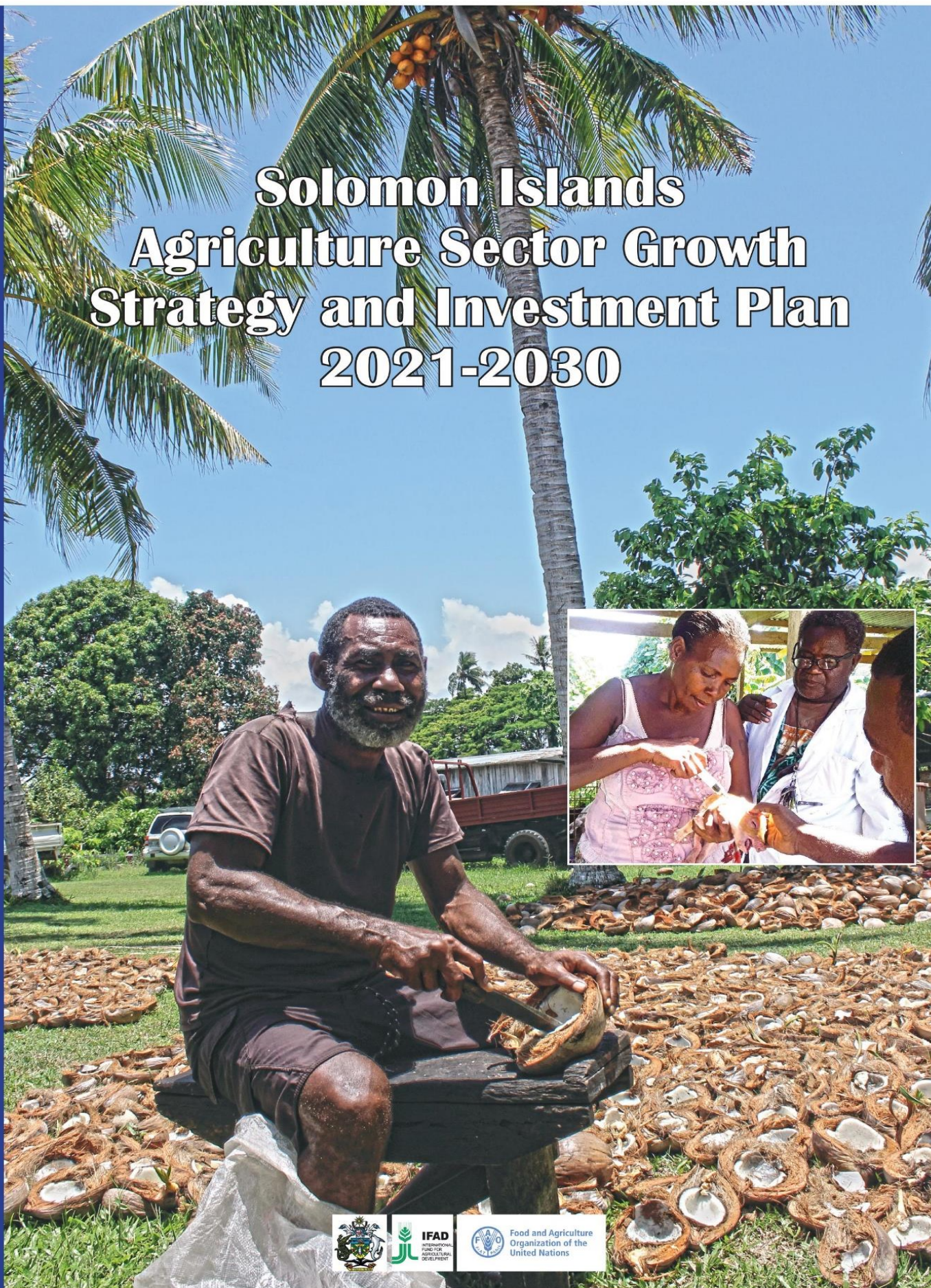


# Solomon Islands Agriculture Sector Growth Strategy and Investment Plan 2021-2030



Food and Agriculture  
Organization of the  
United Nations

**Cover photo: MAL Media**

**Caption:** Rolland Adovi from Doma, Northwest Guadalcanal sun dry's copra for the production of virgin Coconut Oil. Insert, Deputy Director of Livestock Hearley Atupule assists a woman farmer how to inject sick pig against internal and external parasite.

## FOREWORD & ACKNOWLEDGEMENTS

Agriculture is the foundation of livelihoods for 80% of Solomon Islanders and is the vital source and guarantor for our food and nutrition security, employment, and contributor to the country's economy. Natural disasters and international crisis, such as the recent COVID-19 pandemic, have demonstrated again and again the core role a healthy and resilient agriculture sector plays. However, despite this crucial role the sector has performed significantly lower than its potential with low production and productivity caused by continued underfunding, lack of infrastructure, expensive and unreliable access to markets, land ownership constraints, lack of reliable advisory services, absence of or poor planning and coordination between public and private sector agencies, and many more. These challenges led to the agriculture sector only accounting for an average 16% of the country's Gross Domestic Product. This is exacerbated by the low investments into the sector by the national government as reflected in the 1.5% proportion of its total national budget in the period 2015-2020; lower than other countries in the region.

Solomon Islands' agricultural exports had been declining over the last decade, reaching a low in 2018 with an export value of 375 million SBD compared to 453 SBD million in 2010 and 564 SBD million in 2011. Agriculture's share in the total value of exported goods declined from 28% in 2010 to only 8% in 2018. Export values are dominated by palm oil (56%), cocoa beans (18%), copra (14%), and coconut oil (12%).

Contrary to that is the increasing value of imports of agricultural products over the last ten years reaching about 630 SBD million in 2018. Rice imports constitute the biggest share (55%), followed by poultry meat (17%), wheat and a little bit of maize (8%), coffee, tea, and spices (6%), milk and egg products (5%), beef (4%), products of the milling industry, mainly malt and flour (2%), pork only 1%.

Based on the above and because of the significance of agriculture to our people's livelihood, our culture, and our economy, the Government through its DCGA Policy Translation Framework committed itself to revitalise this sector and build it back better to a more productive, environmentally sustainable, and resilient agriculture sector that guarantees continued economic growth and food and nutrition security for all citizens. In addition and in response to the impacts of the COVID-19 pandemic, the Government has also issued a productive sector focused "Policy Redirection Plan", a focused strategy framed by the overall theme of "strengthening our economic sustenance", an approach that is envisaged for implementation beyond the current global pandemic.

The Agriculture Sector Growth and Investment Plan (ASGIP) is MAL's contribution towards that end and is carefully crafted to regenerate this key sector outlining the Government's plan to strengthen, modernize and commercialize it and take it to new heights. It constitutes a "road map" that will guide public and private sector actions and investments in the sector over the next ten years with interlinked interventions to support delivery of its outputs, outcomes and its final overall development goal of "A sustainable, competitive and profitable agricultural sector enhancing economic growth, food sovereignty and prosperity for all Solomon Islanders".

This is in line with and geared to support the achievement of the country's National Development Objectives as outlined in the National Development Strategy (NDS) 2016-2035 in that the different programs are designed to respond to the following NDS Objectives: NDS objective One (Sustained and inclusive economic growth), NDS Objective Two (Poverty alleviated across the whole of the Solomon Islands, basic needs addressed and food security improved; benefits of development more equitably distributed to Solomon Islanders), NDS Objective Three (All Solomon Islanders have access to quality health and education), NDS Objective Four (Resilient and environmentally sustainable

development with effective disaster risk management, response and recovery) and NDS Objective Five (Unified nation with stable and effective governance and public order).

It is the Ministry of Agriculture and Livestock's mission to professionalize and renew itself as a needs driven service provider to the agricultural sector and its stakeholders, to enable (i) enhanced food and nutrition security, (ii) increased agricultural productivity and production, as well as (iii) increased efficiencies and resilience of agricultural value chains resulting in (iv) increased incomes for all actors along the supply chain. In its policies, strategies, corporate culture, and operations, MAL is committed to a variety of vital cross-cutting themes, specifically to (i) using participatory approaches, (ii) providing equal opportunities to women and men, (iii) promoting inclusive development, specifically also for women, youth, the vulnerable and disadvantaged, (iv) promoting environmentally friendly, sustainable, and climate smart farming practices, and (v) creating mutually beneficial partnerships with private sector actors and other industry stakeholders. In this context I must highlight the importance of strong farmer organizations and public private partnerships in delivering this key roadmap. The mission to professionalise and restructure MAL is to position MAL to this end.

Last not least, on behalf of the Ministry of Agriculture and Livestock, I would like to convey my profound gratitude to all who participated in the development of this strategy. It was a highly consultative and iterative process that left no one behind. A special mention goes to all MAL staff, national consultants who participated in the national consultations throughout the country, all our farmers, private sector stakeholders and international development partners, who responded to the call to share their views and ideas that resulted in an all-encompassing wide-ranging strategy. Every institution and individual that shared their time, perspectives and expertise deserves recognition. I also acknowledge with gratitude the financial and extensive technical support received from the International Fund for Agriculture Development (IFAD) and the Food and Agriculture Organization (FAO), both of the United Nations, for supporting us in elaborating this important and comprehensive strategy and the financial support from Australia's Department of Foreign Affairs and Trade. I am honoured to present to you our first Solomon Islands 10-Years Agriculture Sector Growth and Investment Plan 2021-2030.

May God Almighty richly bless our land and the fruits of our labour.

Hon. Senley Levi Filualea  
Minister  
Ministry of Agriculture and Livestock.

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## ACRONYMS

ACIAR.....	Australian Centre for International Agricultural Research
AOA .....	Agriculture Opportunity Areas
ASGIP.....	Agriculture Sector Growth and Investment Plan
ATC .....	Agricultural Training Centre
BSI .....	Biosecurity Solomon Islands
CEMA.....	Central Export and Marketing Authority
CIAT .....	International Centre for Tropical Agriculture
CIP .....	International Potato Centre
CNO .....	Crude Coconut Oil
CRB .....	Coconut Rhinoceros Beetle
DCGA .....	Democratic Coalition Government for Advancement
DME.....	Direct Micro Expelling
FES.....	Field Experimental Stations
FO .....	Farmers' Organization
GAP.....	Good Agriculture Practices
GDP .....	Gross Domestic Product
GIS .....	Geographic Information System
GPPOL .....	Guadalcanal Plains Palm Oil Limited
HVC.....	High Value Crops
ICT .....	Information and Communications Technology
IPM.....	Integrated Pest Management
IRRI .....	International Rice Research Institute
LPCs.....	Land Purchase Cooperatives
M&E .....	Monitoring & Evaluation
MAL.....	Ministry of Agriculture and Livestock
MCILI .....	Ministry of Commerce, Industry, Labour and Immigration
MHMS .....	Ministry of Health and Medical Services
MTDP.....	Medium Term Development Plan
MWYCFa .....	Ministry of Women, Youth, Children and Family Affairs
NAPA .....	National Adaptation Programmes of Action
NARDC.....	National Agriculture Research & Development Centre
NCCP.....	National Climate Change Policy
NDC .....	Nationally Determined Contribution
NRLUP .....	National Rural Land Use Policy
NDS.....	National Development Strategy 2016-2030
NGO.....	Non-Governmental Organisation
OBM .....	Outboard Motor
OIE .....	World Organisation for Animal Health
PAR.....	Participatory Action Research
PHAMA.....	Pacific Horticulture and Agriculture Market Access Project



PIFON .....	Pacific Islands Farmer Organisation Network
PNG .....	Papua New Guinea
PP .....	Productive Partnership
PPP .....	Public Private Partnership
RDP .....	Rural Development Program
RTC .....	Rural Training Centres
SBD .....	Solomon Islands Dollars
SFSC.....	Short Food Supply Chains
SI.....	Solomon Islands
SICCI .....	Solomon Islands Chamber of Commerce and Industry
SIG .....	Solomon Islands Government
SINU .....	Solomon Islands National University
SIWIBA.....	Solomon Islands Women in Business Association
SPC .....	(Secretariat of the) Pacific Community
SPS.....	Sanitary and Phytosanitary Measures
TBT .....	Technical Barriers to Trade
USD.....	United States Dollars

## EXECUTIVE SUMMARY

With around 80 per cent of Solomon Islanders living in rural areas with limited access to infrastructure and services, agriculture (including crops, livestock, fishing and forestry) is the foundation of livelihoods in the country. The agriculture sector (without fisheries and forestry), accounts on average for 16 per cent of the country's gross domestic product, but only receives a small proportion (max 1.5 per cent) of the total national Government budget – one of the lowest levels of agriculture funding in the region.

Both the agricultural sector and MAL have performed significantly below their potential after the disruptions during the ethnic tensions<sup>1</sup> and are still beset by a number of serious shortcomings. These include chronic underfunding; low production and productivity; lack of infrastructure, technical proficiency and cross-sectoral planning and coordination; land ownership constraints; weak or absent land use planning; and high economic risk exposure to geological, hydrological and climatic hazards. While the recent COVID-19 pandemic has negatively impacted the country's economic situation it has also highlighted again the importance of a productive and resilient agriculture sector to guarantee continued economic growth and food and nutrition security for all citizens.

To address the identified challenges, this 10-year Agriculture Sector Growth and Investment Plan (ASGIP) is firmly based on the Government's commitment for enhanced and equitable development as expressed in DCGA's Policy Statement, DCGA's Policy Translation Framework and its recent Policy Re-Direction Paper for the productive sector in response to the Covid-19 crises. In this context the ASGIP identifies strategic opportunities and outlines an ambitious path to revitalise, modernize and commercialize the agricultural sector to contribute to the well-being and prosperity of all Solomon Islanders, ensuring food and nutrition security and increased economic growth.

**ASGIP Programs and Sub-Programs.** Four programs will guide public action and investments in the sector through a matrix of interlinked investments and organizational and technical interventions. Cross-cutting through all programs and sub-programs is the determination towards enhanced resilience of the sector against natural disasters and the impacts of climate change, equitable access to resources and knowledge for all, including women, youth and people living with disabilities, and the use of environmentally friendly and sustainable practices.

**Program 1: Governance, Management & Innovation.** This program comprises the sector's vital organisational, governance, and management aspects as well as the aspects of innovation and easily accessible agricultural advisory services, collaboration with the private sector and farmers organisations, as well as access to land and bio-security. Five Sub-Programmes will be pursued with the following objectives: (i) improved organizational structure and culture that allows for innovation, efficiency, effectiveness, and a stronger industry; (ii) enhanced contribution of agricultural research to sustainable agricultural productivity, food security and poverty eradication; (iii) increased farmer access to information, knowledge and technology through decentralized extension services coupled with increasing private sector involvement; (iv) efficient and sustainable use of agricultural land resources; and (v) enhanced protection from the incursion and impact of plant and animal pests and diseases, and improved market access through compliance with sanitary and phytosanitary measures.

**Program 2: National Food & Nutrition Security Program.** This program promotes innovative, climate smart technologies and resilient production systems to increase accessibility, availability, affordability and diversity of nutritious food for all Solomon Islanders. Five subprograms will be implemented with the following objectives: (i) short and resilient food supply chains ensure the availability of locally

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<sup>1</sup> Ethnic tensions in the period 1999-2003.

produced food, improve local economic development and enhance food and nutrition security; (ii) increased availability of diverse traditional food crops for improved resilience and nutritional status of communities; (iii) increased availability of locally produced meat to fight malnutrition in rural communities; (iv) enhanced food self-sufficiency and income generation through profitable rice-farming systems and multi-cropping systems; and (v) resilient and diverse farming systems coupled with preparedness for replanting and restocking to ensure quick disaster recovery.

**Program 3: National Livestock Development Program.** This program enhances livestock productivity through improved breeds, veterinary and technical advisory services, and promotion of environmentally sustainable farming systems for small-holder and commercial-scale livestock development. To this end five subprograms will be implemented: (i) enhanced animal breeding, production and animal health service capabilities coupled with improved private sector collaboration; (ii) reduced beef imports through increased commercial beef production in sustainable farming systems such as silvopastoral systems; (iii) reduced pork imports through increased commercial pig production in sustainable farming systems with increased percentages of locally produced stock; (iv) reduced poultry imports through enhanced commercial production of broilers and layers in sustainable farming systems with increased percentages of locally produced stock feed and day old chicks; and (v) increased production and processing of premium honey for export and local consumption including partnerships with poor rural communities and private sector.

**Program 4: National Crop Development Program.** This program increases productivity and quality of existing as well as of new high value crops for the export as well as domestic market, through improved varieties, resilient farming systems, and good agricultural practices. Three subprograms with a strong focus on increasing profit margins for farmers and enhanced collaboration with industry stakeholders and private enterprises will be implemented with the following objectives: (i) increased exports and domestic use of high quality copra and other coconut-derived products; (ii) increased exports and domestic use of high quality cocoa and its products from sustainable cocoa farming systems; and (iii) increased and diversified exports and domestic use of well-processed high-value and strategic crops from sustainable farming systems.

**Implementation.** The ASGIP is designed to facilitate implementation through a sector-wide approach involving both the public and private sector (including farmers and their organizations). Other crucial implementation partners include international and national NGOs, international development partners, and civil society organizations, including religious organizations.

**Budget.** Considering the depletion of the sector's available infrastructure and budgetary situation over many years, substantial investment is needed over a sustained period to reinvigorate the agriculture sector and support its transformation into an efficient, vibrant and productive sector. The funding channelled through MAL, consisting of both SIG funds and development partner financing, is envisaged to increase on average by 50% each year in 2021-2023, by an average of 16% each year in 2024-2026 and by an average of 5% each year from 2027-2030. Proportionally, the balance of funding within MAL's annual budget will slowly shift from being driven by the Recurrent Budget (currently 58% of MAL's budget in 2020), towards an industrial focus through the Development Budget (envisaged to comprise 75% of MAL's budget by 2030). This shift is critical to supporting the agricultural revolution in the country. MAL's annual budget will rise from SBD\$56 million in 2020 to SBD\$362 million in 2030.

# CHAPTER 1

## BACKGROUND

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### 1.1. Introduction

With around 80 per cent of Solomon Islanders living in rural areas with limited access to infrastructure and services, agriculture (including crops, livestock, fishing and forestry) is the foundation of livelihoods in the country. The agriculture sector (without fisheries and forestry), accounts on average for 16 per cent of the country's gross domestic product, but only receives a small proportion (max 1.5 per cent) of the total national Government budget – the lowest level of agriculture funding in the region.

Solomon Islands agriculture is characterised by three types of farming, namely (i) smallholder subsistence farming with occasional sales of surplus, (ii) smallholder commercial farming with deliberate market production including cash crops, and (iii) commercial farming including plantations. Most rural households are classified smallholder farmers either subsistence or semi-commercial, selling occasional surplus food crops as well as small amounts of cocoa and coconut products, predominantly copra. Per-capita production of food crops has diminished and the subsistence sub-sector is no longer fulfilling its traditional food security function. Speciality crops targeting niche markets include coffee, kava, vanilla, spices and indigenous nuts but volumes are low and erratic. Artisanal fishing in the lagoons and reefs provide the needed proteins, but due to declining yields, livestock (mainly pigs and poultry) are gaining importance as an additional source of relatively cheap protein. There is a large ocean tuna fishery which exports most of the catch and generates royalties for the Government. Private investment in the sector is scarce, with most agribusiness companies engaged in aggregating and exporting commodities with limited value addition.

