3,500 (250x14 regions)	3,500	700	700	700	700	700
4	Hoof trimmers	3,500 (250x14 regions)	3,500	700	700	700	700	700
5	Ear tags	92,400 (11550x8 regions)	92,400	18,480	18,480	18,480	18,480	18,480
6	Automatic drug injection guns	3,500 (250x14 regions)	3,500	700	700	700	700	700
7	De-worming applicators	3,500 (250x14 regions)	3,500	700	700	700	700	700
8	Grass Mowers	350 (25x14 regions)	350	70	70	70	70	70
9	Hay rakes	350 (25x14 regions)	350	70	70	70	70	70
10	Bailers	350 (25x14 regions)	350	70	70	70	70	70
11	Water troughs	700 (50x14 regions)	700	140	140	140	140	140
12	Feeding troughs	700 (50x14 regions)	700	140	140	140	140	140
13	Grass and Hay choppers	350 (25x14 regions)	350	70	70	70	70	70

No	Item Description	HACCIADep Proposal (Quantity)	Total Qty	Planned Quantities per Project Year (PY)				
				PY1	PY2	PY3	PY4	PY5
14	Trainer of Trainers' Capacity Building on Agriculture Mechanization (Crop&Livestock)	3,000 (214x14 regions)	3,000	600	600	600	600	600
Seed Systems Development								
1	Production of maize certified seed on 60 ha in Zambezi and Kavango East Region (420 t/yr x N\$10,000/ton x 5yrs = N\$ 21,000,000.00)	60 ha X 7 t /ha x 5yrs = 2,100 t	2100	420	420	420	420	420
2	Production of sorghum certified seed on 60 ha in Omusati and Oshikoto Region (180 t/yr x N\$10,000/ton x 5yrs = N\$ 9,000,000.00)	60 ha x 3 t/ha x 5yrs = 900 t	900	180	180	180	180	180
3	Production of pearl millet certified seed on 60 ha in Omusati and Oshikoto Region (120 t/yr x N\$10,000/ton x 5yrs = N\$ 6,000,000.00)	60 ha x 2 t/ha x 5yrs = 600 t	600	120	120	120	120	120
4	Production of cowpea certified seed on 10 ha each in Zambezi, Kavango East, Kavango West, Oshana, Omusati and Oshikoto Region (120 t/yr x N\$12,000/ton x 5yrs = N\$ 7,200,000.00)	60 ha x 2 t/ha x 5yrs = 600 t	600	120	120	120	120	120
5	Establishment of three irrigation systems (drip or sprinkler) 200 ha per scheme in Kavango West, Omusati and Zambezi (Fixed Sprinklers per hectare is N\$ 96,000.00/ha x 200 ha =N\$19,200,000)	3	3	3				
6	Procurement of seed pre-cleaning machines in Kavango West, Kavango East, Omusati and Zambezi Region	8	8	4	4			
7	Procurement of 4x4 Vehicles for towing seed pre-cleaners in Kavango West, Kavango East, Omusati and Zambezi Region	4	4	4				
8	Operational costs for vehicles, trucks and capacity building (Lump Sum/LS)	1	1	1				
9	Trucks (10 ton) for seed transportation to Silos	2	2	1	1			
10	Equipment and Packaging material for seeds for Kavango West, Kavango East, Omusati and Zambezi Region	4	4	2	2			
11	Construction of a full house processing plant in Ohangwena, Omusati, Kavango West, Zambezi and Kavango East. Warehouse for seed processing with weighbridge and plan supervision. Construction of a 1,000t capacity @ N\$ 6,500/t silo in Kavango west, Kavango East, Ohangwena, Omusati and Zambezi	5	5	5				
12	5000-E Seed Cleaning SCP80: Specifications: Power about 800-1,000kg/ha with heavy grains; Steel construction with high funnel Feed hopper with Ruttelboden; separate vorsteigsichter; uniform fine classification by steigsichtergitter; standard equipment; top bottom sieve with each exchangeable, Obersiebabreinigung mechanical beater; cleaning sub-screens with electrical adjustable beaters; high efficiency. Feed elevator type 161 E: Power about 5t/h (bulk weight about 0.75kg/l; 5 mug/m, Gurtgeschw.2.5m/s; overall height 4760mm, length 4000 mm, foot height 400mm, head height 360 mm; special design of ALU-belt drums unmixed; elevator with cleaning slides and tensioning device; elevator shaft with inspection port; elevator head with Aufsteckgetriebe-motor 1,5 K; Einschutt funnel 600x600 mm.	4	4	4				
13	Tractors (80-90 KWA) with matching trailer, plough, planter, disc harrow, ripper, weeding cultivator, fertilizer applicator, and herbicide boom sprayer	5	5	2	3			
14	Tractors (60-70 KWA) with matching trailer, plough, planter, disc harrow, ripper, weeding cultivator, fertilizer applicator, and herbicide boom sprayer	5	5	3	2			
15	Prototype Pearl Millet, Cowpea, Maize Thresher Plant	14	14	7	7			