### 1.2. Summary of Key Challenges Facing the Agriculture Sector

Groundwork for the development of this Agriculture Sector Growth Strategy and Investment Plan, included a detailed agriculture sector study and two key background papers: Ministry of Agriculture and Livestock (MAL) Institutional Analysis, and Provincial Agricultural Priorities (see detached ASGIP Annex). The broad conclusion emerging from these studies is that both the sector and MAL have performed significantly below their potential after the disruptions during the ethnic tensions<sup>2</sup> and are still beset by a number of serious shortcomings:

- Despite reasonable agricultural policies and strategies, budgetary allocations (recurrent and development budgets) to the sector over the last 15 years have chronically fallen short of enabling a recovery and strengthening the sector's performance. This is mirrored by the recurrence of the same investment proposals in all the MAL Corporate Plans over the same period of time.
- Production and productivity of the agriculture sector is low which negatively affects food security, national self-sufficiency levels, export earnings, employment generation in agriculture and allied sectors, and rural livelihoods in general.
- MAL lacks the necessary infrastructure including offices, staff houses, research and training facilities, biosecurity facilities, laboratories, as well as mobility and information and

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<sup>2</sup> Ethnic tensions in the period 1999-2003.

communications technology (ICT) capabilities needed to deliver services to farming communities. Improvement of MAL's infrastructure has to be accompanied with national and provincial infrastructure investments, especially in the areas of transport, market infrastructure, slaughterhouses, warehousing and cold storage, electricity, and mobile phone coverage.

- To lift MAL's technical proficiency, MAL staff urgently needs to be revitalised in terms of upgrading skills, development of subject matter specialists (SMS), and recruitment of sufficient numbers of new young graduates. Incentive schemes for staff in more remote duty stations is needed for increasing MAL outreach and impact.
- Lack of cross-sectoral planning, coordination and mutual support between the public and the private sector, as well as between national and provincial development plans and budgets (e.g. the PCDF grant) leads to inefficiencies and fragmented development efforts. Commodity specific value chain development plans agreed upon by the public and private sector, the national and provincial governments are rare or non-existent. Clear and transparent collaboration mechanisms between the agriculture sector with the private sector are not yet in place.
- Customary land ownership often constrains investments into agriculture by young and motivated farmers or entrepreneurs, limits development options also for foreign investors, and disadvantages women seeking equitable access to land.
- A dispersed and fragmented rural farming population with low levels of organization (e.g. into cooperatives, associations or companies) limits effective and efficient trade partnerships service provision, as well as other shared benefits.
- Weak or absent land use planning, combined with unclear ownership, contributes to unregulated and sometimes unsustainable exploitation of natural resources. Uncontrolled deforestation results in the loss of native tree species and in some cases to soil erosion and siltation of coastal marine resources, all resulting in loss of biodiversity. Other consequences include shortened fallow periods and loss of soil fertility, all resulting in increased vulnerability to climate change and natural disasters and increased food insecurity.
- Solomon Islands is amongst the 20 countries with the highest economic risk exposure to geological, hydrological and climatic hazards including tropical cyclones, volcanic eruptions, earthquakes, tsunamis, landslides, floods and droughts. Of the total damage and loss for the floods in 2014, 88 per cent is attributable to crops, 10 per cent to livestock, and 2 per cent to fisheries. The total effect to the sector amounts to USD 18.41 million, of which USD 1.50 million (8 per cent) is damage and USD 16.94 million (92 per cent) is loss. Extreme climate events and natural disasters are highly likely to significantly undermine agricultural productivity in the coming years.

Against this challenging backdrop, this 10-year Agriculture Sector Growth and Investment Plan (ASGIP) identifies strategic opportunities and outlines an ambitious path to revitalise the agricultural sector to contribute to the well-being and prosperity of all Solomon Islanders, ensuring food and nutrition security and increased economic growth.

### 1.3. Policy Context for the ASGIP Development

The Agriculture Sector Growth Strategy & Investment Plan 2021-2030 as well as the previous Solomon Islands National Agriculture and Livestock Sector Policy 2015-2019 (SINALSP) and MAL's Corporate Plan of 2015-2019, are in strong alignment with key existing public governmental policies and

development plans. Chief among them is the National Development Strategy 2016-2035 (NDS) and the related Medium Term Development Plan 2016-2020 (MTDP), which translates the long-term development objectives of the NDS into medium-term development strategies with specific priority programs under each strategy and budget plans for individual ministries. The current MTDP includes thirteen priority programs that address the agriculture sector and form the basis for budgetary allocations to MAL for 2016-2020.

MAL's 2015-2019 SINALSP and Corporate Plan focused on food sovereignty and food safety, improved livelihoods and poverty alleviation, land-use planning, import substitution, increased exports, strong farmer organizations, and sustainable resource management.

The evaluation of actually achieved results over the last years has not yet been finalized, however, the economic performance of the agriculture sector shows a continuing decline, research and extension are only marginally functional, land use planning has not yet started, and food imports are sharply rising while agricultural exports (mainly in the form of copra, cocoa and palm oil) are stagnating or decreasing.

The new Democratic Coalition Government for Advancement (DCGA) has pledged to address previous shortcomings and persistent challenges by progressively promoting practical down-to-earth research, commercial agriculture for trade and enhanced food security, forging stronger partnerships with the private sector and farmer organizations, and transforming MAL into a service-oriented agency with increased technical capabilities and improved facilities.

The political and strategic direction for the requisite investments and actions for developing the agriculture sector are expressed in the DCGA Policy Statement and its concomitant Policy Translation Framework of 2019, as well as in its response to the COVID-19 pandemic expressed in its Policy Re-Direction of 2021, outlining key priorities as follows:

1. **MAL Restructuring and Reform:** Restructure and reform MAL to become an effective and efficient provider of policies, regulations, and support services to boost the sector.
2. **MAL Capacity Development:** Ensure that qualified and adequate human resources and facilities are available to provide the needed services to the agriculture sector.
3. **Research and Development:** Establish the National Agriculture Research Institute to support the improvement of crops, livestock and the marketing of high value cash crops.
4. **Agriculture Advisory Services.** Professionalize MAL extension services and strengthen collaboration with private sector to ensure effective and robust support services to the sector.
5. **Commercial Agriculture:** Facilitate and support the development of commercial agriculture for increased exports, import substitution, and enhanced national food security.
6. **Promote Agribusinesses:** Pursue agribusiness and livelihood ventures through diversified agriculture enterprises in collaboration with private sector and farmer organizations.
7. **Strengthen Biosecurity:** Strengthen biosecurity to protect Solomon Islands against exotic pests and diseases and improve the country's capacity to export.
8. **Enhanced Food Security:** Enhance food security and food safety to alleviate poverty, improve livelihoods, and increase resilience against climate change and natural and economic shocks.
9. **Land Use Planning & Management:** Support land use planning to facilitate improved productivity, safeguard land against destruction, preserve biodiversity, and to improve food security.
10. **Agro-forestry Development:** Review national agro-forestry regulations to promote climate-resilient farming systems for increased productivity and food security.

The ASGIP 2021-2030 programs and sub-programs reflect the above policy statements and provide a clear pathway for the development of the agriculture sector within the next decade. In addition the ASGIP is guided by general policy directions and key principles as listed below:

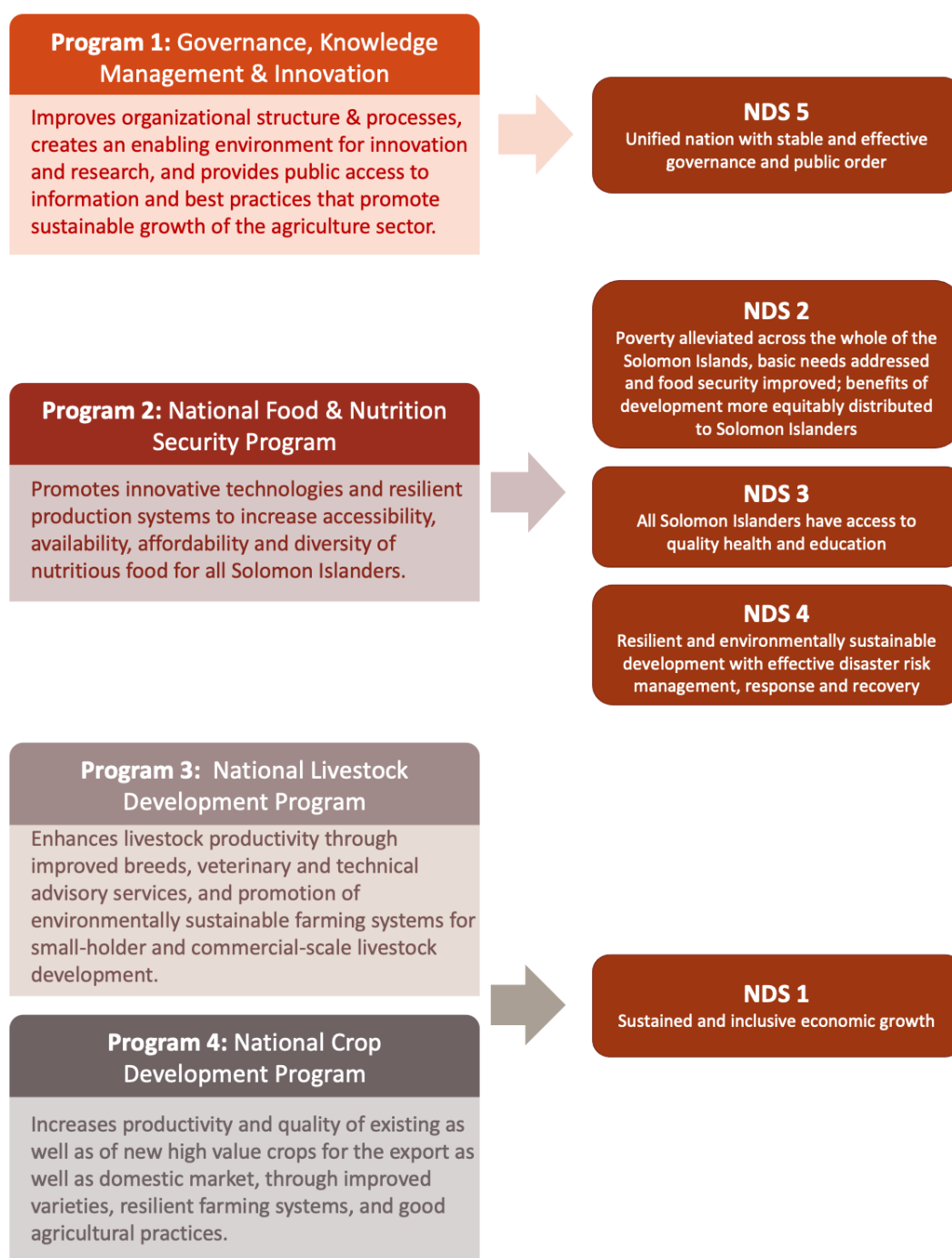
- Use of pluralistic agricultural advisory services (e.g. through MAL, private sector, NGOs) using participatory approaches and innovative technologies for effective service delivery.
- Promoting and empowering women, youth and people with special needs to equally participate and benefit from all agricultural development activities and support services.
- Development and use of consultative, cooperative and partnership approaches such as Public Private Partnerships (PPPs) and Public-Private-Producers Partnerships (4Ps).
- Facilitation and involvement of private sector enterprises and industries relevant to the development of efficient commodity value chains and resilient food systems.
- Empowerment of resource owners, whereby the resource-owners' responsibility to sustainably manage and maintain natural resources to benefit present and future generations is recognised and promoted.
- Use of proven scientific techniques and innovations, as well as beneficial traditional skills to adapt to and/or mitigate climate change and establish healthy ecosystems.
- Fair, equitable, transparent and timely enforcement of regulatory measures for the agriculture sector.
- Application of sound land use planning strategies for sustainability.
- Accurate, timely information on the sector accessible by all.

# CHAPTER 2

## AGRICULTURE SECTOR INVESTMENT PROGRAMS

The Agriculture Sector Growth and Investment Plan (ASGIP) outlines the Government’s plan to regenerate, modernize and commercialize Solomon Islands’ agriculture sector. Four key programs constitute a “road map” to guide public action and investments in the sector over the next ten years. It is based on a matrix of interlinked investments, organizational and technical interventions contributing to the progressive achievement of sub-program objectives, key outcomes, and the overall development goal (see Table 1). It is strongly aligned with the National Development Strategy.

**Figure 1: ASGIP and NDS alignment**





**Table 1: ASGIP Summary Matrix**

<b>Development Goal</b> (MAL vision)	A sustainable, resilient, competitive and profitable agricultural sector enhancing economic growth, food sovereignty and prosperity for all Solomon Islanders.			
<b>Key Outcomes</b> (MAL mission)	<ul style="list-style-type: none"> <li>• MAL operates as a professional, client-oriented, effective and accountable institution offering equal opportunities to women and men.</li> <li>• Enhanced food and nutrition security for all rural as well as urban areas.</li> <li>• Sustainably increased production and productivity of a resilient livestock and crops sector for supplying domestic as well as export markets.</li> <li>• Improved efficiency and profitability for all actors along agricultural value chains.</li> </ul>			
<b>Program 1</b> Governance, Management & Innovation	<b>Program 2</b> National Food & Nutrition Security	<b>Program 3</b> Livestock Production for Import Substitution	<b>Program 4</b> Crop Production for Export Earnings	
<b>Sub-Program Objectives</b>				
<p>1.1 Improved organizational structure and culture that allows for innovation, efficiency, effectiveness, and stronger industry linkages to better meet the farmers’ and industry needs, and enable national goals for productivity, inclusive economic growth and food security for all.</p> <p>1.2 Enhanced contribution of agricultural research to sustainable agricultural productivity, economic growth, competitiveness, food security and poverty eradication.</p> <p>1.3 Increased and inclusive farmer access to relevant information, knowledge and technology through effective, efficient, and decentralized extension services coupled with increasing private sector involvement in line with Government policy.</p> <p>1.4 Efficient and sustainable use of agricultural land resources according to agro-ecological zones and based on participatory processes.</p> <p>1.5 Enhanced protection from the incursion and impact of plant and animal pests and diseases, and improved market access through compliance with SPS and TBT agreements.</p>	<p>2.1 Short and resilient food supply chains ensure the availability of locally produced food, improve local economic development and enhance food and nutrition security.</p> <p>2.2 Increased availability of diverse exotic and traditional horticultural crops (vegetables, fruits, nuts roots, tubers, etc.) for all improves the resilience and nutritional status of communities and contributes to positive early childhood development.</p> <p>2.3 Increased availability of locally produced meat and proteins contributes to a decrease of malnutrition in rural communities.</p> <p>2.4 Enhanced food self-sufficiency and income generation through improved rice-farming systems based on sustainable and profitable multi-cropping systems.</p> <p>2.5 Resilient and diverse farming systems coupled with preparedness for replanting and restocking ensures quick disaster recovery.</p>	<p>3.1 Enhanced animal breeding, production and animal health service capabilities coupled with improved private sector collaboration.</p> <p>3.2 Reduced beef imports through increased commercial beef production in sustainable farming systems such as silvopastoral systems.</p> <p>3.3 Reduced pork imports through increased commercial pig production in sustainable farming systems with increased percentages of locally produced stock.</p> <p>3.4 Reduced poultry imports through enhanced commercial production of broilers and layers in sustainable farming systems with increased percentages of locally produced stock feed and day old chicks.</p> <p>3.5 Increased production and processing of premium honey for export and local consumption including partnerships with poor rural communities and private sector.</p>	<p>4.1 Increased exports and domestic use of high quality copra and other coconut-derived products from sustainable coconut farming systems with increasing profit margins for farmers in collaboration with private enterprises.</p> <p>4.2 Increased exports and domestic use of high quality cocoa and its products from sustainable cocoa farming systems with increasing profit margins for farmers in collaboration with private enterprises.</p> <p>4.3 Increased and diversified exports and domestic use of well-processed high-value crops from sustainable farming systems with increasing profit margins for farmers in collaboration with private enterprises.</p>	

## 2.1. Program 1: Governance, Management & Innovation

Acknowledging the vital role the agriculture sector plays for Solomon Islands' economy and food security, the Government is committed to improve and professionalize MAL's services to create an enabling environment for the growth and sustainability of Solomon Islands Agriculture Sector.<sup>3</sup> The program specifically address the DCGA policy priorities of MAL restructuring, reform and capacity development, improved agricultural research and development, professionalization of agriculture advisory services, strengthening of biosecurity, and land use planning and management.

<b>Program 1 Governance, Management &amp; Innovation</b>		<b>Improves organizational structure and processes, creates an enabling environment for innovation and research, and provides public access to information and best practices that promote sustainable growth of the agriculture sector.</b>
<b>Sub-Program 1.1</b>	<b>Governance &amp; Organizational Development</b>	<ul style="list-style-type: none"> <li>• Improved organizational structure, transparency, efficiency, and effectiveness</li> <li>• Strengthened industry linkages to better meet the farmers' and industry needs</li> <li>• Improved technical service delivery through information technologies</li> </ul>
<b>Sub-Program 1.2</b>	<b>Research &amp; Knowledge Management</b>	<ul style="list-style-type: none"> <li>• Increased sustainable and resilient agricultural productivity, economic growth, competitiveness, food security and poverty eradication through applied, adaptive on-farm research.</li> </ul>
<b>Sub-Program 1.3</b>	<b>Agriculture &amp; Livestock Advisory Services</b>	<ul style="list-style-type: none"> <li>• Increased farmer access to relevant information, knowledge &amp; technology</li> <li>• Decentralized extension services to increase efficiency and effectiveness</li> <li>• Increased private sector involvement in line with government policy</li> </ul>
<b>Sub-Program 1.4</b>	<b>National Land Use Planning</b>	<ul style="list-style-type: none"> <li>• Efficient, sustainable and participatory use of agricultural land resources according to agro-ecological zones</li> </ul>
<b>Sub-Program 1.5</b>	<b>Biosecurity Services</b>	<ul style="list-style-type: none"> <li>• Enhanced protection from the incursion and impact of plant and animal pests and diseases.</li> <li>• Improved market access through compliance with SPS and TBT agreements</li> </ul>

<sup>3</sup> The term "agriculture" includes all agriculture sub-sectors such as livestock, crops, horticulture, apiary, etc.

## Sub-Program 1.1: Governance & Organizational Development

**Objective:** Improved organizational structure and culture that allows for innovation, efficiency, effectiveness, and stronger industry linkages to better meet the farmers' and industry needs, and enable national goals for productivity, inclusive economic growth and food security for all.



A 2013 participatory organizational review of MAL concluded that the Ministry needs to significantly improve its service orientation, efficiency, connection with agriculture related industries, focus and achievement in delivery, and use of modern approaches and systems. Despite recent efforts through MAL management and donor supported development programs (e.g. RDP I and II) only marginal improvements have been achieved. Organizational restructuring and reform will enable MAL to better fulfil its mandate and efficiently provide adequate policies, regulatory frameworks, quality assurance and technical services to improve agriculture production, marketing, as well as food and nutrition security. Activities of this sub-program will be implemented under five sub-components.

### Component 1.1.1 Agriculture Sector Governance

This component will equip MAL with an effective, efficient and transparent governance structure capable of supporting the development of a thriving and sustainable agricultural sector. Key activities include:

**Agriculture Sector Growth and Investment Plan.** Develop (ASGIP) 2020-2030 with programs aligned to the NDS 2016-2035 objectives. Seek Cabinet approval and publish ASGIP by 2021.

**Agriculture Sector Advisory Council.** Establish an inclusive and representative advisory council to oversee agriculture sector development and the implementation of ASGIP 2021-2030.

**ASGIP Implementation and Coordination.** Through new organizational structure (component 1.1.2), MAL's Department of Planning will coordinate ASGIP program/sub-program implementation through teams composed of program coordinators, sub-program managers, technical staff and focal points from various departments.

**Policy and Strategy Development.** A review of various sub-sector<sup>4</sup> policies/strategies will be undertaken to clarify their legal status, update or develop necessary new policies/strategies and approve those finalized through due process. Priorities include National Rural Land Use Policy

<sup>4</sup> These currently range from extension services, livestock, organic farming, rice, coconut, cocoa, traditional food crops, etc. to a multi-sectoral national food security, food safety and nutrition policy.

(NRLUP), National Agriculture Research Policy, Acts & Regulations, updating the National Agriculture Act to include the protection of agricultural land rights for Solomon Islands indigenous peoples and approval of the National Food Security, Food Safety and Nutrition Policy 2019 –2023.

**International Conventions.** MAL will ensure adherence to conventions to which Solomon Islands is a signatory,<sup>5</sup> and support the Government to become a signatory to the Rotterdam Convention relating to hazardous chemicals.

**Industry Working Groups.** Establish at least five groups of commodity value chain stakeholders to provide a platform for raising and addressing issues affecting value chain performance.

**Partnership Development.** Improve value chain performance through collaborative partnerships that promote transparent cost sharing models and collaboration mechanisms such as preferential technical training, co-funding through matching grants, loan guarantees, as well as subsidies and tax exemptions on the import of equipment and machinery used for research, production, processing, and marketing.

**Farmers' Organizations.** Support the development of farmers' organizations (FO), especially registered FOs and cooperatives (including Land Purchase Cooperatives), to facilitate better market linkages, allow joint ownership of productive assets, enable more efficient and targeted technical advisory services as well as better monitoring and evaluation of support mechanisms.

### **Component 1.1.2 MAL Organisational Development**

**Organizational & Functional Review.** MAL will re-examine the recommendations of the organizational development studies, agree on a new organizational and functional structure, seek Cabinet approval, and implement the new structure if given the necessary budgetary allocations. The following characteristics and capabilities are priorities:

- Stronger linkages and working relationships with agricultural industry stakeholders.
- Collaboration and linkages with regional and international stakeholders, international research stations, agencies providing training and certification, and national and international NGOs.
- Adopting a gender-sensitive value chain approach rather than a “production only approach”.
- Effective and efficient collaboration between the Agriculture Knowledge Management System (research on crops and livestock) and the Agriculture Advisory Systems (extension services for crops and livestock).
- Clear structure for planning, execution as well as monitoring and evaluation of agricultural development programs (this also refers to sub-programs, projects, etc.) as defined by the ASGIP.
- Enhanced presence of MAL in the provinces by refurbishing, equipping and higher staffing in provincial offices and sub-stations.
- Improved coordination, planning, execution, monitoring and evaluation within MAL.
- Full utilization of digital and other information and communication technologies for achieving impact.

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<sup>5</sup> Specifically, Stockholm Convention, the Basel Convention, the Waigani Convention, the Convention on Biological Diversity, and the International Plant Protection Convention.

**Organizational Change Management.** Organizational change will be managed by actively engaging senior management, middle managers and front line staff in the process, possibly through the support of a neutral change management consultant.

### **Component 1.1.3 Process Management & Accountability**

An urgently needed review and strengthening of internal processes to create an organizational culture of team-work, transparency, accountability and efficiency will include:

**Property & Asset Registry.** A dedicated asset management team will conduct a stock-take of all MAL properties and unify existing asset registers into one central asset registry. The team will put into place a robust management and monitoring system for movable and immovable assets. An audit and compliance unit will also be established.

**Property & Asset Development.** Assess each property in terms of ownership rights and develop a use plan for each property. Land and asset acquisition needs will be ranked according to strategic importance.

**Project Management.** Improve capacity for program, sub-program and project management. Skill up in project design, selection, appraisal, review, approval and implementation. Align project M&E system with MNPDC and data collection responsibilities and clarify guidelines.

### **Component 1.1.4 Human Resource Development**

MAL faces human resource challenges in terms of adequate staff numbers, technical capacity, working conditions (especially in the field offices), gender balance, and staff development opportunities. These issues require urgent attention in order to implement the ASGIP.

**Training Policy.** The training policy will support MAL human resources to match the newly emerging technical and soft skill requirements in the ASGIP, recruit male and female staff without prejudice, and develop young professionals.

**Capacity Building.** Conduct Ministry-wide training needs assessment to determine skills needed for ASGIP implementation. Develop formal and informal capacity building opportunities to create a cadre of subject matter specialists in technical areas (such as production of export and food crops, livestock, farming systems, climate change, etc.), and in ICT skills, project management, M&E, and partnership development. These specialists will work across the country in areas of strategic importance.

**Staff Welfare Assessment.** MAL will assess its current working environment, basic facilities and benefits, especially for staff stationed in the outer provinces, and implement improvement measures.

**Women and Young Graduate Engagement.** MAL will increase its female and young professional workforce, especially within the extension department, through the implementation of inclusive and non-discriminatory career advancement policies and career development opportunities.

### **Component 1.1.5 Information Technology Development**

As 4G/3G mobile phone coverage increases, MAL will improve its online presence and digital content delivery systems.

**Agri-Tech Portal.** MAL's website will host an agricultural technology portal which will serve as a "one-stop information hub" providing practical technical and policy information and guidelines to farmers and agro-industry stakeholders. The Agri-Tech Portal will contain practical information on climate smart agricultural technologies, sustainable farming systems for the various agro-ecological zones, permissible agrochemicals and integrated pest management (IPM), cost of production, government schemes and services, biosecurity information, traditional farming practices, food safety standards,

environmental information including climate change, disaster management, women in agriculture, information on farmer organizations, and agriculture related statistics amongst other topics.<sup>6</sup>

## Sub-Program 1.2: Research & Knowledge Management

**Objective:** Enhanced contribution of agricultural research to sustainable agricultural productivity, economic growth, competitiveness, food security and poverty eradication.



Solomon Islands' agriculture is characterized by low productivity and production, partly the result of the prolonged absence of a vigorous research station and its affiliated Field Experimental Stations (FES) after their destruction during the ethnic tensions. This has left the sector unsupported and without innovations, science-based advisory services, or reliable farming inputs like improved seeds, seedlings and livestock breeds. Ensuring that agriculture will remain a key economic driver of the country's economy will require significantly increased investments in research. Of paramount importance is MAL's prioritization of practical and problem-oriented research for addressing the agriculture sector's and, specifically, female and male farmers' critical needs. This will be achieved with a focus on (i) applied and adaptive research, rather than basic research, (ii) gender sensitive on-farm research and trials, rather than on-station, and (iii) inclusion of and collaboration with extension staff and Solomon Islands National University (SINU) as well as Rural Training Centres (RTC) graduates or interns.

SINU students (Masters and PhD students) as well as RTC students will receive support to enable their extensive involvement with National Agriculture Research & Development Centre (NARDC) to conduct and/or assist research activities on issues affecting agricultural sustainability, productivity and profitability of various farming systems. Priority will be given to participatory on-farm research trials, on-farm demonstrations, surveys, data collection, etc.

### **Component 1.2.1 Research Infrastructure Development**

This component will ensure that NARDC has the appropriate infrastructure and equipment in place to fulfil its mandate. Priorities for the repair of existing and construction of new infrastructure include (i) NARDC's new location (former Taiwan Agriculture Mission to Solomon Islands), (ii) establishment of new Field Experimental Stations, (iii) three laboratories (including a plant tissue culture lab, soils and plant nutrition lab, and a food-processing lab), (iv) livestock breeding farms, and (v) associated staff houses, dormitories and storage facilities.

<sup>6</sup> A very good example can be accessed through: <http://agritech.tnau.ac.in/index.html>

MAL will also rehabilitate a livestock research facility at Gozoruru on Santa Isabel Island, repair its infrastructure and yards on Government farms (Ilolo, Bunikalo, Gevala, Gonokukufo, Kakake) and expand and improve the existing Biotechnology and Plant Protection Laboratory at Henderson.

Prior to any construction or repair MAL will clarify and document land-ownership and ensure that the respective old or new FES<sup>7</sup> are in strategically important agro-ecological and service delivery zones.

### **Component 1.2.2 Plant & Animal Breeding**

**Plant Breeding & Variety Development.** Solomon Islands' high terrestrial biodiversity offers great potential for sourcing and developing climate resilient plant varieties. Taking climate resistance into account, the plant breeding, variety development and testing focus will be on key cash crops (cocoa, coconut, kava, coffee and other high value crops) as well as on strategic exotic and traditional food crops (such as sweet potato, yam, taro, cassava, fruits and nuts).

**Livestock Breeding & Selection.** The Gozoruru research facility will also act as a model farm and livestock-breeding centre for cattle, goats, and pigs and around 150 hectares of pastures will be planted and fenced. An apiary for research and breeding will also be installed. Additional livestock breeding and research capabilities will be developed at the former premises of the Livestock Development Authority. Specific crop and livestock research/breeding related activities and objectives are listed under each ASGIP program or sub-program.

### **Component 1.2.3 Agriculture Technologies & Food Safety**

NARDC will explore options to increase the resilience of farming systems through integrated crop and pest management practices as well as through organic, innovative and alternative farming systems such as improved agroforestry combinations, silvopastoral grazing systems, and the judicious use and disposal of agro-chemicals if needed. The broad activities under this component include:

**Good Agricultural Practices.** MAL and SINU, will compile and publish proven, gender-inclusive, climate-smart Good Agriculture Practices (GAP) and Good Livestock Management Practices, including production technologies, integrated pest and animal health management, pasture management and feeding practices, post-harvest practices, and simple food processing and preservation techniques.

**Technology Development.** MAL will develop and test the use of efficient, effective and sustainable technologies and farming systems that are suitable for small and medium farms. Research will explore the potential of hydroponic vegetable production, liquid sea weed fertilizer, improved cocoa drying technologies, improved post-harvest handling processes to reduce waste and loss, food processing and value adding technologies for selected crops, and improved recycling and composting techniques.

**Agrochemical Management.** Ensure that the importation, use and management of pesticides are controlled in Solomon Islands as per the most updated laws, regulations, international guidelines and codes of practices such as the ban of highly hazardous pesticides. Promotion and capacity building for the use of bio-pesticides and biocontrol in general will be supported and up-scaled.

**Integrated Crop Management.** MAL will conduct on-station and on-farm research to test and validate integrated and climate-smart crop management practices and technologies.<sup>8</sup> Research will:

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<sup>7</sup> Existing FES in various states of disrepair, are Avuavu (Guadalcanal Province, Weather Coast), Tenaru (Guadalcanal Province; abandoned during ethnic tensions in 2000), Ringi (Western Province), Ghozoruru (Isabel Province), and Newi Santa Cruz (Temotu Province).

<sup>8</sup> Examples include improved and resilient varieties adapted to local climate conditions, integrated pest and disease, soil, nutrient, and water management.

- Identify IPM practices to control commercially important pests and diseases, such as Coconut Rhinoceros Beetle, Cocoa Pod Borer, Borgia Coconut Syndrome, Giant African Snail.
- Test the use of protected cultivation (under polyhouses, net-houses, tunnels) to extend the growing season and protect crops against weather extremes.
- Identify agricultural production systems and areas threatened by climate change as well as effective adaptation and mitigation measures such as agroforestry and silvopastoral grazing systems.

**Farm Mechanization.** Explore low-cost mechanization options for land preparation, planting, harvesting, post-harvest and simple food processing operations. Of particular interest are versatile power tillers which can be used for cultivation, coconut collection, in-field and inter-village road transport, and powering other devices such as irrigation pumps or mills.

**Livestock Feed.** Conduct research and propose livestock feed formulations (especially for poultry and pigs) which are based on locally available raw material (e.g. palm oil, copra meal, fish meal, cassava, sweet potato) as much as possible. MAL will support schemes for the establishment of local mini-feed and stock feed mills.

**Pasture Management.** Conduct research to promote suitable pasture mixes and rehabilitation techniques for various grazing systems such as open pastures, grazing under coconut and other silvopastoral agroforestry systems, as well as cut & carry fodder lots for smallholder dairy cows.

#### **Component 1.2.4 Farming Systems Development**

**Organic Farming Systems.** Based on Solomon Islands Government Policy on Organic Agriculture (2010), and in collaboration with other organizations, (i) compile and describe existing regional organic best practices, (ii) design and conduct participatory on-farm trials, and (iii) promote organic farming practices in collaboration with local NGOs and other interested development partners.

**Agroforestry & Silvopasture.** Develop, trial and promote sustainable agro-forestry farming systems for crop and animal husbandry practices which sustainably increase production, conserve natural resources, and are resilient to and/or mitigate climate change.

#### **Component 1.2.5 Innovation & Knowledge Management**

**Research Networks.** Establish links with international research institutions and relevant organizations<sup>9</sup> to identify innovations, appropriate technologies and best practices, to learn about new varieties, and organize trainings in-country and abroad.

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<sup>9</sup> These may include National Agricultural Research Institute in PNG, CIAT, CIP, ACIAR, SPC, Phil Rice, IRRI, as well as networks such as the PIFON, POETCom and the Pacific Agricultural Plant Genetic Resources Network, and NGOs such as Kastom Gaden.



## Sub-Program 1.3: Agriculture & Livestock Advisory Services

**Objective:** Increased and inclusive farmer access to relevant information, knowledge and technology through effective, efficient, and decentralized extension services coupled with increasing private sector involvement in line with Government policy.



Agriculture advisory services in Solomon Islands are mainly delivered through MAL's Extension Department and, to a lesser extent, through MAL's Livestock Department. Other stakeholders such as private sector, NGOs, churches, and some development-funded projects also offer advisory services, albeit on a small scale and often using the same MAL staff. MAL's extension services outreach is severely limited by lack of mobility, facilities, equipment, staff and subject matter specialists.

Crucial improvements are needed to guide the selection and application of appropriate extension approaches and methodologies, increase numbers of female extension staff (especially to provide advisory services for female farmers), and incentivise young graduates to enter this profession. Extension staff urgently need access to training, updated information of good agricultural practices, as well as techniques and skills to increasingly use modern ICT solutions in their work. Finally, the collaboration between extension services for crops and livestock needs to be strengthened as indicated under the organizational reform process under program 1.

### Component 1.3.1 Extension Policy, Strategy & Coordination

**Extension Policy & Strategy.** MAL will review its existing Extension Policy 2018-2022 and will release an updated version as Solomon Islands Agriculture Extension Policy & Strategy 2023-2030. It will include newly emerging trends in the use of ICT in agricultural advisory services, marketing, financial services as well as new delivery structures, proposals to combine crops and livestock extension services, and create effective linkages between research, extension and the private sector.

**Extension Approach.** MAL will pursue a participatory, pluralistic, collaborative and decentralized agricultural knowledge development and extension approach. Overall coordination of agricultural advisory services will be improved to avoid duplication or conflicting advice to farmers, and delivery of services will be further decentralized with more means and responsibilities at the provincial levels. Specific emphasis will be on inclusiveness in order to reach more female farmers, young farmers, as well as farmers with special needs.

**Extension Coordination.** MAL will establish an Agriculture Technology Management Committee to (i) generate and exchange knowledge, (ii) link research with extension services and the farming

community, (iii) meaningfully coordinate extension activities of the various stakeholders to ensure high quality, technical suitability and compliance with applicable laws and regulations.

**Partnership Development.** MAL will facilitate and support the development of mutually profitable partnerships between private sector agribusinesses (service providers, traders, processors, wholesalers, exporters, etc.) and semi-commercial farmers and their FOs. The objective is to improve the overall performance of selected commodity value chains and increase farmers' productivity and income.

**Farmers Organizations.** MAL will provide capacity building and coaching to farmers on establishing and formalizing agribusiness partnerships and doing business as a group. It will also promote farmers' associations, cooperatives, community based companies or other more traditional systems building on the "wantok" tradition.

Capacity building will be offered on topics such as technical training (e.g. good agriculture practices, IPM, organic production, sustainable farming, quality issues, marketing, use of ICTs), simple financial literacy and gross-margin calculations, managing a farmers' organization (leadership, record keeping, formulation of by-laws, etc.) and other relevant topics (including gender & nutrition awareness-raising sessions).

### **Component 1.3.2 Extension Capacity Development**

**Staff Development.** MAL will update the current Extension Staff Development Plan (SDP 2017-2021) based on the training needs assessment conducted under component 1.1.4. Strategic long and short-term training opportunities will be provided to create a pool of national subject-matter specialists in the fields of apiary, artificial insemination, paravets, meat inspection, climate smart and best practices for cocoa, coconut, high value crops, highland horticulture crops, etc., as well as producer organization management, farming as a business, and farm mechanisation. Extension officers will also be trained on how to facilitate and manage producer groups, conduct video-based extension sessions and mainstream gender and social inclusion into the design and delivery of advisory services. Finally, MAL will develop and adopt an Extension Officers Career Scheme of Service.

**Monitoring & Evaluation.** MAL will train extension staff in stricter monitoring and evaluation (M&E) systems for its sub-programs. This may include improved reporting schemes, mobile phone technologies, and geographic information system (GIS) mapping.

### **Component 1.3.3 Extension Infrastructure Development**

**Extension Infrastructure.** Extension Infrastructure, machinery and tools will be assessed and, based on demand, existing infrastructure may be repaired or new infrastructure will be built or purchased. MAL will:

- Repair and upgrade MAL extension offices and storage.
- Improve or construct 2- and 3-bedroom staff housing.
- Review the status of each Agricultural Training Centre (ATC), and depending of future intended use of each centre, prioritize a repair plan and start reconstruction in 2021. An upgrade of Hakama Agriculture Training Centre to a National Agriculture Training Centre has already been prioritized.
- Upgrade ICT equipment and services.
- Improve and upgrade MAL's logistic fleet (including vehicles, motorcycles, boats, and outboard engines), especially for the outer provinces.

### **Component 1.3.4. Women Development**

Women have a key role in household food and nutrition security, but also in the production and marketing of commercial commodities. Recent studies<sup>10</sup> have highlighted frustration among women farmers related to the lack of extension support for commodities with which women are primarily engaged, for example vegetables. MAL will strengthen its capacity to support women farmers through:

**Women Agricultural Extension Services (WAES).** Re-establish and effectively resource WAES, employ more female extension staff to improve outreach to women, and provide convenient, accessible, tailor-made training for adult and young women.

**Needs-based training and support for women.** Provide training and advisory services in traditional domains (e.g. improved sup-sup gardens with nutritious crops, food processing and conservation, improved household poultry and pig production models), as well as new technical areas and skills (e.g. high value crops, climate smart practices, agribusiness activities, financial and digital literacy for the use of simple and/or smart mobile phones, marketing logistics).

### **Component 1.3.5. Youth Development**

In line with the National Youth Policy 2017–2030, MAL will increase youth engagement to establish more effective pathways from educational institutions into the agriculture sector as “future farmers” or agri-entrepreneurs and service providers. MAL will collaborate with the Ministry of Women, Youth, Children and Family Affairs, the Ministry of Commerce and Industry, NGOs, churches, and especially with the Solomon Islands Association of Rural Training Centres [the umbrella body for the Rural Training Centres (RTC)] for the provision of vocational training and skills. MAL will ensure equal opportunities for young men, women, and youth living with disabilities. Activities include:

**Youth in Agribusiness.** Support young entrepreneurs and youth groups to engage in small to medium agro-enterprises such as agro-processing (e.g. virgin coconut oil, banana and root crop chips, cassava flour, cocoa drying, nut roasting and packaging, production of wooden bee hives, honey processing and packaging, kava, noni, and other post-harvest activities) or in agro-service provision (e.g. commercial nurseries, farm mechanization and transport services, spraying services).