Appendix 4b: Distribution of Project Interventions per Region (Geographical Coverage) – Details are in PAR Volume II Technical Annex C

4b.1. Agricultural Mechanisation (Distribution of Crop Development Machinery and Equipment)

No	Region	Capital City	Area (km ²)	NHIES 2015/2016 (No)		Agricultural Mechanisation (Distribution of Crop Development Machinery and Equipment)																
				Households	Population	Tractors (80-90 kW)	Tractors (60-70 kW)	Tractors (40-50 kW)	Walking tractors	4R Harvesters	2R Harvesters	Maize Thresher	P/Millet Thresher	Tricycle	Hammer Mills	Irrigation Systems	Water Tanks	Green Houses	Shade Netings	Knapsack Sprayers	Jab Seed Drillers	Veg Seed Drillers
1	Kunene	Opuwo	115,260	22,042	93,375	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
2	Omusati	Outapi	26,551	48,967	241,098	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3	Oshana	Oshakati	8,647	40,600	178,468	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
4	Ohangwena	Eenhana	10,706	46,205	253,961	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
5	Oshikoto	Omuthiya	38,685	38,875	195,577	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
6	Kavango West	Nkurenkuru	23,166	15,339	94,331	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
7	Kavango East	Rundu	25,576	26,258	159,681	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
8	Zambezi	Katima Mulilo	14,785	23,394	106,361	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
9	Erongo	Swakopmund	63,539	51,907	175,752				√							√	√	√	√	√	√	√
10	Otjozondjupa	Otjiwarongo	105,460	36,679	151,552	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
11	Omaheke	Gobabis	84,981	18,436	68,037	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
12	Khomas	Windhoek	36,964	104,954	393,830				√							√	√	√	√	√	√	√
13	Hardap	Mariental	109,781	20,796	83,672				√							√	√	√	√	√	√	√
14	IKaras	Keetmanshoop	161,514	23,197	85,019				√							√	√	√	√	√	√	√
Total for Namibia			825,615	517,649	2,280,714																	

4b.2. Agricultural Mechanisation (Distribution of Livestock Development Machinery and Equipment)

No	Region	Capital	Area (km ²)	NHIES 2015/2016 (No)		Agricultural Mechanisation (Distribution of Livestock Development Machinery and Equipment)														
				Households	Population	Vet Cold Chain	Cast. Burd.	Deho. Irons	Hoof Trimmers	Ear Tags Appl	Auto Dr-Inj Guns	De-Worm Appl	Grass Mowers	Hay Rakes	Bailers	Water Troughs	Feeding Troughs	Gra&Hay Choppers	Branding Iron	Training of Trainers
1	Kunene	Opuwo	115,260	22,042	93,375	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Omusati	Outapi	26,551	48,967	241,098	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Oshana	Oshakati	8,647	40,600	178,468	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	Ohangwena	Eenhana	10,706	46,205	253,961	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Oshikoto	Omuthiya	38,685	38,875	195,577	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	Kavango West	Nkurenkuru	23,166	15,339	94,331	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	Kavango East	Rundu	25,576	26,258	159,681	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	Zambezi	Katima Mulilo	14,785	23,394	106,361	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	Erongo	Swakopmund	63,539	51,907	175,752	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	Otjozondjupa	Otjiwarongo	105,460	36,679	151,552	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	Omaheke	Gobabis	84,981	18,436	68,037	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	Khomas	Windhoek	36,964	104,954	393,830	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	Hardap	Mariental	109,781	20,796	83,672	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14	IKaras	Keetmanshoop	161,514	23,197	85,019	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Total for Namibia			825,615	517,649	2,280,714															