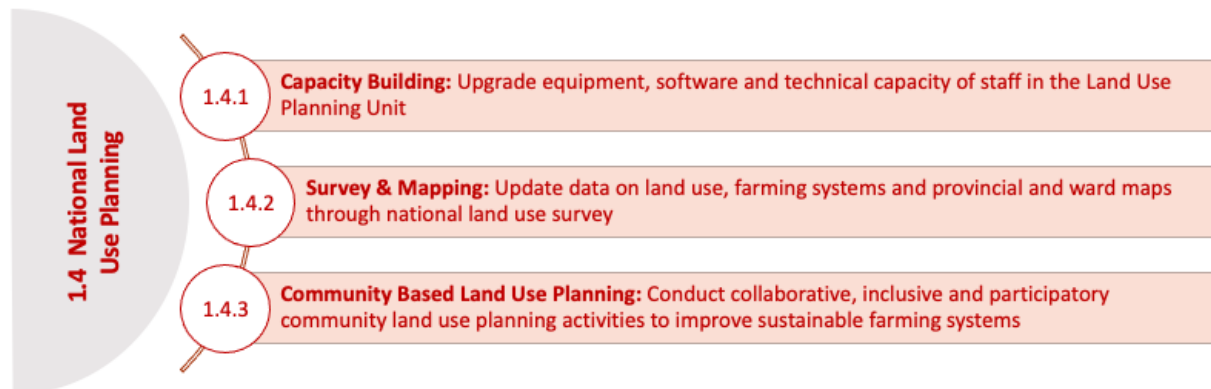
**Needs-based training and support for youth.** MAL will collaborate with partners to provide training related to youth interests. This may include internships with existing agri-entrepreneurs, specific skill training at the RTCs, and practical farm experience partnerships with public, private and non-governmental organizations to support hands on experience and learning. Support to RTC graduates with seed funding is an additional option. Young graduates from SINU, RTCs or other interested youth may also be trained in innovative ICT solutions such as the creation of short technical video-clips for community extension services.

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<sup>10</sup> Roubin, D. et al., 2018. Community Perceptions of Gender Norms and Economic Opportunity in Rural Solomon Islands

## Sub-Program 1.4: National Land Use Planning

**Objective:** Efficient and sustainable use of agricultural land resources according to agro-ecological zones and based on participatory processes.



There is an urgent need to optimise Solomon Islands' sustainable land resources development and management to meet the needs of society and improve land tenure security to attract both national and international investors. The country's NDS 2016-2035 emphasizes the importance of a land use policy and land use planning for the development of the agricultural sector.

MAL's 2015 comprehensive National Rural Land Use Policy (NRLUP) highlighted the imperative of engaging in timely, prudent and transparent land use planning to avoid depletion of natural resources (e.g. uncontrolled logging and mining activities), uncontrolled expansion of settlements into fertile agricultural land, reduction or collapse of ecosystem services, loss of biodiversity, and increased food insecurity, among other things. However, it has not yet been endorsed and launched by the Cabinet.

The DCGA Policy Statement of 2020 reiterates the urgency to update and launch the NRLUP. Since land use planning is a multi-stakeholder process Solomon Islands Government (SIG) will establish the appropriate leadership, committees and mechanism to guide the NRLUP review process.

### **Component 1.4.1 Capacity Building**

**Infrastructure & Equipment.** The Land Use Planning Unit (LUPU) will have refurbished office space, more staff, improved survey tools (e.g. GPS devices) and more ICT equipment and software to carry out its tasks of conducting surveys and producing maps. Equipment, software, and technical skills upgrades will be done in consultation with other Government agencies to ensure the potential for data information exchange and integrated planning.

**Capacity Building.** Land Use Planning Unit staff will receive technical training and skills to familiarise themselves with new hardware, plan and conduct a national survey, record the data and use the new software for creating usable maps.

### **Component 1.4.2 Survey and Mapping**

**National Survey.** MAL will work with other experts to conduct a survey to update current land use, farming systems, and agricultural potential for each Ward, and highlight endangered ecosystems and Agriculture Opportunity Areas (AOAs).

**National Mapping.** Based on the national survey data MAL will produce Provincial and Ward maps outlining the parameters listed above. These maps, containing several data sets (current land use, land use potential, vital infrastructure (shipping points, wharfs, 3G connectivity, etc.) will enable and

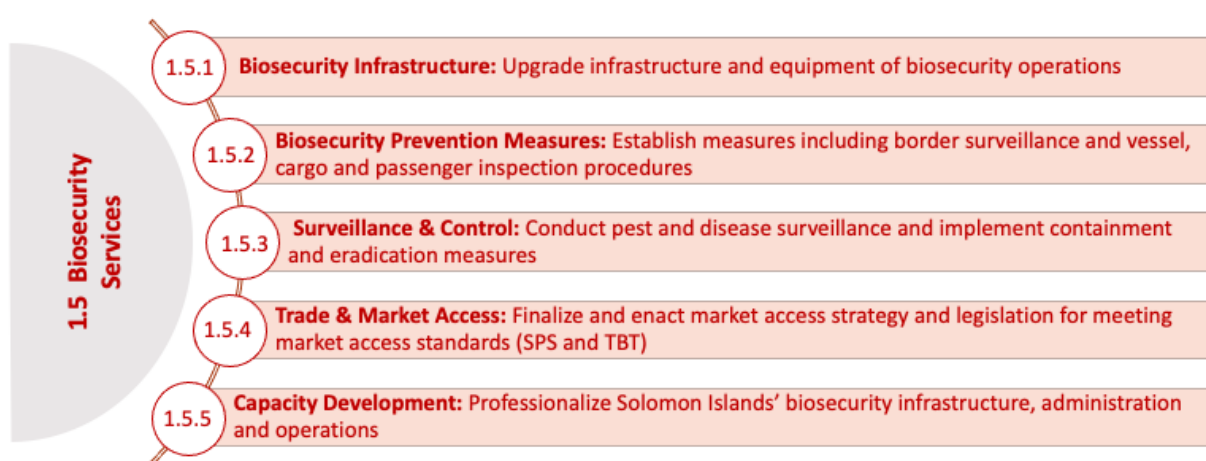
support the implementation of farmer-market linkages through private sector-farmer partnerships as well as PPPs.

### **Component 1.4.3 Community Based Land Use Planning**

The process of and the responsibility for Community Based Land Use Planning needs further clarification from the involved Government agencies. MAL will support the process by assisting communities to develop Agricultural Community Action Plans for improved and sustainable farming systems according to agro-ecological suitability.

## **Sub-Program 1.5: Biosecurity Services**

**Objective:** *Enhanced protection from the incursion and impact of plant and animal pests and diseases, and improved market access through compliance with Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT) agreements.*



Agricultural pests and diseases already pose a significant threat to Solomon Islands' economy, ability to engage in international trade, human health and the integrity of the country's biodiversity. Climate change is expected to further influence the incidence and emergence of new pests and diseases, by affecting the population size, survival rate and geographical distribution of pests; and the intensity, development and geographical distribution of diseases.<sup>11</sup> Changes in temperature can also lower the effectiveness of pesticides.<sup>12</sup>

Recent incursions of significant pests,<sup>13</sup> now established in several areas of the country, require control and, where possible, eradication. These pest incursions and immediate significant new threats,<sup>14</sup> highlight the urgent need to strengthen provincial border control and internal quarantine capacity, to upgrade facilities for container and goods inspection at Honiara's sea and airports, and develop multi-agency response plans to effectively deal with pest and disease incursions.

<sup>11</sup> <https://www.cimmyt.org/news/pests-and-diseases-and-climate-change-is-there-a-connection/>

<sup>12</sup> Delcour et al. (2015) Literature review: Impact of climate change on pesticide use. Food Research International 68:7-15 doi.org/10.1016/j.foodres.2014.09.030

<sup>13</sup> Including the Coconut Rhinoceros Beetle (*Oryctes rhinoceros*), one of the most destructive pests for coconut and oil palm, the Giant African Snail (*Lissachatina fulica*), the Yellow Crazy Ant (*Anoplolepis gracilipes*).

<sup>14</sup> Such as African Swine Fever, Cocoa Pod Borer, and New Castle Disease which is now widespread in Papua New Guinea and Bougainville.

Biosecurity Solomon Islands, MAL's lead department in charge of biosecurity measures, requires additional technical skills and adequate infrastructure in order to increase its effectiveness and meet national policy objectives related to biosecurity and trade.

MAL will strengthen its capabilities and capacities in border control, treatment, quarantine, and emergency response. This involves inspection and certification activities, quarantine risk assessment, and the implementation of other appropriate level of protection measures. This, in combination with increased pest and disease surveillance and control, will lead to increased market access and trade.

### **Component 1.5.1 Biosecurity Infrastructure**

**Infrastructure Requirements.** Considerable investments to upgrade existing and construct new technical facilities and equipment are required. These include a new biosecurity headquarters and dedicated biosecurity laboratory in Honiara, establishment of a biosecurity operations centre in Henderson, renovation of regional biosecurity offices and staff houses,<sup>15</sup> air cargo inspection facility at Honiara Airport, post entry facilities for animals and plants, incinerators, as well as fumigation and formalin treatment facilities. Improved cargo handling, inspection and container cleaning facilities at Honiara Seaport are also required. Transport vehicles including boats, out-board engines, and motorcycles also need to be upgraded.

### **Component 1.5.2 Biosecurity Prevention Measures**

**Border Control.** Conduct effective border surveillance and inspection of vessels, passengers and cargo at all ports of entry, including illegal imports.

Develop effective compliance agreements for container holding areas and quarantine technical procedures. Increase biosecurity staff's technical knowledge and skills on vessel clearance, cargo, goods and produce inspection; enforcement, compliance monitoring and prosecution of quarantine regulations; and on likely pest and disease incursions as a result of a changing climate.

Establish a national system for the prevention and management of marine pest incursions, develop biofouling management guidelines for vessels moving in domestic waters, and build capacity to conduct biofouling inspection for international vessels in Solomon Islands.

**Treatment.** Ensure the application of effective treatment and/or destruction of risk items through installation of biosecurity incinerators and fumigation facilities for Honiara, Western and Temotu Provinces. BSI's auditing capacity to monitor compliance of private fumigation and treatment operators will be strengthened.

**Quarantine.** Apply effective import risk assessment, certification and quarantine measures for imported risk items, and establish functional post entry quarantine facilities for plants and animals. MAL will draft a legislative framework that meets international biosecurity standards and supports effective implementation of biosecurity controls and measures, and will review and update the import protocols for importation of quarantine risk items.

### **Component 1.5.3 Surveillance & Control**

**Pest and Disease Surveillance.** Develop biosecurity pest and disease diagnostic capacity and conduct regular pest and disease surveillance for timely detection, reporting, containment and eradication measures. Collaborate with neighbouring countries and trading partners on offshore surveillance and regularly update the required pest and disease lists. Conduct surveys and awareness activities on identified priority quarantine threats. MAL extension staff and lead farmers will be trained on frequent

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<sup>15</sup> In Munda, Noro and Gizo, Shortland, Choiseul, and Lata.

sampling for early detection. MAL will also upscale and further professionalize its system of plant health clinics to assist farmers to detect and manage pests and diseases.<sup>16</sup>

**Pest and Disease Control.** Develop a pest/disease response including national response measures and farm-level techniques such as integrated pest management (including cultural and biological control measures). Establish specific action plans and control measures for potential high risk threats<sup>17</sup> and develop crop-specific guidelines for the application, dosages and safety protocols for using pest control products. Work with NGOs, communities and farmers to report and address encroachment of invasive species and pests in accordance with the 2013 Biosecurity Act.

#### **Component 1.5.4 Trade & Market Access**

**Improve Market Access.** Develop and implement a market access strategy that will facilitate public/private sector collaboration to identify, prioritize and coordinate the development of Solomon Islands' capacity to negotiate and meet market access standards (SPS and TBT). Include specific action plans for identified commodities and market access issues.

Establish capacity in MAL to update and maintain pest and disease lists, to negotiate biosecurity standards with trading partners, and to develop export protocols and certification systems and to access required technical information on biosecurity standards and market information. Establish capacity within private sector and MAL to conduct required pre-export treatments, and to meet quality and food safety standards and testing requirements. Establish infrastructure for specific commodities as may be required (e.g. treatment facilities, high temperature forced air, cool room storage). Enact legislation that enables Solomon Islands to meet required biosecurity and trade standards that facilitate market access.

**Pre-export Procedures.** Improve the efficiency of pre-export procedures to lower costs of compliance with export standards. Develop auditing capacity to monitor compliance of private fumigation and treatment operators and increase audit capacity to monitor compliance of export related container inspection schemes.

#### **Component 1.5.5 Capacity Development**

**Capacity Building.** Develop and implement a 10-year BSI capacity building plan to address infrastructure needs, human resource needs, and training requirements. Recruit adequate numbers of qualified human resources to secure all biosecurity operations. Identify potential sources for technical and financial assistance to further professionalize Solomon Islands' biosecurity infrastructure, administration and operations.

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<sup>16</sup> <https://solomons.gov.sb/farmers-get-agricultural-advice-on-plant-pest-disease-management/>

<sup>17</sup> Such as African Swine Fever, Coconut Rhinoceros Beetle, Borgia Coconut Syndrome, Cocoa Pod Borer, and *Banana wilt associated phytoplasma* (BWAP), Giant African Snail, Yellow Crazy Ant, etc.

## 2.2. Program 2: National Food & Nutrition Security Program

Facing the challenge of declining agricultural production, increasing dependence on an import-based food system, growing imports of highly processed food, changing dietary habits leading to non-communicable diseases, and intensifying impacts of climate change and severe weather events, SIG is committed to develop more sustainable food systems that contribute to the production of nutritious domestic food crops, vegetables and livestock for enhanced food and nutrition security, while benefiting small-scale producers.

### Program 2 National Food & Nutrition Security Program

Promotes innovative, climate smart technologies and resilient production systems to increase accessibility, availability, affordability and diversity of nutritious food for all Solomon Islanders.

#### Sub-Program 2.1

#### Sustainable Food Systems Development

- Improved food production among smallholder and commercial farmers
- Increased availability of locally produced, nutritious food

#### Sub-Program 2.2

#### Horticulture & Lokol Kaikai Promotion

- Increased production, availability and use of diverse exotic and traditional horticultural crops

#### Sub-Program 2.3

#### Village-based Pig, Poultry and Small Ruminant Farming

- Increased availability of locally produced meat and eggs as a measure to decrease malnutrition in rural communities

#### Sub-Program 2.4

#### Rice Promotion for Import Substitution

- Enhanced rice self-sufficiency through improved rice-farming systems based on sustainable and profitable multi-cropping systems

#### Sub-Program 2.5

#### Disaster Preparedness & Recovery

- Resilient and diverse farming systems established and preparedness for replanting and restocking increased.



## Sub-Program 2.1 Sustainable Food Systems Development

**Objective:** Short and efficient food supply chains ensure the resilient availability of locally produced food, improve local economic development and enhance food and nutrition security.



Short food supply chains (SFSC) aim at promoting and improving local supply chains and economic development, fostering close social relations between a limited number of producers, processors, and consumers, and minimizing negative environmental impacts (e.g. carbon footprint). SFSC are a crucial concept for developing more sustainable food systems with their potential for import substitution and self-reliance in times of crisis as well as increased value chain inclusivity and women’s economic empowerment.

### Component 2.1.1. Short food supply chains

**Supply Chains & Markets.** MAL will map food supply chains in each provincial capital and develop a strategy and action plan to optimize short food supply chains for various commodities. The performance of local supply chains will be enhanced through SIG’s development of more convenient and safe market places. Honiara Central Vendors Association and other food suppliers will be linked to farmer organizations.

**Technical Services & Inputs to SFSC.** MAL will provide technical support to farmers and their organizations to produce increased diversity of horticultural crops (including traditional food crops), fruits, roots and tubers, meat and eggs, in rural areas surrounding Honiara and provincial towns. MAL will increase the availability of quality seeds, seedlings, and small livestock restock, especially during disaster recovery, through its own operations as well as through trained lead farmers and private sector enterprises.

**SFSC Stakeholder Coordination.** MAL will initiate a dialogue with stakeholders, especially the provincial governments and municipalities in charge of urban and local markets, on establishing a multistakeholder and cross-sectoral “food council” at both national and provincial levels.

### Component 2.1.2 Reduction of Food Loss and Waste

Food loss and waste represent economic losses for all actors along food supply chains, including end consumers, and highly inefficient use of resources.

**Food Loss.** Based on research carried out under component 1.2.3, MAL will promote appropriate harvesting and post-harvest techniques, food handling and storage techniques and will encourage collaboration between communities, male and female vendors, middlemen and transporters along the value chain for use of better storage facilities, transport crates, etc. MAL will also collaborate with the concerned authorities to help determine suitable places for appropriate small decentralised road-

side markets and which of the larger markets need improved storage facilities so that vendors can store their unsold produce for at least one or two days.

**Food Waste.** MAL, in collaboration with other stakeholders represented in the “Food Council” or similar coordinating body, will explore the possibility of organic waste collection (mainly from urban market places) for composting and recycling as organic fertilizers.

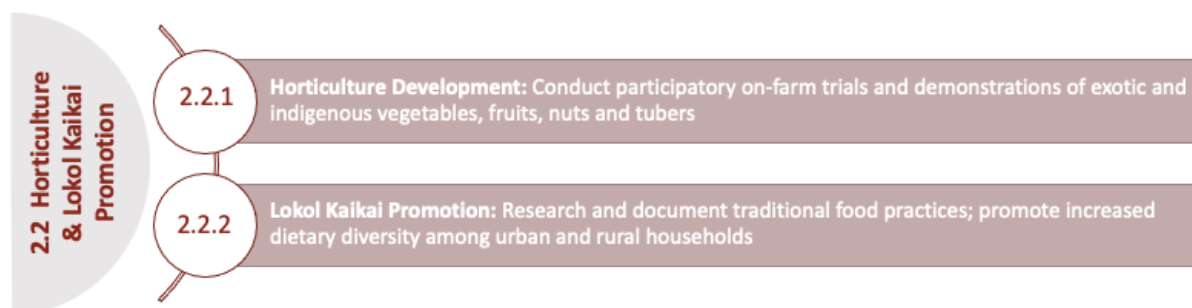
## Sub-Program 2.2: Horticulture & Lokol Kaikai Promotion

**Objective:** *Increased production and availability of diverse exotic and traditional horticultural crops (vegetables, fruits, nuts roots, tubers, etc.) improves community resilience and nutritional outcomes.*

This sub-program contributes to increased self-sufficiency with nutritious food crops such as vegetables (including roots and tubers), fruits and nuts, and involves on-farm trials for production of exotic horticultural crops, as well as research and on-farm trials on the production and processing of traditional vegetables, fruit and nut varieties as well as their *in-situ* and *ex-situ* conservation (germplasm conservation). It also involves identification of high yielding and pest/disease resistant varieties, and trials on the use of seaweed as an alternative source of organic fertilizer.

### Component 2.2.1 Horticulture Development

**Highland Vegetables.** MAL will conduct participatory on-farm trials for the promotion of exotic vegetables (e.g. tomato, sweet pepper, carrot, onion, garlic, potato, strawberry) suitable for the



highland communities of Malaita, Guadalcanal, Isabel, Choiseul and Makira provinces. Farm-trials and promotion of traditional and exotic vegetables will be guided by agro-ecological suitability, climate resilience, cost/benefit analysis, market demand and import substitution potential. Trials will involve the use of polyhouses or other protective infrastructures to extend the time of production, combat pests and diseases and protect against extreme weather events.

**Capacity Building.** MAL Extension will regularly visit and work intensively with the vegetable producer groups through Farmer Field Schools to build technical skills for commercial vegetable production.

### Component 2.2.2 Lokol Kaikai Promotion

**Documentation of Practices.** MAL will conduct a baseline survey on the cultivation of indigenous food crops (roots and tubers, vegetables, fruits and nuts) to document indigenous knowledge and practices of traditional food systems. Priority focus is on species with high nutrient values and/or high market demand, and those that have potential or importance in certain regions of the Solomon Islands (e.g. ngali nut, bread fruit, cutnut, alite, and wild mango).

**Research on Practices.** Documentation will be followed by research on traditional practices of production, post-harvest treatment and processing and the development of improved preservation, storage and processing techniques as well new product development. All activities are guided by the

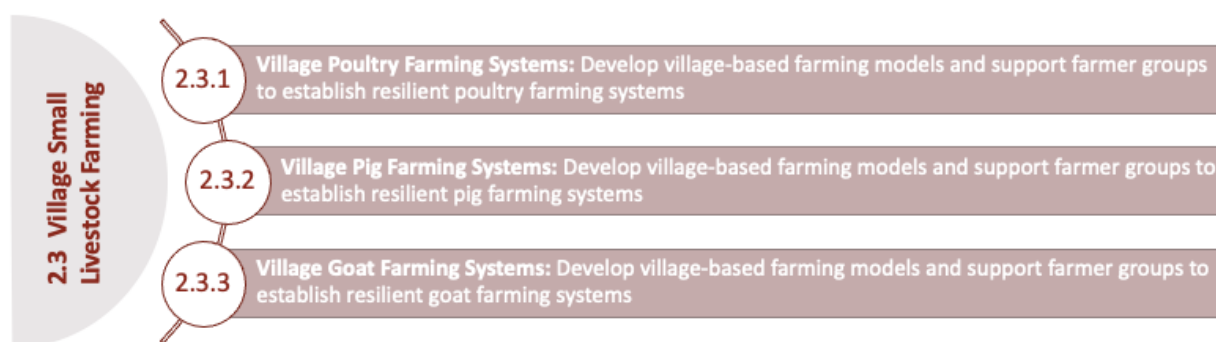
“Solomon Islands Indigenous Fruit and Nut Industry Policies and Strategies 2014–2020” and the “Kaikaim Lokol Kaikai Framework for Action”.

**Conservation, Multiplication & Distribution.** Both *in-situ* and *ex-situ* methods will be used in the conservation and documentation of indigenous food crops’ genetic resources. Seed or seedlings of suitable and improved varieties, including those traditional varieties that have demonstrated climate resilience, will be made available to farmers through the Field Experimental Stations.

**Promotion and Training.** MAL will organize training courses on the cultivation, usage, and nutritional value of traditional food crops. These will include cooking events and presentation of improved food preservation techniques. MAL will initiate the establishment of model farms and/or sup-sup home gardens, containing traditional food crops and, in collaboration with Ministry of Health and Medical Services (MHMS), will support improved school farms and food and nutrition programs in schools.

### Sub-Program 2.3: Village-based Pig, Poultry and Small Ruminant Farming

**Objective:** Increased availability of locally produced meat and eggs significantly contributes to a decrease in malnutrition in rural communities.



By and large, village livestock farming relies on local small livestock species that are used mainly for subsistence farming. These low-input farming systems are differentiated from the commercial model and cross-cutting issues implemented under Program 3: National Livestock Development Program.

A central approach of this sub-program for poultry, pig and goat farming will support farmers to develop producer units, promote community collaboration to select and train lead farmers in strategic areas (especially those affected by malnutrition) and support the establishment of his/her model farm.

#### **Component 2.3.1 Village Poultry Farming Systems**

**Productivity Enhancement.** MAL will improve village poultry systems (chicken and duck) through appropriate feeding and husbandry practices, technical advice to improve productivity and reduce losses, and supporting farmers and their organizations with materials, tools and equipment. This may include the establishment of mini-feed mills for stock feed production.

**Breed Conservation & Improvement.** MAL will support the maintenance of local breeds of germplasm of different phenotypes for breed development as well as multiplication and distribution to farmers. Selection and breeding may be conducted by Department of Livestock and Veterinary Services (DLVS) in collaboration with NARDC at the FES, or support may be given to suitable operators who are willing to work in collaboration with DLVS towards village chicken improvement.

### Component 2.3.2 Village Pig Farming Systems

**Productivity Enhancement.** Support for improving the village pig farming system will focus on improved management practices and technical advice on suitable feeding and husbandry techniques. The cost of and sometimes the availability of imported livestock feed are major constraints in livestock production. Feed accounts for 65 to 75 per cent of any livestock operation costs especially for pigs and poultry. Producing livestock feed provides an opportunity for circular economy by using by-products such as copra meal, fishmeal, millrun, palm oil meal, coconut, perhaps peelings from cassava, pineapples, wasted fruits and vegetables, grains such as sorghum, and pigeon peas.

**Breed Conservation & Improvement.** Through NARDC, MAL will use artificial insemination to upgrade, increase production of and disseminate improved genetic pigs (cross-breeds of local and exotic breeds). MAL will initiate conservation of the genetic resources of the local native pig on-station and/or support selected farmers of village pig farming systems to become breeders and distributors.

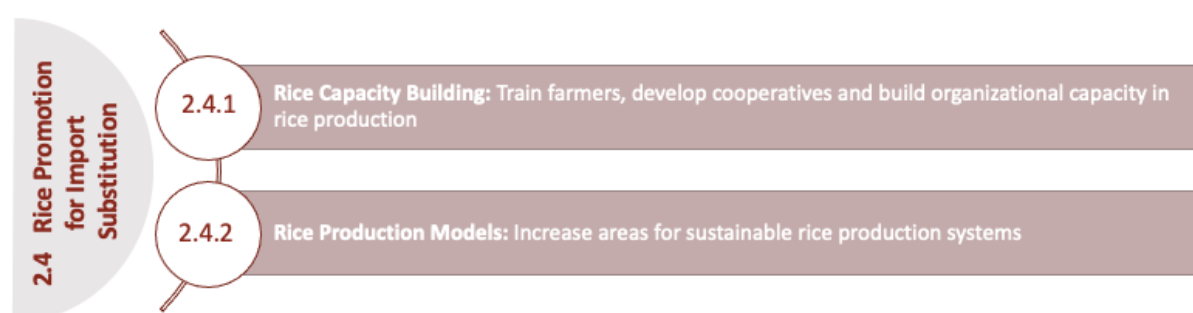
### Component 2.3.3 Village Goat Farming Systems

**Productivity Enhancement.** Controlled goat production offers a viable alternative to cattle farming to replace imported meat, and improve household and livelihoods. MAL will explore and promote the best options for sustainable goat rearing systems considering that (i) functioning veterinary services for management of gastrointestinal nematodes (GIN) are crucial,<sup>18</sup> (ii) feed gaps can be bridged by additional fodder crops, and (iii) goats are not negatively impacting the environment.

**Breed Conservation & Improvement.** MAL will establish a breeding herd at one of the livestock research centres, where it will improve the genetics of selected goats and assess options for artificial insemination. MAL will pursue a strategy of nucleus and multiplier farms to increase and distribute these improved bloodlines to goat farmers. Collaboration with Fiji, Vanuatu and Samoa will be sought to explore the best options for breeding and feeding.

## Sub-Program 2.4: Rice Promotion

**Objective:** *Enhanced food self-sufficiency and income generation through improved rice farming and sustainable, profitable multi-cropping systems.*



Rice production has been a policy priority since the early 1960s, out of concerns of foreign exchange leakages and food security vulnerability. Unsuccessful efforts to boost domestic rice production can partially be explained by the scarcity of suitable land resources, the high cost of production, as well as poor access to infrastructure and services.

<sup>18</sup> ACIAR, 2019. Assessment of markets and production constraints to small ruminant farming in the Pacific island countries

This component will explore SIG’s desire to increase domestic rice production by (i) conducting a comprehensive study on the comparative advantage of rice and other staple foods in Solomon Islands, (ii) quantifying the availability of suitable land, (iii) reviewing technologies and capacities, and (iv) exploring viability of various production systems.

### **Component 2.4.1 Rice Capacity Building**

**Database, Profitability and Support Schemes.** MAL will assess how many hectares of suitable rice land are available, update its rice database- assessing the current production area and yield gap, and elicit the most promising farming systems based on cost/benefit assessment. MAL will assess budget required for rice support schemes and for targeted infrastructure and machinery support.

**Research Linkages and Skills Development.** Links will be established with relevant international development partners to identify appropriate technologies, varieties, and organize trainings. Where viable, technical skills may developed for rice farming communities.

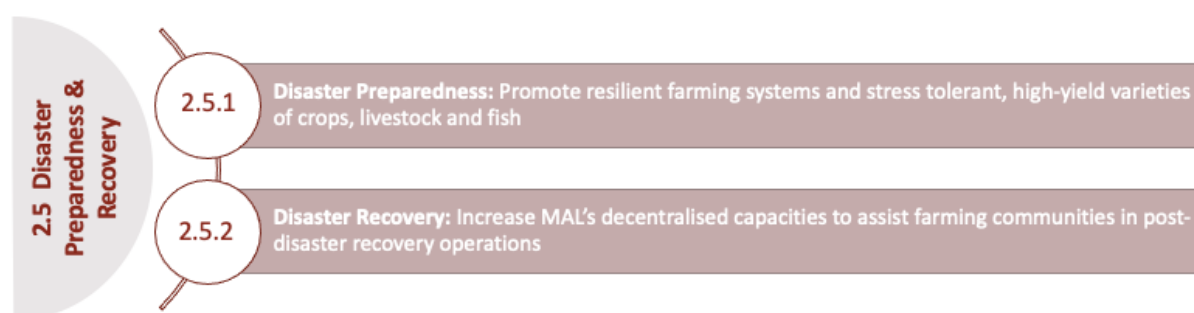
### **Component 2.4.2 Rice Production Models**

**Large Production Models.** MAL will explore collaborative arrangements and partnerships that can increase profitability through economies of scale and mechanization. This may include establishing larger rice growing schemes, owned and managed by tribal groups, farmers' cooperatives or associations, or outgrower schemes (similar to GPPOL oil palm outgrower scheme) in the form of productive partnerships or PPPs.

**Smallholder Production Models.** MAL will research and promote successful smallholder options for rice production. These systems will be based on multi-cropping, whereby high value crops (e.g. vegetables) and also legumes (either for food, feed, or green manure) will be planted as a second or third crop. Such options, depending on labour availability, are also suitable for the System of Rice Intensification to increase yields per area.

## **Sub-Program 2.5: Disaster Preparedness & Recovery**

**Objective:** *Resilient and diverse farming systems coupled with preparedness for replanting and restocking ensures quick disaster recovery.*



Solomon Islands, as other Pacific islands countries, is highly exposed to a range of natural hazards of hydro-meteorological origin (such as cyclones, droughts, landslides and floods) and geological origin (including volcanic eruptions, earthquakes and tsunamis). These hazards often lead to disasters, which affect thousands of people and exacerbate existing development challenges in the region. Climate change is increasing the risks from weather related disasters and posing progressive long-term degradation to the natural environment, to critical ecosystems (e.g. coral reefs), and to social and

economic systems, resulting in loss and damage to the system upon which communities depend for their subsistence and livelihoods.<sup>19</sup>

Guided by the NDS Objective Four (“Resilient and environmentally sustainable development with effective disaster risk management, response and recovery”) and the National Disaster Management Plan 2018, this sub-program emphasizes disaster preparedness and mitigation as well as capacity to deliver seeds, seedlings, and small livestock restock options for swift recovery operations.

### **Component 2.5.1 Disaster Preparedness**

The activities under component 2.5.1, below, will be implemented under other components, and have already been broadly described under their respective sub-programs. Their specific contribution to disaster preparedness is explained below.

**Pests and diseases.** Safeguarding against pests and diseases is under the responsibility of MAL’s Department for Biosecurity and applicable measures are explained in detail under sub-program 1.5 (Biosecurity Services). Early detection through regular interaction between MAL staff and the farming community through plant health clinics is of critical importance in this respect.

**Resilient Farming Systems.** Research and promotion of resilient farming systems is implemented under sub-program 1.2 (Research & Knowledge Management) and sub-program 1.3 (Agricultural Advisory Services). Research will consider resilient and sustainable farming systems, such as alley cropping and contour farming; and resilient farming practices and techniques, such as mulching, crop rotations, cover cropping and composting. Existing research on soil fertility improvement will be evaluated to identify practices that are appropriate and easily adopted by farmers. Solutions that reduce soil erosion and carbon loss and that improve farm profitability will also be explored.

**Traditional Food Crops.** For increasing food and nutrition security, especially also in times of disaster and recovery operations, MAL will research and promote traditional food systems as described under sub-program 2.2 (Horticulture and Lokol Kaika Promotion). This includes building on cultural and traditional resilience and knowledge of communities including their farming systems, food processing and food storage techniques. Diversification of food crops and varieties, also addressed under sub-program 2.2 will contribute to enhancing the resilience of the overall food system.

**Resilient Food Systems.** The approach and logic of creating resilient food systems through short supply chains is elaborated in sub-program 2.1 (Sustainable Food Systems Development). Its importance has been highlighted again in the recent COVID-19 pandemic when food and other input supply chains were severely affected and put import dependant economies at risk.

**Risk Prone Areas.** MAL’s land-use mapping activity (sub-program 1.4) will rank agricultural areas exposed to risks and, where possible, will propose suitable land-uses for those areas.

### **Component 2.5.2 Disaster Recovery**

**Replanting and Restocking.** In decentralised provinces, MAL will increase its infrastructure and strengthen capacities and preparedness for assisting farmers to replant and restock to accelerate post-disaster recovery operations. Operational FES and RTCs (for seedling production and input distribution), and well equipped Provincial Extension Offices/Sub-Stations (mobility, communication), will play a crucial role in recovery operations. Response capacity could be further optimized by combining crops and livestock extension services under one roof.

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<sup>19</sup> Framework for Resilient Development in the Pacific - An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017-2030.

## 2.3. Program 3: National Livestock Development Program

This program addresses multiple challenges facing the livestock sector including lack of productive infrastructure, neglected and under-grazed pastures, limited access to feed, need for improved livestock species, limited technical advisory services and veterinarians, unknown disease status, inadequate access to farmland, high provincial as well as inter-island transport costs, lack of slaughter facilities and rising amounts of low-cost meat imports, that domestic producers compete with.

### Program 3 National Livestock Development Program

Enhances livestock productivity through improved breeds, veterinary and technical advisory services, and promotion of environmentally sustainable farming systems for small-holder and commercial-scale livestock development.

#### Sub-Program 3.1 Livestock Services Development

- Enhanced animal breeding, production and animal health service capabilities
- Improved private sector collaboration in the livestock sector

#### Sub-Program 3.2 Cattle Industry Development

- Increased sustainable commercial beef production systems
- Reduced beef imports through increased domestic production for the urban beef demand

#### Sub-Program 3.3 Pig Industry Development

- Increased supplies of locally produced pork reduce imports and cater for the urban pork demand.
- Increased availability of locally produced good quality breeding stock

#### Sub-Program 3.4 Poultry Industry Development

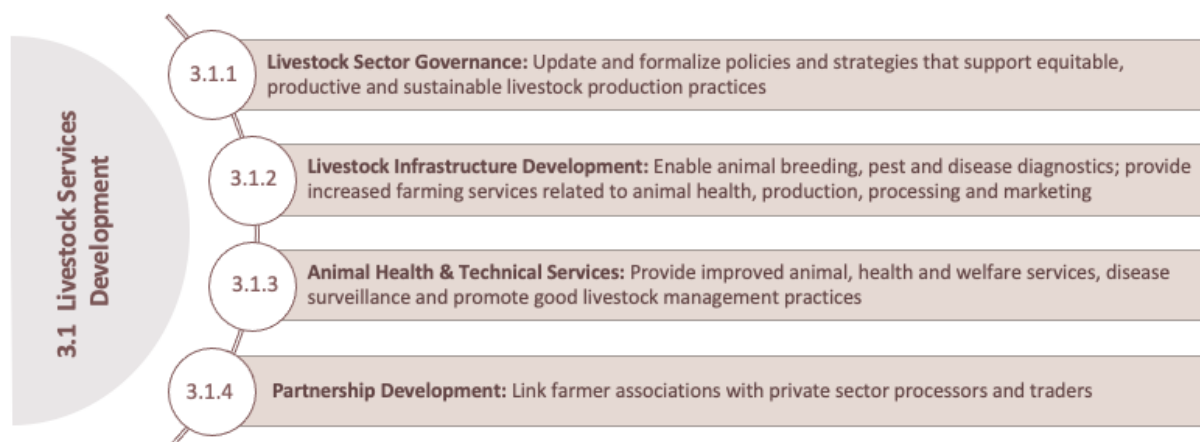
- Increased supplies of locally produced chicken meat and eggs reduce imports and cater for the urban demand.
- Increased supply of locally produced one-day-old chick for the poultry industry

#### Sub-Program 3.5 Honey Industry Development

- Increased production and processing of premium honey for export and local consumption
- Partnerships between bee-keepers, traders and processors established

### Sub-Program 3.1 Livestock Services Development

**Objective:** Enhanced animal breeding, production and animal health service capabilities coupled with improved private sector collaboration.



MAL's first priority in re-establishing a prosperous livestock sector is creating an enabling environment for the sector's development through better availability of data, increased infrastructural, analytical and technical capabilities, and transparent and collaborative governance mechanisms with concerned stakeholders of the livestock industry. MAL will carry out a thorough review of the sector and its policy and strategy, conduct an animal health survey, create a livestock data base, and make urgently needed investments in breeding farms, veterinary laboratories, and MAL human resources.

### **Component 3.1.1 Livestock Sector Governance**

**Livestock Sector Review.** Conduct a thorough review of (i) delivery systems for livestock development activities, particularly increasing local production for import substitution, (ii) take stock of existing commercial operations, and (iii) quantify the number of herds still under state control. Compile a comprehensive livestock sector review report from the findings, including a meaningful integration of cross-cutting themes, such as gender equality and youth empowerment.

**Livestock Policy Review.** Review and extend the existing Agriculture and Livestock Sector Policy and Strategy (2015-2019) until 2025, and align its strategies to the MAL NDS mandates and the DCGA key policies and priorities. Any modifications should be in line with the National Climate Change Policy (NCCP), the National Adaptation Programmes of Action (NAPA) and Solomon Islands Intended Nationally Determined Contribution (NDC). Review and amend the Livestock Development Authority Act as per arising needs. Review the Law of Solomon Islands, Chapter 37, Diseases of Animals (1996 edition); Honey Bee Act; and the Pure Food Act.

**Animal Health Survey.** Organize and implement a structured field survey on animal health and disease status; develop risk analysis and surveillance systems for effective risk communication and response. Map farm and heard locations and numbers for surveillance and monitoring purposes; maintain a register of all commercial operations.