4b.3. Seed Systems Development (Distribution of Interventions)

No	Region	Capital	Area (km ²)	NHIES 2015/2016 (No)		Seed Systems Development													
				Households	Population	Maize Fdn Seed	Sorghum Fdn SeedS	P-Millet FdnS	Cow Peas FdnS	Irrigation Systems	Seed Pre-cleaning Machines	4x4 Towing Vehicles	Trucks (10 ton-Seed)	Equip & Material	Full-house Processing Plant	Equip for Processing Plant	Tractors (80-90 KWA)	Tractors (60-70 KWA)	Prototype Thresher
1	Kunene	Opuwo	115,260	22,042	93,375														√
2	Omusati	Outapi	26,551	48,967	241,098		√	√	√	√	√	√	√	√	√	√	√	√	√√
3	Oshana	Oshakati	8,647	40,600	178,468				√										√
4	Ohangwena	Eenhana	10,706	46,205	253,961										√	√	√	√	√√
5	Oshikoto	Omuthiya	38,685	38,875	195,577		√	√	√										√
6	Kavango West	Nkurenkuru	23,166	15,339	94,331				√	√	√		√	√	√	√	√	√	√
7	Kavango East	Rundu	25,576	26,258	159,681	√			√		√	√	√	√	√	√	√	√	√√
8	Zambezi	Katima Mulilo	14,785	23,394	106,361	√			√	√	√		√	√	√	√	√	√	√√
9	Erongo	Swakopmund	63,539	51,907	175,752														
10	Otjozondjupa	Otjiwarongo	105,460	36,679	151,552														√
11	Omaheke	Gobabis	84,981	18,436	68,037														√
12	Khomas	Windhoek	36,964	104,954	393,830														
13	Hardap	Mariental	109,781	20,796	83,672														
14	IKaras	Keetmanshoop	161,514	23,197	85,019														
Total for Namibia			825,615	517,649	2,280,714														

Appendix 5: Justification to Reduce Government's Level of Contribution

1. The Government's total contribution of ZAR 0.36 billion represents about 25.5% of the total NAMSIP cost which is less than the recommended 50% minimum counterpart contribution as per the Bank's 2008 *"Policy on Expenditure Eligible for Bank Group Financing"*. The policy further stipulates that the ADB may finance more than 50% of the total project costs on a case-by-case basis and up to a limit that does not exceed 100%. The justifications for the reduced Government contribution is based on (i) Government's budget situation and debt level, (ii) Country's Financing Allocation to the Agriculture Sector, and (iii) Government's commitment to implement its development programme, as indicated below:

2. The project's financing information indicates that the level of financing to be provided by GRN amounts to UA 19.81.22 million, representing about 25% of the total project cost. This amount is less than the recommended 50% minimum counterpart contribution specified in the Bank's 2008 Policy on Expenditure Eligible for Bank Group Financing. The policy further stipulates that the ADB may finance more than 50% of the total project costs on a case-by-case basis and up to a limit that does not exceed 100%.

3. Following a request received from GRN and discussions with the authorities, the recommendation is for the Bank to finance up to 70.5% of the project cost, with the other co-financiers providing the remainder (GRN 25.5% and the Beneficiaries 4%). The overarching basis for this recommendation is informed on the status of Namibia's current deteriorated fiscal and debt position due to a recent slump in economic activity and a decline in fiscal revenues. The GRN is currently implementing a strong fiscal turnaround program, curbing non-productive spending, slowing some capital spending while aiming to preserve its capacity to finance growth-enhancing capital investments without further overburden public debt. The justification for the reduced Government contribution is further rationalised on the following 3 considerations:

- **A. Government's budget situation and debt level:** Namibia's small and open commodity-driven economy is revealing its vulnerabilities with resulting challenges to its macroeconomic stability. Economic growth stalled at 0.2% real GDP growth in 2016, down from 5.3% in 2015, as mega construction projects ended, weak commodity prices and drought persisted and the subdued economic activity in South Africa and Angola sharply reduced Namibia's Southern African Customs Union (SACU) revenue inflows and services sector activity, respectively.