**Livestock Sector Database.** Establish a database of the cattle, pig, poultry, goat and beekeepers, identifying locations of medium to large-scale producers, production practices, production volumes, and marketing arrangements. A data base on import volumes versus domestic consumption is also needed.

**Biosecurity & Registration.** Map and register all commercial and semi-commercial livestock farms for biosecurity reasons. Implementation of biosecurity measures prescribed by the state veterinary service will be mandatory.

**OIE Membership.** Initiate and finalize the process of becoming a member of the World Organisation for Animal Health (OIE).

### **Component 3.1.2 Livestock Infrastructure Development**

**National Veterinary Laboratory.** Establish a national veterinary laboratory for the identification, prevention, control and containment of animal diseases and appoint specialist laboratory staff to undertake routine testing to support disease surveillance activities. Establish or upgrade animal health facilities including laboratories in key locations.

**Revitalization of MAL Livestock Farms.** Rehabilitated Government farms<sup>20</sup> (described under component 1.2.2) will be used for breeding and multiplication to support commercial beef development. The farms' pastures, yards and cattle infrastructure will also be improved (component 1.2.3 & 1.2.1). MAL will improve and stabilize the herds using disease-free cows with suitable genetic

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<sup>20</sup> In Ilolo, Bunikalo, Gevala, Gonokukufo, Kakake



characteristics (both locally sourced and imported) and artificial insemination. A breeding program for the Solomon Islands breed will be started. Weaners of improved breeds will be distributed to other Government farms and will be available for farmers. Trained artificial insemination specialists (component 1.3.2) will practise in Government livestock farms and provide services to farmers.

**Livestock & Veterinary Services Offices.** Construct or rehabilitate and furnish provincial livestock & veterinary services offices. Wherever possible these offices should be housed in the same building as the Agriculture Extension Service Offices to economize costs and support collaboration and efficient use of equipment and transport capabilities. Most farms operate mixed farming systems making the combination of livestock and crops services more efficient and effective.

**Slaughtering Infrastructure.** Develop domestic scale abattoirs, mini-slaughterhouses, and meat processing facilities (and establish related power sources) around the country to improve meat market facilities and outlets for farmers and their organizations. Options for private sector operations, PPPs or Government operated abattoirs, as well as the suitability of “mini-abattoirs” in rural but densely populated areas will be explored. Feasibility studies for abattoirs and mini-abattoirs will be conducted before construction.

### **Component 3.1.3 Animal Health & Technical Services**

**Advisory Services.** At least two veterinarian and two meat inspector positions will be established. MAL will formulate a needs-based technical and veterinary training program for DLVS staff. Train additional paravets and meat inspectors in collaboration with international partners (e.g. SPC, Fiji Veterinary School, or Australia). Ensure that female farmers also have access to female paravets or veterinarians. MAL will also hire animal welfare officers, and operations staff for the animal health laboratory and Gozoruru Livestock Research Station.

**Good Livestock Practices.** Compile and promote Good Livestock Management Practices for cattle, pigs, poultry, goats, and honey bees (which detail climate smart practices), especially for village livestock farming systems and small to medium scale commercial operators; publish these guidelines in the Agri-Tech portal (component 1.1.5). Good practices will include measures to increase animal welfare, biosecurity considerations, vaccination requirements, rational use of antimicrobial drugs, feeding practices, pasture establishment and management, cultivation of fodder crops, etc. Collaborate with Vanuatu and other Pacific island countries to source research findings, technology, extension materials, and training packages to accelerate the professionalization of MAL’s advisory services.

**Fodder Crop Production.** Besides open pasture, rotational paddock grazing, and silvopastoral grazing systems (integrated animal and tree cropping systems; cattle under coconut) cultivation of selected fodder crops (grasses and legumes) and trees<sup>21</sup> will be promoted and supported to increase productivity and counter the cost of imported feed.

**Livestock Farming Inputs.** Support local manufacturers and distributors of farm inputs including hive materials, hive tools, processing equipment and protective gear, agricultural machinery, fencing material, drugs and dressings, and other livestock and veterinary tools and equipment. Explore possibilities for duty exemptions for registered official suppliers of these items.

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<sup>21</sup> Examples of fodder trees fed or browsed by ruminants in the region include *Leucaena leucocephala*, *Gliricidia* (*Gliricidia sepium*), *Sesbania* (*Sesbania grandiflora*), *Erythrina* spp. (dadap or drala), *Calliandra* (*Calliandra calothyrsus*), *Moringa oleifera* (drumstick tree' or 'horseradish tree). Creeping legumes include *Centro* (*Centrosema pubescens*), *Hetero* (*Desmodium heterophyllum*), *Mimosa* (*Mimosa pudica*), *Puero* (*Pueraria phaseoloides*), *Siratro* (*Macroptilium atropurpureum*). Common grasses include *Koronivia* (*Brachiaria humidicola*), *Signal* (*Brachiaria decumbens*), *Para* (*Brachiaria mutica*), *Batiki* (*Ischaemum aristatum*) and *Guinea grass* (*Megathyrsus maximus*).

Currently there are no commercial stock feed mills in the Solomon Islands and industrial feed must be imported. Industrial feed can reach up to 70 per cent of the cost of poultry or pork production, thus making it difficult for locally produced meat to compete with relatively low priced imports. However, there is an opportunity to formulate industrial feed using as much as possible local products and by-products (e.g. palm oil, copra meal, fish meal, cassava). The establishment of small- to medium-sized feed mills close to major production areas, or the establishment of community based mini-feed mills like the ones sold in Lae, Papua New Guinea (PNG), in strategic provincial production areas, can support the livestock industry by lowering the production costs. Feed should be produced according to Good Manufacturing Practices (GMP) and Truth in Nutrition Labelling and should be regulated by Government.

**Livestock Business Models.** Develop livestock production models for various types of livestock (cattle, dairy cows, pigs, poultry) for smallholder farmers and medium sized production units. The models will include a cost/benefit (gross margin) analysis to establish their profitability and facilitate access to finance. Business models for further processing and marketing should be developed by Ministry of Commerce, Industry, Labour and Immigration (MCILI) in collaboration with livestock industry stakeholders, especially shipping lines, transporters, butchers and meat outlets.

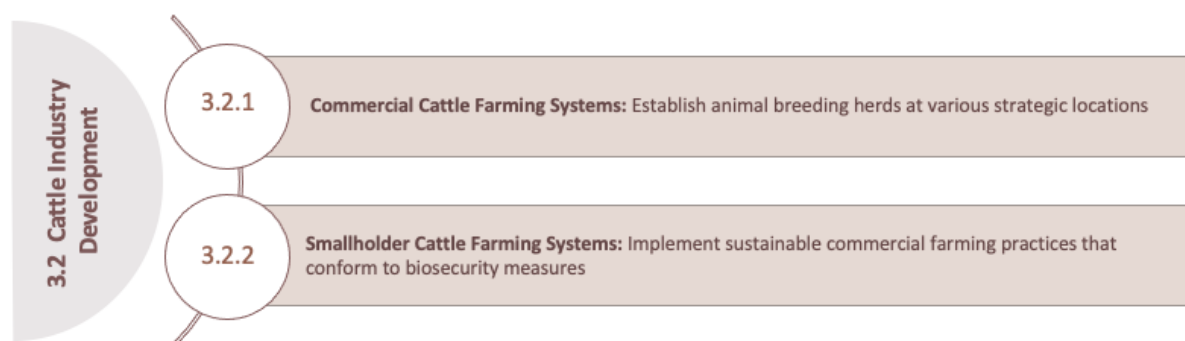
### **Component 3.1.4 Partnership Development**

**Partnership Development.** Improve livestock sector performance through various models of mutually beneficial collaborative partnerships<sup>22</sup> that link willing farmers and their organizations from rural areas to private sector entrepreneurs and/or other stakeholders along the value chain. Partnerships will build on the success of past experiences<sup>23</sup> to devise appropriate and transparent cost sharing models and collaboration mechanisms. These may include preferential technical training, co-funding through matching grants, loan guarantees, as well as subsidies and tax exemptions on machinery and materials needed for livestock production or processing, stock-feed production (feed mills) and similar activities that are in the interest of the public as well as private sector.

**Livestock Associations.** Support livestock farmers to form viable and trusted associations, cooperatives or other formalized groups to enable their participation in policy discussions, Industry Working Groups, and strengthen their market access and negotiation power.

## **Sub-Program 3.2 Cattle Industry Development**

**Objective:** *Reduced beef imports through increased commercial beef production in sustainable farming systems such as silvopastoral systems.*



<sup>22</sup> Public Private Partnerships, Productive Partnerships, Networking Arrangements, etc. with public agencies, non-governmental organizations, and private entrepreneurs

<sup>23</sup> Such as the Rural Development Program I and II

Large-scale infrastructure destruction and animal slaughter during the ethnic tensions has greatly affected progress in beef production. The demand for beef remains high, yet only small amounts of beef and dairy cattle are left, leading to steadily increasing beef imports.<sup>24</sup> This sub-program aims at developing the cattle sector to increase import substitution and its contribution to food and nutrition security. MAL's two-pronged approach will target commercial producers in the first phase and small- to medium-sized farm holdings in the second phase.

### **Component 3.2.1 Commercial Cattle Farming Systems**

The first phase will expand the commercial beef sector through collaboration with livestock associations and the private sector, either through Public Private Partnership (PPP) or Productive Partnership arrangements. Initial support of commercial cattle holdings will focus on Guadalcanal, Malaita and Western Province, taking into account pasture resources, available land, remnants of the former cattle industry, proximity to urban centres and markets, and state of repair of existing infrastructure.

**Live Cattle Import.** Facilitate new and finalize ongoing importation of live animals from other countries (e.g. Fiji, Vanuatu) in collaboration with the Biosecurity Department.

**Herd Restocking.** Government breeding and multiplication farms, in collaboration with livestock associations, will agree on the terms of restocking the commercial cattle farms in three initial provinces (Guadalcanal, Malaita and Western). The eligibility to receive animals from breeding and multiplication farms will depend on the readiness of the receiving cattle farmer (see component 3.1.3). Lessons learnt from the previous "Cows under Trees Project (1976 to 1987)" will be taken into account to establish those farming systems. Consideration will be given to climate tolerance of different breeds. *Bos ndicus* breeds tend to tolerate heat and drought and can better manage low quality forage than the *Bos Taurus* breeds.<sup>25</sup>

### **Component 3.2.2 Smallholder Cattle Farming Systems**

The second phase supports small- to medium-scale cattle systems located near commercial producers in economic areas close to markets.

**Smallholder Cattle Farming.** Smallholders' access to needed know-how, inputs, veterinary and breeding services, and markets will be improved by leveraging the capacities of established nearby commercial enterprises or Government farms. MAL will support the use of sustainable farming systems including cattle under coconut and other forms of silvopastoral agroforestry systems.

**Smallholder Dairy Farming.** As under the smallholder cattle improvement, smallholder dairy cow husbandry can be promoted alongside beef or dairy cattle areas with access to veterinarian services; this may also involve techniques like tethering of animals and cut & carry systems, whereby farmers grow nutritious fodder grasses and carry the fodder to their stable.

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<sup>24</sup> With an import value of close to 3.0 million USD, beef is now in second place after poultry meat.

<sup>25</sup> Lisson et al (2016) Vulnerability of livestock to climate change. In: Vulnerability of Pacific Island agriculture and forestry to climate change, Taylor, McGregor, Dawson (Eds). SPC, Noumea <http://www.fao.org/family-farming/detail/en/c/432913/>

## Sub-Program 3.3 Pig Industry Development

**Objective:** Reduced pork imports through increased commercial pig production in sustainable farming systems with increased percentages of locally produced stock.



The pig industry, including local and exotic breeds, has good growth potential because of the rising consumption of pork and its traditional use during custom feasts, weddings, and holidays.

This sub-program supports the development of small-scale commercial pig farmers operating in Honiara, Auki and Gizo to increase supplies of locally produced pork. Village pig production is supported under sub-program 2.3 (Village-based Pig, Poultry and Small Ruminant Farming).

### Component 3.3.1 Commercial Pig Farming

**Scaling-up Production.** Commercial pig enterprises and their farmer organizations in Honiara and provincial centres will be supported through PPP arrangements. Priority for PPPs will be given to commercial enterprises that establish outgrowers systems, provided they operate according to required regulations. Instruments to support such enterprises include temporary tax exemptions for breeding stock, equipment, machinery (e.g. feed mills) and feed. MAL will also support better housing and pig pen design to improve animal health and welfare.

### Component 3.3.2 Commercial Breeding

**Parent Breeding Stock.** Assist and train successful farmers to become breeders who will keep quality parent stocks and sell piglets to commercial producers. The breeding farms will use strict biosecurity measures, including stable sanitization between production batches.

## Sub-Program 3.4 Poultry Industry Development

**Objective:** Reduced poultry imports through enhanced commercial production of broilers and layers in sustainable farming systems with increased percentages of locally produced stock feed and day old chicks.



The poultry industry is vital for the country and has enormous growth potential. Rising consumption of poultry<sup>26</sup> contributes to an already lucrative market for poultry meat and table eggs in Honiara and the main provincial centres.

This sub-program supports small-scale (50-100 birds, broilers or layers) commercial poultry farmers and hatcheries operating around Honiara, Auki and Gizo. Village poultry production is supported under sub-program 2.3 (Village-based Pig, Poultry and Small Ruminant Farming).

### **Component 3.4.1 Commercial Poultry Farming**

**Scaling-up Production.** Support to commercial poultry enterprises and the Solomon Poultry Association will be in the form of PPPs, prioritizing those that establish outgrower systems. Instruments to support such enterprises include tax exemptions for breeding stock, equipment, machinery (e.g. mini feed mills) and feed which will be used directly in the production of chicken meat or table eggs. MAL may also help secure suitable land areas for intensive operations and provide technical support to enterprises that do not have their own technical staff.

### **Component 3.4.2 Commercial Hatcheries**

**Commercial Hatcheries.** PPPs will also support the establishment or enlargement of private hatcheries and processing facilities to reduce imports of fertilized eggs.

## **Sub-Program 3.5 Honey Industry Development**

**Objective:** *Increased production and processing of premium honey for export and local consumption including partnerships with poor rural communities and private sector.*



Honey has a great potential for enhancing rural livelihoods, increasing export earnings and contributing to the local market. Honey production is also prioritized under the DCGA Policy's agricultural commercialization agenda. The sector faces some important challenges stemming from the near decimation of the European Honey Bee by the Asian Honey Bee (*apis cerana*). Of the approximately 2000 hives that existed on Guadalcanal Island and Savo Islands in 2000, less than 5 were estimated to still remain in 2008. Although the number of hives was drastically reduced, the sector is picking-up again and there is an opportunity to increase its performance.

In 2004, a Commonwealth Scientific and Industrial Research Organisation assessment concluded that the Asian honey bee (i) was established and could not be eradicated, (ii) had introduced the *Varroa jacobsoni* with it, and (iii) was causing major losses to the European honey bee colonies and their honey yields.

<sup>26</sup> Imports of poultry meat is topping the charts with an import value of 12.7 million USD in 2018.

Rebuilding the industry will require training MAL staff in advanced beekeeping knowledge and skills and increasing biosecurity measures and training to limit the spread of Asian honeybees and Varroa mites.

### **Component 3.5.1 Beekeeping Research & Advisory Services.**

**Beekeeping Research.** Establish and operationalize a beekeeping research lab and apiary at the Gozoruru Livestock Research Station. Conduct genetic improvement of existing bee populations using artificial or natural breeding with both imported and existing queen bees, and multiply beehives for distribution to farmers. Bee nucs from Ulawa and Western province will be purchased and queened, then distributed to high production areas in Choiseul, Malaita and Renbel provinces.

**Advisory Services.** MAL will recruit additional staff with extensive beekeeping and honey processing knowledge and skills to deliver the honey development program. Existing staff will be trained in bee keeping, related diseases and biosecurity issues at expert institutions. Technical advice, information sharing and coordination between and among farmers, private sector, and MAL information services, will be promoted through practical farmer field school training sessions, smart phone apps and similar technologies. Best practices in beekeeping, especially in managing pests and diseases, and basic honey processing will be identified, documented, promoted and shared on the Agri-Tech portal.

### **Component 3.5.2 Production Inputs & Processing**

**Beekeeping Inputs.** MAL will provide tailor-made support for (i) existing commercial producers in areas known for high quality honey (Renbel, Choiseul, and Malaita provinces) and (ii) for subsistence or semi-commercial producers from poor or disadvantaged communities living in rural areas suitable for beekeeping. Both groups will receive support on accessing hives, tools, equipment, and training for starting or professionalizing honey production. MAL will also promote and support local production, especially by youth groups, of beekeeping materials such as Top Bar and Langstroth Hives and their frames according to MAL standards and measurement.

**Honey Processing.** Consider and negotiate import tax exemptions on beekeeping and honey processing equipment not manufactured locally, to enhance the local honey processing capacities. This may involve equipment such as honey extractors, honey tanks with filters and equipment for testing honey quality.

### **Component 3.5.3 Organizational Development & Marketing**

**Beekeeper Associations.** MAL will assist beekeepers to establish beekeeper associations or cooperatives, through trainings in organization building as well as in technical matters such as production, processing, storing and marketing. MAL will also facilitate linkages between bee-keeper associations and private sector processors, traders and exporters as well as with development and research partners.

**Food Safety & Quality.** Following international guidelines, MAL will collaborate with the private sector as well as with national and international experts on establishing simple quality assurance facilities to monitor the quality of processed and bottled honey.

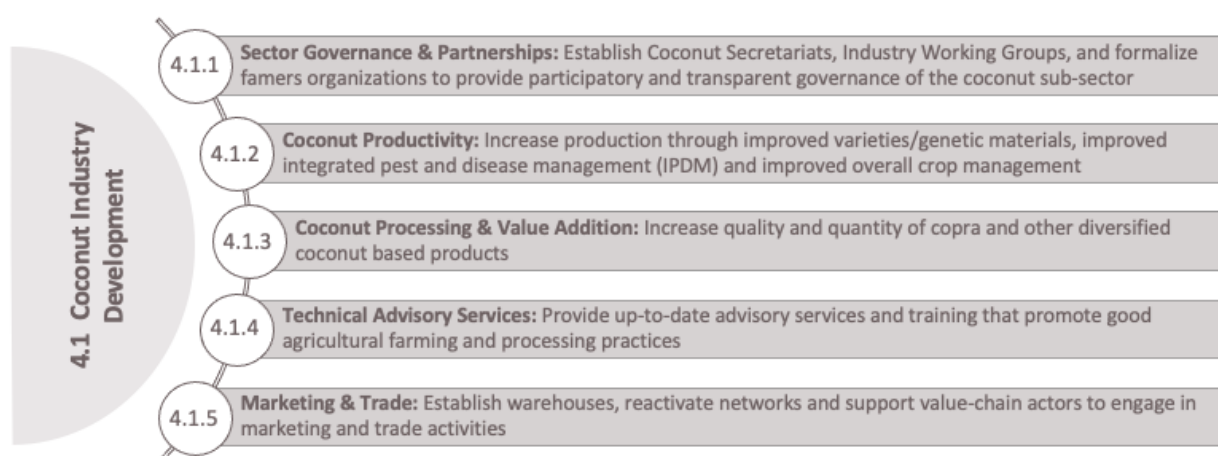
## 2.4. Program 4: National Crop Development Program

The National Crops Development Program aims to restore and upscale Solomon Islands' export capabilities for traditional industrial crops<sup>27</sup> (specifically coconut and cocoa), and diversify its export portfolio by revitalising neglected and promoting new high value crops (e.g. coffee, kava, noni, ngali nuts, spices). The program also aims to boost domestic value addition through processing and increase local consumption of these commodities and their by-products. A cautious approach will be taken to ensure that the available fertile areas for domestic food production and home gardens will not be indiscriminately converted to cash cropping. Such an approach would run contrary to increased self-sufficiency, increased resilience, and a more nutritious food base.

<b>Program 4 National Crop Development Program</b>		Increases productivity and quality of existing as well as of new high value crops for the export as well as domestic market, through improved varieties, resilient farming systems, and good agricultural practices.
<b>Sub-Program 4.1</b>	<b>Coconut Industry Development</b>	<ul style="list-style-type: none"> <li>• Increased exports and domestic use of high quality copra and other coconut-derived products from sustainable coconut farming systems</li> <li>• Increased profit margins for farmers in collaboration with private enterprises</li> </ul>
<b>Sub-Program 4.2</b>	<b>Cocoa Industry Development</b>	<ul style="list-style-type: none"> <li>• Increased exports and domestic use of high quality cocoa and its products from sustainable cocoa farming systems</li> <li>• Increased profit margins for farmers in collaboration with private enterprises</li> </ul>
<b>Sub-Program 4.3</b>	<b>High Value Crops Development</b>	<ul style="list-style-type: none"> <li>• Increased and diversified exports and domestic use of well processed high value crops from sustainable farming systems</li> <li>• Increased profit margins for farmers in collaboration with private enterprises</li> </ul>

### Sub-Program 4.1 Coconut Industry Development

**Objective:** Increased exports and domestic use of high quality copra and other coconut-derived products from sustainable coconut farming systems with increasing profit margins for farmers in collaboration with private enterprises.



<sup>27</sup> The palm-oil sub-sector is successfully managed by New Britain Palm Oil Limited (NBPO), and MAL has gradually phased out its financial and technical support for these operations.

Coconut is the most important cash crop for Solomon Islands smallholder farmers and is grown by 38,300 agricultural farm holdings (34 per cent of all farm holdings). Although direct consumption of fresh nuts is very important nutritionally, coconuts are of commercial value primarily as copra.<sup>28</sup> While the economic life for tall coconut varieties is around 60 years, peak production is between 15-30 years of age. Solomon Islands' 9.9 million coconut trees have an average age of 31 years.<sup>29</sup> Ageing coconut trees are also more vulnerable to cyclone damage, which are projected to increase in intensity. National mapping of coconut production areas to determine level of productivity etc. will help in targeting interventions and strengthening the sustainability of the coconut industry.

The MAL Coconut Sector Strategy of Solomon Islands (2010) estimates that Solomon Islands' copra productivity (in terms of copra yield per hectare) is 0.69 metric tons (690kg/ha). In comparison to other copra producing countries producing around 1500-2000kg of copra/ha, this is far below potential and reflects the abandoned state of many plantations as well as smallholder plantings.

Production constraints include limited access to inputs such as drying nets, fuel drums and other equipment, uncertainty of shipping schedules, and insufficient transparency of markets and prices, reducing market incentives to increase copra quality. The devastating impact of the coconut rhinoceros beetle is now an additional limitation to increase production in some areas.

Trade constraints are mainly the lack of appropriate infrastructure, phone networks for improved communication and coordination, and most importantly lack of access to credit for pre-financing bulking of coconut. Processors face limitations in relatively high operational costs (e.g. energy costs), and access to better processing technologies and product development.

Solomon Islands, the number two exporter in 2010 after Indonesia, has now dropped to number seven. The largest copra importer is the Philippines, which also absorbs around 70 per cent of Solomon Islands' copra. In the period 2010-2019 copra world market prices for bulk copra<sup>30</sup> oscillated between 500-700 USD/mt, but an extreme drop in copra prices in 2019 plunged the Solomon Islands copra exports to a drastic low of around 3,000 metric tons.

Value-added coconut products as export commodities, such as virgin coconut oil, are a more recent development but will require upgraded processing techniques in order to be significant. Domestic sales of green and dry coconut in the Honiara markets, while limited in scale, continue to earn income for farmers and some also supply exporters with de-husked coconuts for export.

Despite these constraints and weaknesses, the Solomon Islands' coconut sector has shown considerable resilience over the decades compared with other Pacific Island Countries. This has been attributed to six main factors: (i) a fundamental comparative advantage in copra production; (ii) the desperation of many rural households for a source of cash income; (iii) the ability of coconuts to survive several years of complete neglect; (iv) several periods of relatively favourable copra prices; (v) the existence of a network of collection centres previously established by Central Export and Marketing Authority (CEMA) which could be used by private traders; and (vi) the availability and willingness of the private sector to become involved in copra trading.<sup>31</sup>

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<sup>28</sup> ITC, 2010. Coconut Sector Strategy Solomon Islands

<sup>29</sup> Honiara and Malaita having the youngest coconut crops (average ages of 16- 17 years), while the oldest coconut crops are in Isabel and Makira (average ages of 41-42).

<sup>30</sup> Copra (Philippines/Indonesia), bulk, c.i.f. N.W. Europe

<sup>31</sup> Young, D. and Pelomo, M., 2014. Solomon Islands Coconut Value Chain Analysis



### **Component 4.1.1 Sector Governance & Partnerships**

**Policy & Strategy.** Review and update the Solomon Islands Coconut Sector Strategy 2012 –2020 (2010) to reflect new developments, trends, and technologies in the industry. Lessons learnt from the Government’s COVID-19 response will be taken into account.<sup>32</sup> Revisions will also take into account the recommendations of the NCCP, NAPA and NDC.

**Sector Coordination.** Review and improve current institutional and regulatory arrangements for the coconut sector. Improve or establish various levels of coordinating and implementing agencies (such as Coconut/Cocoa Secretariat, Coconut Industry Working Group, Provincial Coconut Task Forces, Farmer Associations/Cooperatives) involving all relevant stakeholders. Facilitate tailor-made training activities on the operations of the coconut market and the international coconut trade in order to improve the market understanding for all significant players in the industry, including Central Export and Marketing Authority (CEMA).

**Farmer Organizations.** Collaborate with the private sector to form, support and improve coconut farmer organizations including Land Purchase Cooperatives (LPCs). Assist active FOs and LPCs to establish storage warehouses with basic equipment (e.g. weighing scales, bagging facilities, etc.).

**Mapping Production Areas.** Building on existing and newly collected data, MAL will undertake a combined national mapping activity on coconut, cocoa, kava and coffee production areas and rank the production potential for each commodity (high, medium, low). The mapping will include information on poverty status, status of production capacity (e.g. age and type of plantation), existence of farmer organizations, shipping points, road network, mobile phone network, and other parameters vital for efficient production, monitoring and marketing. Mapping will be instrumental for improved targeting of interventions and will inform the selection of production sites with minimal climate change impact risk.

**Coconut Support Scheme.** Increase the production volume, productivity per tree, and quality of copra and other coconut based products through a long-term Coconut “Support Scheme” co-funded by a National Coconut Development Fund. The scheme will provide incentives for farmers to join farmer organizations (FOs), support FO members to improve their coconut crop management and increase the area they plant under sustainability management guidelines. Participating farmers will also agree to be monitored through a GIS-based M&E system, which will facilitate more profitable marketing arrangements. The scheme may include investments into processing (e.g. copra improved drying facilities) and warehousing facilities, improved seedlings, linkages with private sector and development partners. Ownership of such facilities will preferably be with registered farmer organizations.

**Partnership Development.** Improve value chain performance through various models of mutually beneficial collaborative partnerships<sup>33</sup> that link willing farmers and their organizations from rural areas to private sector entrepreneurs and/or other stakeholders along the value chain. Partnerships will build on the success of past experiences<sup>34</sup> to devise appropriate and transparent cost sharing models and collaboration mechanisms. These may include preferential technical training, co-funding through matching grants, loan guarantees, as well as subsidies and tax exemptions on the import of equipment and machinery used for research, production, processing, and marketing.

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<sup>32</sup> SIG (2020). Economic stimulus package to address the impacts of the COVID-19 pandemic

<sup>33</sup> Public Private Partnerships, Productive Partnerships, Networking Arrangements, etc. with public agencies, non-governmental organizations, and private entrepreneurs

<sup>34</sup> Such as the Rural Development Program I and II

### **Component 4.1.2 Coconut Productivity**

**Coconut Farming Systems.** Depending on the size of farms MAL will identify and promote sustainable coconut farming systems such as intercropping and mixed-cropping (also referred to as agroforestry). Diversified multi-species cropping systems are especially important for smallholders' economic survival and continued food security in case copra prices are too low. Farmers will also be advised on the appropriate pest/disease control measures, the correct management of nutrients, water supply, and crop cultural practices such as planting density and pruning.

**Coconut Variety Development.** MAL will establish/refurbish national coconut germplasm collection centres and seed gardens at Gozururu (Isabel Province) and Yadina (Central Province, Russell Islands). It will develop and/or select superior local and imported coconut genetic materials with characteristics such as (i) high yields, (ii) high degree of pest and disease resistant, (iii) climate resilience, (iv) good market demand, and (v) capability to grow in mixed farming systems. This will involve selection and tagging of local tall productive mother palms in all provinces. Options for clonal propagation of selected coconut varieties will be explored in collaboration with interested international organizations.

**Pest and Disease Control.** MAL will improve the effectiveness of pest and disease control and response measures for economically important and potential high risk threats for the coconut sector. (e.g. CRB, Borgia Coconut Syndrome). This involves collaboration with international research stations, improved bio-security measures including observation, early detection, control and awareness campaigns. A pest/disease response manual will be compiled with an emphasis on integrated pest management techniques (e.g. pheromone traps, biocontrol agents, plantation clean-up) and the safe use and disposal of permissible agrochemicals as a last resort.

**Plantation Rehabilitation.** MAL will select mother palms and establish seed gardens/provincial nurseries for seedling production of superior local or improved varieties. These will be used in long-term development interventions to rehabilitate rural large-scale coconut plantations (e.g. Russell Islands), revived Land Purchase Cooperatives (LPC), and other smallholder production areas. The establishment of coconut-based mixed-farming systems will be prioritized and the rehabilitation program will be rolled out throughout the country to replace senile trees. This will be done in collaboration with private sector farmer networks.

### **Component 4.1.3 Coconut Processing & Value Addition**

**Low-Cost Mechanization.** MAL will investigate possible mechanization options to increase the output of smallholder coconut production systems. Of specific interest are versatile power tillers, which can be used for cultivation, collection of coconuts, in-field and inter-village road transport, as well as powering other devices such as irrigation pumps and mills. Lessons from other countries<sup>35</sup> will be applied to improve processing, including coconut splitting, dehusking, drying techniques, etc.,.

**Post-harvest Processing.** MAL will collaborate with CEMA, MCILI, farmer organizations and traders to improve copra quality along the value chain (from harvest to shipping), especially in terms of drying to avoid high moisture content and smoke contamination.

**Product Diversification.** Collaborate with farmer organizations and private sector entrepreneurs to investigate and test suitable coconut processing technologies. Explore value-added product and market diversification (e.g. crude coconut oil for export, refined cooking oil, biodiesel, virgin coconut oil, coconut flakes and flour, cream, water). Other options include use as a raw material for animal

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<sup>35</sup>[http://www.agritech.tnau.ac.in/expert\\_system/coconut/coconut/coconut\\_farm\\_implements.html](http://www.agritech.tnau.ac.in/expert_system/coconut/coconut/coconut_farm_implements.html)

feed preparations; soap making; husk utilisation for coir and pith; shell utilisation for energy, charcoal and activated carbon; and higher value coconut milk for export, coco-peat, and coconut wood). Learning from other expert coconut processing agencies and institutions will be increased.<sup>36</sup>

#### **Component 4.1.4 Technical Advisory Services**

**Good Agriculture Practices.** Review and update the Solomon Islands Coconut Production Guide and include sustainable and climate resilient farming practices. Make the guide and its practices and recommendations available in on-line and off-line versions.

**Lead Farmers.** Train male and female lead farmers to be influencers and mentors who promote the use of good climate smart agricultural practices and innovative technologies. Lead farmers will compliment MAL's outreach and increase impact in a cost-efficient way (e.g. field schools, demonstration plots, use of digital information tools).

#### **Component 4.1.5 Marketing & Trade**

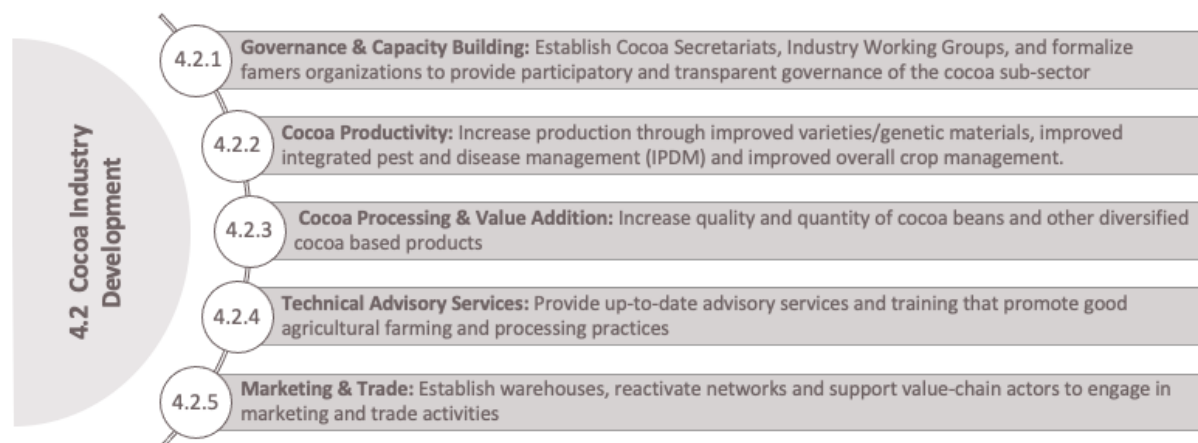
Similar activities for coconut and cocoa under components 4.1.5 and 4.2.5 will be carried out together.

**Access to Finance.** Use the Coconut/Cocoa Secretariat to lobby for the creation of suitable, short-term trade financing systems in collaboration with financial services providers such as the newly established Development Bank of Solomon Islands. Make sure that these financing systems are suitable also for female and younger producers, who face specific and additional constraints when it comes to access to financial resources.

**Connectivity and Logistics.** Based on improved data collection from the field, the Coconut/Cocoa Secretariat will lobby to upgrade essential infrastructure in the copra/cocoa collection system with the concerned ministries and development partners. Needed infrastructure and services include rural roads, in-field roads, warehouses, wharfs, jetties and inter-island shipping services. New or refurbished CEMA multipurpose collection centres (for coconut, cocoa, etc.) established and equipped at strategic locations in all provinces. Strengthen producer organization and Land Purchase Cooperatives to own and manage warehouses and provide services at rural areas.

### **Sub-Program 4.2 Cocoa Industry Development**

**Objective:** *Increased exports and domestic use of high quality cocoa and its products from sustainable cocoa farming systems with increasing profit margins for farmers in collaboration with private enterprises.*



<sup>36</sup>[http://www.agritech.tnau.ac.in/expert\\_system/coconut/coconut/coconut\\_processing.html](http://www.agritech.tnau.ac.in/expert_system/coconut/coconut/coconut_processing.html)

Cocoa is one of the most important cash crops for smallholder farmers, grown by 17,800 agricultural farm holdings. The most productive age of cocoa trees is between 10-20 years, and Solomon Islands' 6.7 million cocoa trees have an average age of 14 years.<sup>37</sup>

At its current production level, Solomon Islands ranks 31st of cocoa exporting countries. While cocoa production was increasing in the period 2000-2010, it started declining in the last decade (from 5,481 tons of cocoa beans reaching the export market in 2010 to 4,598 tons in 2019). Reasons for this are manifold and include falling world market prices,<sup>38</sup> farmers receiving a declining share of the exporters' contract price (from around 80 per cent to 70 per cent over the last four years), aging cocoa trees, insufficient bean quality due to smoke contamination, lack of bean grading, and high transport costs between production areas and Honiara.

In the past, marketing of cocoa was done through the Commodity Export Marketing Authority (CEMA) which oversaw and regulated trade in copra and cocoa, and acted as a buyer and exporter of these commodities via a network of buying centres throughout the country. In addition to copra and cocoa, other commodities also fell under the control of CEMA, including coconut oil, palm oil, palm kernels, nuts, spices and kava. With CEMA's restructuring in 2002, it became a solely regulatory and advisory body to the commodity trade with its trading monopoly abolished. CEMA's main role now includes; (i) the approval and issue of export licenses; (ii) quality standards assurance and the issuance of relevant shipping documentation; (iii) facilitation of market intelligence and the collection and dissemination of commodity statistics; (iv) farmer training on quality; (v) and an advisory role to the Government on commodity policy formulation and implementation.

Since CEMA's restructuring, cocoa collection is through private sector agents and is dominated by numerous traders with limited working capital, who mostly deal with smallholder producers of coconuts and cocoa. Usually there is no price difference for sun-dried or traditionally dried cocoa since all the small consignments end up as bulk cocoa. Some of the agents have local collection points which consist of basic storage sheds and bagging facilities. They act as aggregators before the cocoa beans are loaded at destined shipping points for transport to the Honiara-based exporters, who are registered with CEMA.

These combined factors result in an increasing neglect of cocoa trees. According to Solomon Islands Cocoa Book<sup>39</sup> much of the cocoa in Solomon Islands is not properly managed, yields per hectare are low, and the crop's true potential is not fully realized. A more meaningful indicator is yield per tree, but these data are not available. Nevertheless, experience elsewhere has shown that it should be possible to increase yields 'immediately' (within a season) by 50 per cent in most holdings (i.e. from about 400 grams of cocoa per tree to 600 grams).<sup>40</sup>

Currently Solomon Islands produces low quality cocoa, mainly due to smoke taint (affecting as much as 30 per cent of beans) caused by poor drying techniques, and is locked into lower-priced grinding markets such as Malaysia, Singapore and Indonesia. However, although the country will remain a smaller player in the cocoa industry, a focus on high quality cocoa beans destined for niche and speciality markets could offer good prospects for increasing revenues and farmers' income.

The suitability of Solomon Islands' climate for cocoa cultivation is expected to decrease beyond 2050 but, importantly, cocoa is a useful component of a diversified food system, which can be grown under

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<sup>37</sup> The youngest cocoa trees are in Choiseul, Isabel and Central (4-8 years) and the oldest in Malaita and Makira (16-18 years).

<sup>38</sup> World market prices fell from 3.1 USD/kg in 2010 to 2.3 USD/kg in 2019, and the export value expressed as SBD/kg also dropped from 21SBD to 14SBD (based on data from International Cocoa Organization and CEMA).