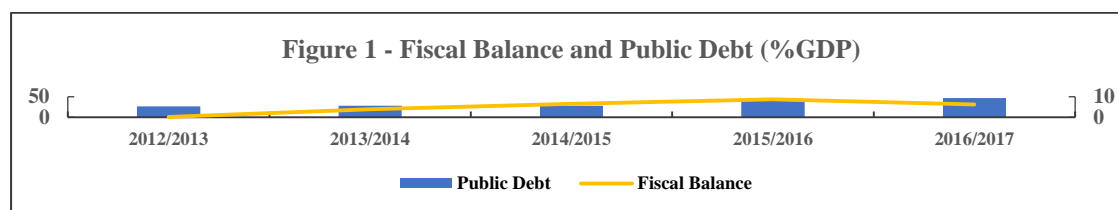
Table 1: Budget Outturn

	2016/17	2017/18 (Estimates)
Total Revenues and Grants (% of GDP)	31.0	32.2
SACU revenues (% of total revenues)	27.7	34.5
Total Expenditure (% of GDP)	38.0	38.0
Fiscal Balance (% of GDP)	-6.9	-5.6

Source: Ministry of Finance

- The slump in economic growth contrasted with the expansionary fiscal policy environment, generating a fiscal deficit and widening public sector debt. In 3 years (2012/13 to 2015/16) Namibia evolved from a nearly zero fiscal deficit of 0.1% to 8.3% share of GDP, as revenue inflows failed to keep pace with increasing public spending. Total expenditure increased from 33.8% of GDP to 43.3%, driven by rapid growth in capital spending, subsidies and transfers and public sector wages and salaries. At the same time total revenues grew only marginally from 33.7%

of GDP in 2012/13 to 35.5% in at the end of 2015/16 weighed down by a sharp reduction in the SACU and domestic tax receipts⁶.



- The fiscal deficit financing nearly doubled public debt ratio to GDP. The Government tapped into the domestic capital market and used proceeds from the US\$750 million Eurobond issued in 2015 and the Johannesburg Stock Exchange (JSE) bonds issued in 2015 and 2016 to finance the deficit. The capital market issuances, combined with the depreciation of the currency sharply increased public debt from 24% of GDP in 2012/13 to 44.4% at the end of 2016/17 breaching the government's own fiscal limit of 40% of GDP. Current Public and Public Guarantee Debt stands at 42.10% of GDP. Nonetheless, the latest Debt Sustainability Analysis carried out by the IMF in 2016 show that Namibia's public debt sustainability and outlook remain below the distress threshold of 70% of GDP.

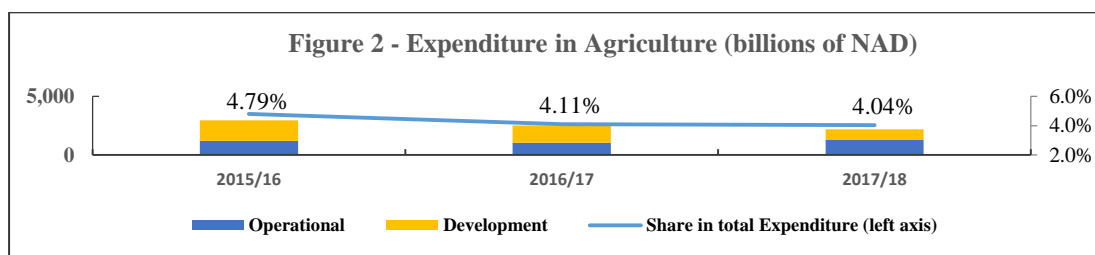
Table 2: Public Debt

	2016/17	2017/18 (Estimates)
Domestic Debt (% of GDP)	25.37	26.11
External/Foreign Debt (% of GDP)	16.00	16.04
Total Debt (% of GDP)	41.40	42.10

Source: Ministry of Finance and Bank of Namibia

- The GRN is addressing these imbalances through a vigorous fiscal consolidation and public financial management reforms to improve the efficiency of spending, strengthening domestic resource mobilization, and putting public debt on a downward trajectory. The 2017/18 budget Measures include cutting non-priority spending of up to 2.8% of GDP while realigning spending plans with revenue streams and introducing some levies and taxes. As a result the Government has delayed or cancelled some development projects. The bold measures aim at reining in current non-productive spending, slowing some capital spending while preserving growth-enhancing capital investments and strengthening domestic revenue mobilisation. The MTEF for 2017/18 targets a zero net increase in the size of the civil service, with wage increase capped to a maximum of the annual inflation rate. These measures which also aim at protecting social spending, are expected to put the fiscal deficit on a declining path, to be in compliance with the fiscal limit of 5% of GDP by 2018/19 and targeting a fiscal deficit of 1% in 2019/2020.
- **B. Country's Financing Allocation to the Agriculture Sector:** Figure 1 provides the Government budget allocation to the agriculture sector. In FY 2016/17, the Government has allocated 4.11% of the total budget expenditures, a reduction of just 0.69% despite the strong fiscal adjustment registering a reduction of 2.4% of GDP of the fiscal deficit, thereby signifying the importance the Government attaches to the sector. The reduction was made in the development component, while keeping operational expenditure mostly intact. Going forward the Government expects to see operational costs increase.

⁶ As a share of total government revenues, SACU receipts represent about 35% in Namibia. In 2015/16 they slowed down to 8.6 % of GDP from 11.6% in 2013/14 while tax revenues moderated to 32.7% of GDP from 33.1%. During the period subsidies transfers increased to 11.9% of GDP in 2015/16 from 10.7% of GDP in 2014/15 while wages and salaries increased from 15.3% of GDP to 16%.



- C. Government's commitment to implement its development programme:** The Fifth National Development Plan (NDP5: 2017/18-2021/22) was designed to help the country achieve four key goals: (i) Achieve Inclusive, Sustainable and Equitable Economic Growth; (ii) Build Capable and Healthy Human Resources; (iii) Ensure Sustainable Environment and Enhance Resilience; and (iv) Promote Good Governance through Effective Institutions. According to NDP5, lack of industrialization and infrastructure has contributed to Namibia's economic imbalance. While drought and declines in prices on the global market are partly responsible for agriculture's relatively small contribution to Namibia's GDP, lack of modernisation in farming techniques and lack of infrastructure in business development have made the agriculture sector less efficient, less robust and less profitable. By modernizing and industrializing the major sectors of agriculture, fisheries, manufacturing, mining, tourism and by providing training opportunities so that workers can upgrade their skills, Namibia will create decent jobs for its citizens in a diverse range of industries. This is indeed the formula for the nation's long-term economic success. NDP5 has four integrated pillars of sustainable development: (i) Economic Progression, (ii) Social Transformation, (iii) Environmental Sustainability, and (iv) Good Governance, which are aligned with Namibia's commitment to eradicate poverty and inequality as outlined in Vision 2030, the Harambee Prosperity Plan (2016), and SWAPO Party Manifesto (2014). Additionally, the pillars support the Agenda 2030, Sustainable Development Goals (SDGs), The Paris Agreement (CoP21), African Union (AU) Agenda 2063, and SADC Regional Indicative Strategic Development Plan (RISDP). NDP5 has identified 5 game changers that will move Namibia from a reactive, input-based economy towards a proactive, high performing economy. The 5 game changers are: (i) Increase investment in infrastructure development; (ii) Increase productivity in agriculture, especially for smallholder farmers; (iii) Invest in quality technical skills development; (iv) Improve value addition in natural resources; and (v) Achieve industrial development through Local Procurement. The NDP5 has a strong focus on revamping the Agriculture sector. Its underlying goal is to address the country's dual economy, a legacy of the colonial era when a highly productive capital-intensive mining sector prospered, while the agro-based subsistence sector, which employs the majority of the population, remained less productive.

4. In view of the above 3 considerations, there is a case for the Bank to reduce the Government's counterpart funding of this critical project to 25.5%. It is expected that this amount will ensure requisite ownership by the authorities and expedite the project's implementation process.

Appendix 6: Map of Namibia



No	Region	Capital	Area (km²)	NHIES 2015/2016 (No)	
				Households	Population
1	Kunene	<u>Opuwo</u>	115,260	22,042	93,375
2	Omusati	<u>Outapi</u>	26,551	48,967	241,098
3	Oshana	<u>Oshakati</u>	8,647	40,600	178,468
4	Ohangwena	<u>Eenhana</u>	10,706	46,205	253,961
5	Oshikoto	<u>Omuthiya</u>	38,685	38,875	195,577
6	Kavango West	<u>Nkurenkuru</u>	23,166	15,339	94,331
7	Kavango East	<u>Rundu</u>	25,576	26,258	159,681
8	Zambezi	<u>Katima Mulilo</u>	14,785	23,394	106,361
9	<u>Erongo</u>	<u>Swakopmund</u>	63,539	51,907	175,752
10	Otjozondjupa	<u>Otiwarongo</u>	105,460	36,679	151,552
11	Omaheke	Gobabis	84,981	18,436	68,037
12	<u>Khomas</u>	Windhoek	36,964	104,954	393,830
13	<u>Hardap</u>	<u>Mariental</u>	109,781	20,796	83,672
14	<u>!Karas</u>	<u>Keetmanshoop</u>	161,514	23,197	85,019
Total for Namibia			825,615	517,649	2,280,714

Appendix 7: Estimated Number of Jobs to be created by NAMSIP

A. Component 1, Sub-component 1 Agricultural Mechanisation

1. Crop production interventions - through procurement of 550 tractors and 700 walking tractors:
 - The area under crop production is expected to increase from 15,000 ha to 64,961 ha.
 - A total of 550 jobs to be created through procurement tractors. Currently the MAWF support 127 tractors drivers with the current tractor fleet of 127 tractors.
 - A total of 700 jobs to be created through procurement of walking tractors
 - A total of 10,000 jobs to be created through weeding services considering the anticipated increase in ha. Currently the MAWF recruits 2,400 men and women participating in weeding services-weeding a total of 4,500 ha.
 - This will translate into **11,250 jobs**.
2. Livestock production interventions - through the procurement and distribution of livestock support services such as Veterinary Cold chain/drug Kits, Castration Burdizzos, Dehorning Hot Irons, Hoof trimmers, Ear tags, Automatic drug injection guns, De-worming applicators, Grass Mowers, Hay rakes, Bailers, Water troughs, Feeding troughs, Grass and Hay choppers the number of livestock will increase thereby creating a number of job opportunities:
 - At the moment a livestock farming household requires on average 4 farm workers to handle both cattle and small-stock.
 - An increase in the number of livestock will assume an increase in the number of farm workers per farming household. This scheme will benefit 10,000 livestock farming households which will mean that a total of **40,000 farm workers** will be recruited.
3. **Total number of jobs for crop and livestock interventions is 51,250.**

B. Component 1, Sub-component 2 Certified Seed Systems Improvement

4. Job creation for seed mechanisation

Activity	Employment	Total Area (ha)	Total No of Jobs per year	Total # of Jobs for 5 years
Weeding	25/ha/day	240 x 25	6,000	30,000
Bird Scaring	2/ha/day	240 x 2	480	2,400
Harvesting	20 people/ha/day	240 x 20	4,800	24,000
Threshing	10 people/40t	240 x 10/40	60	300
Processing & Packaging	12 people/5t	240 x 12/5	576	2,880
Loading/off loading	12 people/35t	240 x 12/35	82	410
Total Number of Jobs (sub-component 1.2)				59,990

5. **Project total (Component 1): 51,250 + 59,990 = 111,240 jobs.**

Appendix 8: Financial and Economic Performance (Analyses)

The financial and economic analysis has been carried out at the farm household level as well as the entire project level. At the farm level, the profitability of the farming operations to the farmers involved has been assessed while at project level comparisons of the overall benefits and total costs have been compared to determine the financial and economic viability of the project. The analysis has been carried out on “with project” and “without project” basis. *Details are in PAR Volume II Technical Annex B.7.*

A. Financial Analysis

Farm Level: The farm analysis has been done by comparing the benefits accruing to the individual beneficiaries, and aggregated for the project as a whole on with and without project basis. Gross margin analyses have been carried out for the major crops to be grown under the agricultural mechanization component namely maize, pearl millet, sorghum and wheat covering a total of 130,840 ha and also for seed multiplication on 680 ha. Pearl millet takes up the largest share of land for production which constitutes 57% of the total land under cultivation. The analysis assumed full utilization of the area targeted for production from year 3 of the project implementation period.

Project Level: The analysis shows that annual net income (gross margin) per farming household in the project increased from (under crop production) increases from ZAR 19,742 to ZAR 74,179 while for income from livestock production/household increased from ZAR 5,221 to ZAR 16,012. The gross margin analyses took into consideration the farm gate prices of the produce and the total cost of production, including an imputed wage of ZAR 300 per hectare for family farm labour per farming season. The financial internal rate of return (FIRR) to the project is calculated at 26.00%, and the net present value (NPV) at 12% opportunity cost of capital is estimated at ZAR 1.13 billion.

Discounted Cash Flow (DCF) Analysis:

- a. **Financial Internal Rate of Return (FIRR):** The DCF analysis carried out on the net cash-flow gave a FIRR of 26.00%
- b. **Financial Net Present Value (NPV):** The NPV for the project is also estimated at ZAR 1.13 billion, at a discount rate of 12%.

B. Economic Analysis

The Agriculture Sector farm inputs market is subsidized by Government and therefore financial prices for the inputs including farm machinery have been adjusted by conversion factors of 1.3 that took into account the level of subsidies and taxes. The economic prices for farm produce have been derived using a standard conversion factor of 0.82. **Results:** The economic internal rate of return (EIRR) to the project is calculated at 23.74% and the net present value (NPV) at 12% opportunity cost of capital is estimated at ZAR 1.03 billion.

C. Sensitivity Analysis

The sensitivity analysis has been carried out under two (2) assumptions and the results are as follows:

	FIRR (%)	FNPV at 12% cost of capital (ZAR billion)
Base Figures	26	1.13
Assumption 1: 10% increase in project costs	17	0.51
Assumption 2: 10% fall in revenues	13	0.065

	EIRR (%)	ENPV at 12% cost of capital (ZAR billion)
Base Figures	23.74	1.03
Assumption 1: 5% increase in project costs	14.45	0.64
Assumption 2: 5% fall in revenues	10.47	0.45

Appendix 9: Environmental Issues

1. According to the nature of activities proposed and the Bank's Environmental and Social Assessment Procedures (ESAP), the NAMSIP was classified as Category II and validated by the Bank on 3rd August 2017. In this case, the potential environmental impacts from the planned activities will be localized, minimal, short term, manageable, reversible and can be mitigated. There will be no resettlement issues. The planned provision of farm machinery and equipment to small-scale producers and agro-processors as well as the development and supply of new and improved seeds are slated to engender significant positive impacts on food production, climate resilience, economic development, livelihoods and quality of life. Nevertheless, the development, expansion and operation of crop and livestock operations can result in direct and indirect environmental and social impacts, including disturbances and loss of fauna and flora, loss or degradation of terrestrial habitats and disruption or contamination of water courses and drainage systems. These impacts are expected to be site-specific and can be minimized by applying appropriate management and mitigation measures. The Project will pay particular attention to handling and use of agricultural chemicals. The potential positive impacts might include improvement of (i) marginally productive semi-arid land into full production, and (ii) livelihoods of rural direct beneficiaries. The negative environmental impacts include disturbance of soil from digging of pits and foundations, debushing and vegetation clearing, emission of dust and generation of noise which will be experienced during the construction phase and will be localized, minimal, short term and can be mitigated. During the operation phase, the negative impacts will include solid, liquid, chemical and biological wastes, which will be generated from the normal operations of the facilities and can be managed by incorporating the requisite waste and effluent handling units. The negative impacts will be localized and can be minimised by using proper mitigation measures, as indicated in ESMP.

2. The Project triggered the following tabulated Bank environmental and social policies:

No.	AfDB Key Environmental Issues Triggered	Yes	No
1.	Reversing Land Degradation and Desertification	[X]	[..]
2.	Protecting the Coastal Zone	[..]	[X]
3.	Protecting Global Public Goods	[X]	[..]
4.	Improving Public Health	[X]	[..]
5.	Enhancing Disaster Management Capabilities	[X]	[..]
6.	Promoting Sustainable Industry, Mining and Energy Resources	[X]	[..]
7.	Improving Urban Environmental Management	[..]	[X]
8.	Environmental Governance	[X]	[..]
9.	Institution and Capacity Building	[X]	[..]
10.	Increasing Awareness	[X]	[..]
11.	Stakeholder Participation	[X]	[..]

The Environmental and Social Management Plan (ESMP) and Monitoring Plan have been prepared by MAWF Team and cleared by the Bank for disclosure. The ESMP detailed report also provides the necessary mitigation measures for negative impact as tabulated in PAR Volume II Technical Annex B.8. The ESMP has been posted on the Bank's website, on 25th October 2017, and can be accessed using the following link:

[Namibia - Namibia Agricultural Mechanisation and Seed Improvement Project \(NAMSIP\) - ESMP Summary](#)