<sup>39</sup> CLIP, 2010. Solomon Islands Cocoa Book - Solomon Islands Cocoa Livelihoods Improvement Project (CLIP)

<sup>40</sup> ACIAR, 2008. Rehabilitating Cocoa for Improved Livelihoods in the South Pacific.

mature coconuts, along with other crops, such as taro and bananas, and can offer shade to young kava plants.<sup>41</sup> Trials with solar driers show that high quality beans can be produced without smoke taint.<sup>42</sup> Further, more than 50 percent of producers and processors of cocoa in Solomon Islands are women, who are typically quite heavily involved in the growing and harvesting stages, in addition to fermenting and drying of cocoa beans.<sup>43</sup>

### **Component 4.2.1 Governance & Capacity Building**

**Policy & Strategy.** MAL will review and update the Solomon Islands Cocoa Industry Policy and Strategy 2012–2020, currently guiding the industry, to reflect new developments, trends, and technologies. Lessons learnt from the Government’s COVID-19 response will be taken into account.<sup>44</sup> The revision will also contain the national guidelines for sustainable cocoa development and management, including climate smart practices, which will be aligned to sustainability standards of Solomon Island’s target markets. Any revisions will take into account the recommendations of the NCCP, the NAPA and the NDC.

**Sector Coordination.** MAL will review the institutional regulatory framework governing the cocoa industry and improve coordination and implementation along the cocoa value chain. MAL will proactively network with international organizations and NGOs, engaged in the sustainable management and trade of cocoa.<sup>45</sup> This activity will be carried out similarly to that already described for coconut under component 4.1.1.

**Farmer Associations.** Assist cocoa farmers to establish producer groups and farmer organizations. Support active and registered farmer organizations to establish warehouses with basic equipment (e.g. weighing scales, moisture meter) to store cocoa until shipping. This activity will be done in collaboration with the private sector in form of PPPs or productive partnerships. Where cocoa is produced in mixed farming systems under coconut, this activity will be combined with interventions in the coconut value chain.

**Mapping Production Areas.** As described under component 4.1.1, MAL will undertake a combined national mapping activity on coconut, cocoa, kava and coffee production areas and rank the production potential for each commodity (high, medium, low). Data on cocoa will build on the Cocoa Livelihoods Improvement Project (CLIP) and CEMA databases.

**Cocoa Support Scheme.** MAL will develop a long-term Cocoa “Support Scheme” to increase the production volume, productivity per tree, and quality of cocoa beans. The design of the scheme will mirror the coconut support scheme already described under component 4.1.1.

**Partnership Development.** Improve cocoa value chain performance through various models of mutually beneficial collaborative partnerships. Details describing the development of partnerships and proposed cost-sharing and collaboration mechanisms are already described under component 4.1.1.

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<sup>41</sup> McGregor et al (2016) Vulnerability of export commodities to climate change. In: Vulnerability of Pacific Island agriculture and forestry to climate change, Taylor, McGregor, Dawson (Eds). SPC, Noumea <http://www.fao.org/family-farming/detail/en/c/432913/>

<sup>42</sup> <https://phamaplus.com.au/where-we-work/commodities/cocoa/>

<sup>43</sup> <https://aecom.com/blog/empowering-women-in-solomon-islands-cocoa-industry/>

<sup>44</sup> SIG (2020). Economic stimulus package to address the impacts of the COVID-19 pandemic

<sup>45</sup> These may include the World Cocoa Farmers Organization (WCFO), the International Cocoa Organization, The Vanuatu Organic Growers Association, the Pacific Islands Farmer Organization Network, and organizations involved in certifying cocoa against standards such as fair trade and organic.

### **Component 4.2.2 Cocoa Productivity**

**Cocoa Farming Systems.** Conduct adaptive on-farm research trials as well as demonstration plots for sustainable cocoa-based agroforestry systems. Perform a profitability analysis of cocoa farming systems to inform the formulation of reasonable policies (e.g. subsidy support systems) and help farmers in decision-making. This analysis will also consider the costs and benefits for a farmer (or farmer organization) to sell dry or wet beans. Farmers will also be advised on appropriate pest/disease control measures, correct management of nutrients, water supply, and crop cultural practices such as planting density and pruning.

**Cocoa Variety Development.** Identify superior local and introduced varieties through suitable screening and participatory action research. Important characteristics include (i) high yields, (ii) pest and disease resistance, (iii) climate resilience, (iv) market demand, and (v) capability to grow in mixed farming systems. Liaise with PNG authorities to establish if PNG's cocoa pod borer tolerant cocoa types can be imported into Solomon Islands. Promising varieties will be multiplied in newly established cocoa seed gardens at the FES and made available to farmers. Establish cocoa budwood collection plots at Adauliua and at selected ATC and FES. Conduct varietal gene mapping and characterization and establish a cocoa gene bank.

**Pest and Disease Control.** MAL will improve the effectiveness of pest and disease control and response measures for economically important and potential high risk threats such as the cocoa pod borer and other relevant pests and diseases. This involves collaboration with international research stations, improved bio-security measures including observation, early detection, control and awareness campaigns. A pest/disease response manual will be compiled with an emphasis on integrated pest management techniques (e.g. pheromone traps, biocontrol agents, plantation clean-up) and the safe use and disposal of permissible agrochemicals as a last resort.

**Plantation rehabilitation.** The rehabilitation of the Russell Islands Plantation Limited (RIPEL) will progress as soon as ownership issues are resolved. Plantations owned again by SIG, coconut and cocoa plantations rehabilitated.

### **Component 4.2.3 Cocoa Processing & Value Addition**

**Low-cost mechanization.** MAL will explore and research the options for low-cost mechanization technologies such as mechanised splitting of cocoa pods and transport with power tillers and locally made trailers.

**Cocoa Processing.** Test technological improvement options for fermentation and drying that are employed by successful cocoa exporting countries. Examples include solar dryers (poly-houses), dryer models using solar power as an additional source of energy, designs with drying racks and sliding roofs, as well as improved traditional village driers with structural adjustments to avoid smoke contamination (e.g. addition of flues). Research will focus on costs, thermal efficiency, environmental impact, and quality of dried beans as well as on solutions that avoid compounding women's work load.

Evaluate the feasibility of the establishment of (i) improved small-scale driers (usually run by individual growers selling dried beans) and (ii) two medium-scale cocoa-chocolate factories (Honiara and Guadalcanal). If feasible, MAL will seek the establishment of these facilities in the framework of PPPs.

### **Component 4.2.4 Technical Advisory Services**

**MAL Staff Training.** Advise and train MAL staff on best practices in cocoa production and marketing by offering training with cocoa specialists and organizing training camps in successful cocoa-producing

countries. Extension staff will also receive training on the establishment and management of farmer organizations.

**Good Agriculture Practices.** Review and update the Solomon Islands Cocoa Production Guide and include sustainable and climate smart management practices. Make the guide available in on-line and off-line versions.

**Lead Farmers.** Train male and female lead farmers to be influencers and mentors who promote the use of good climate-smart agricultural practices, innovative technologies and rejuvenation of cocoa trees (pruning and/or grafting). Lead farmers will demonstrate suitable cocoa agroforestry systems on model farms and compliment MAL's outreach and increase impact in a cost-efficient way (e.g. field schools, use of digital information tools).

### **Component 4.2.5 Marketing & Trade**

Similar activities for coconut and cocoa under components 4.1.5 and 4.2.5 will be carried out together.

**Certified Cocoa.** Ensure quality assurance at all levels of the cocoa value chain and collaborate with CEMA on developing guidelines and certification procedures. Aim for certification (e.g. UTZ, Rain Forest Alliance, Organic or Fairtrade, or PGS) in the long term once bean quality has improved, farmers are organised, and partnerships established.

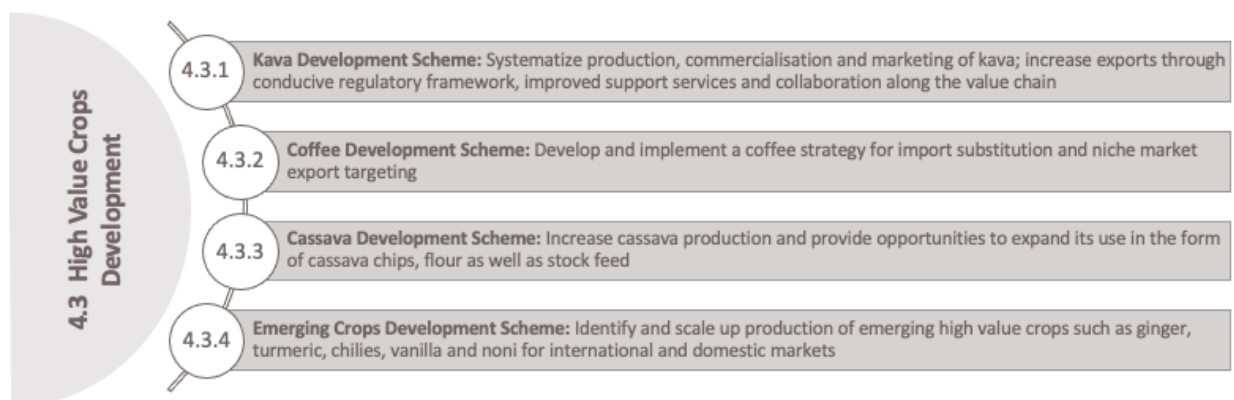
**Market Diversification.** Diversify market outlets (currently only Malaysia with very small quantities going to Australia, the Netherlands, and the UK). Seek separation of cocoa consignments by introducing quality inspections along the value chain. MAL will organize annual national and provincial cocoa competitions for farmers, processors and local chocolate makers to promote best practices and reward quality.

**Access to Finance.** Use the Cocoa Secretariat to lobby for suitable short-term trade financing systems in collaboration with financial services providers such as Development Bank of Solomon Islands.

**Connectivity and Logistics.** New or refurbished CEMA multipurpose collection centres (for coconut, cocoa, etc.) established and equipped at strategic locations in all provinces. Strengthen producer organization and Land Purchase Cooperatives to own and manage warehouses and provide services at rural areas.

## **Sub-Program 4.3 High Value Crops Development**

**Objective:** *Increased and diversified exports and domestic use of well processed high value crops from sustainable farming systems with increasing profit margins for farmers in collaboration with private enterprises.*



In an effort to broaden the country's export base with additional high value crops MAL will launch selected crop development schemes while also promoting their domestic value addition and consumption.

### **Component 4.3.1 Kava Development Scheme**

Solomon Islands' kava is regarded of good quality and able to compete with Fiji and Vanuatu types. In 2009, Solomon Islands exported around 25 tons of powdered kava to Kiribati, Nauru, and Marshall Islands.<sup>46</sup> Interest in kava cultivation, processing and exporting is growing again. PHAMA and MAL are publishing a National Kava Standard which seeks to enhance local growers' chances to tap into overseas markets. Sustainable kava cultivation within agroforestry systems will be promoted to, *inter alia*, minimize waterlogging, predicted to increase due to more intense cyclones.<sup>47</sup>

MAL's current support to farmers (planting materials, simple tools and training) will be augmented with a more systematic approach to sustainable production and marketing through the following activities.

**Kava Policy & Strategy.** MAL, in collaboration with MCILI and the Kava Industry Working Group, will conduct a kava value chain analysis to identify key bottlenecks and opportunities. Based on the findings they will determine a "Kava Commercialisation Strategy" that will include the necessary quality criteria recommended for producers and processors under the National Kava Standard. The strategy will take into account the recommendations of the NCCP, the NAPA and the NDC.

**Kava Sector Coordination & Mapping.** MAL will establish a Kava Industry Working Group involving all relevant stakeholders; facilitate tailor-made training on domestic kava market operations and international kava trade, and improve market understanding for significant players in the industry. As described under 4.1.1, MAL will undertake a combined national mapping activity on coconut, cocoa, kava and coffee areas and rank production potentials for each.

**Farmer Associations.** MAL will support the establishment of Kava producer groups and farmer organizations for efficient delivery of services within the supply chain. This will be done in collaboration with the private sector and in coordination with the "Millionaire National Kava Development Initiative" to be implemented in all provinces.

**Partnership Development.** Improve value chain performance through various models of mutually beneficial collaborative partnerships. Details describing the development of partnerships and proposed cost-sharing and collaboration mechanisms are under component 4.1.1.

**Capacity Building.** MAL will train selected extension officers to become subject matter specialists on kava varieties, sustainable production technologies including mixed farming systems, IPM, organic production methods, and soil fertility management.

**Applied Kava Research & Technical Services.** In partnership with the Kava Industry Working Group, MAL will identify the most promising varieties for export in terms of agro-ecological suitability, market preference, chemical properties, etc. Shortlisted varieties will be further tested through on-farm field trials. The best varieties will be multiplied in the FES and cuttings will be made available to farmers for planting and further multiplication. Existing processing technologies will be reviewed and adjusted to achieve high export quality. A manual of Good Agricultural Practices for kava growers will be

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<sup>46</sup> MAL, 2009. Ministry of Agriculture & Livestock Annual Report 2009

<sup>47</sup> Stice and McGregor (2016) Vulnerability of high-value horticultural crops to climate change. In: Vulnerability of Pacific Island agriculture and forestry to climate change, Taylor, McGregor, Dawson (Eds). SPC, Noumea <http://www.fao.org/family-farming/detail/en/c/432913/>



developed, and training will be provided to farmer organizations. The manual will contain recommendations regarding climate smart practices for kava.

**Processing & Marketing.** Improved driers for Kava roots may be part of kava cultivation incentive schemes in support of Kava farmer organizations and private sector. The exporter will agree with his suppliers on the expected quality criteria. Quality assurance role will be taken up by CEMA. PPPs will be considered for productive infrastructure investments such as multi-purpose pack houses and larger driers in Honiara and provinces.

### **Component 4.3.2 Coffee Development Scheme**

Large numbers of coffee trees were planted in the 1980s with the promise of it being a rewarding cash crop. However, due to the tensions, the industry fell into decline and has not yet recovered. One of the main obstacles to reviving coffee is the inability to produce large quantities.

There is potential to produce high quality Arabica coffee in the high elevation areas of Central Malaita, Guadalcanal, Makira, and Choiseul Provinces. However, considering the competition in the mainstream global coffee market, a small new entrant like the Solomon Islands would have little chance of success.<sup>48</sup>

Production and marketing opportunities seem to exist for catering to the local market and some international niche markets. The value of Solomon Islands' coffee imports has steadily increased over the last 10 years and stood at around 4.5 million USD in 2018, indicating an opportunity for import substitution. Development of niche markets would require more expensive strategies like certified organic production, fair trade, or geographic indication (or appellations of origin, which is possibly more appropriate for coffee). Current exports (2019) amounted to around 2,000 USD.<sup>49</sup>

Effects of climate change pose risks to growing Arabica coffee given its sensitivity to small changes in temperature. Increasing temperatures could also mean increased coffee berry borer incursion. Quality will also be reduced by warming temperatures.<sup>50</sup> In addition, rainfall increases the risk of developing coffee leaf rust (CLR) which is difficult to control.

Considering the above the support to the coffee sector will be implemented under the following activity areas.

**Policy & Strategy.** MAL will develop a coffee strategy including both import substitution and niche market targeting. This will be done in collaboration with MCIL and the members of the Coffee Industry Working Group. The strategy will also introduce quality criteria to be adhered to by the producers and processors and will take into account the recommendations of the NCCP, the NAPA and the NDC.

**Sector Coordination and mapping.** Establish a Coffee Industry Working Group involving all relevant stakeholders. Facilitate tailor-made training activities on the operations of the domestic coffee market and the international niche coffee trade in order to improve the market understanding for all significant players in the industry. As described under component 4.1.1, MAL will undertake a combined national mapping activity on coconut, cocoa, kava and coffee production areas and rank the production potential for each, taking into account the level of rainfall and areas where leaf rust and berry borer incidences are low.

**Farmer Associations and Partnerships.** Scaling up of coffee production will start with currently active producer groups/farmer organizations and gradually extend to include more farmers and new areas.

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<sup>48</sup> Bourke, RM, et al., (2006) A Solomon Islands Smallholder Agriculture Study Vol 1-5

<sup>49</sup> International trade statistics, <http://www.intracen.org/itc/market-info-tools/trade-statistics/>

<sup>50</sup> Taylor, M. et al.,(2016). Vulnerability of Pacific Island agriculture and forestry to climate change

Coffee associations will receive training on association management, marketing (contract farming or similar arrangements), and on good climate smart production practices. This activity will be done in collaboration with the private sector. Models of partnerships that may improve coffee chain performance are described in component 4.1.1.

**Capacity Building.** Upgrade the knowledge and skills of MAL extension officers through trainings from private sector or neighbouring countries (e.g. PNG). Training will include the application of organic practices as well as integrated crop and pest management (ICPM) technologies.

**Applied Coffee Research** MAL, in partnership with the Coffee Industry Working Group, will design and conduct on-station and on-farm research to identify best performing Arabica coffee materials for further screening. Importation of pure varieties will be considered under strict biosecurity protocols. Research will focus on validating proven technologies or adapting them to local circumstances. Coffee research work initiated under the previous coffee programs at the growing areas of Malaita and Guadalcanal Provinces will continue and impacts of climate change on coffee production will be assessed.

**Technical Services.** Develop a manual of Good Agricultural Practices (GAP) for coffee growers and make it available both on-line and off-line. The manual will detail climate smart practices and strategies to minimize problems with coffee leaf rust and coffee berry borer. Based on the GAP, provide training to farmers on growing, harvesting and processing coffee. Provide support to farmer organizations for propagating suitable coffee seedlings recommended by the Department of Research in collaboration with market experts.

**Processing & Marketing.** Processing is the task of the private sector to ensure premium quality. Experienced farmer organizations with access to proper infrastructure, equipment and knowledge, will be encouraged to produce parchment coffee. MAL will support the establishment of basic coffee processing units with producer organisations and private sector partners (e.g. through PPPs). MAL will collaborate with CEMA to develop quality assurance schemes and export quality control mechanisms.

### **Component 4.3.3 Cassava Development Scheme**

While not a high value commodity, cassava and other root crops are of high strategic importance as staple foods as well as an ingredients for producing stock feed (replacing imported grains), especially for pigs and poultry. On an industrial scale, cassava is used for starch production, and in the food sector there are opportunities for further processing and popularizing cassava in the form of cassava chips, cassava flour, etc. Climate change projections for cassava suggest minimal impact although extreme rainfall could cause waterlogging problems.

**Applied Root Crops Research.** Root crops (kumara, cassava, taro, sweet potato, etc.) are important staple foods as well as useful inputs for animal feed production (especially cassava). Building on existing data and trial results, MAL will conduct additional research to identify the most suitable varieties for both human and animal nutrition. Varieties will also be tested for tolerance to waterlogging, lodging and resistance to cassava pests and diseases. Using participatory action research, new varieties will be evaluated in collaboration with farmers to determine whether villagers judge them to be superior to existing varieties.

**Technical Services.** MAL will establish a gene bank for cassava, select varieties to be multiplied and distribute them to smallholder farmers. Commercial cassava production will be supported with appropriate technologies, machineries, and training (e.g. through PPPs).

**Processing & Marketing.** Cassava processing units for producing cassava flour and cassava chips established and operational (especially for female and young entrepreneurs). Infrastructure support for cassava export (e.g. pack house and quality control) will be developed through PPPs.

#### **Component 4.3.4 Emerging Crops Development Scheme**

MAL will explore and support potential high value emerging crops for promotion in both domestic and export markets. Possible commodities include but are not limited to nuts (e.g. ngali nut and cut nut), noni, breadfruit, ginger, turmeric, chillies, cardamom and vanilla.

This scheme promotes diversification in order to strengthen food system resilience. Since different crops and varieties mature independently of each other, it is unlikely that the changing climate will impact all crops at the same time. Diversification also contributes to increased stability of farmers' income base and increased self-sufficiency in commodities such as vegetables, fruits, etc. MAL will support the development of emerging crops through the following activities:

**Policy.** MAL will review and enact the "Solomon Islands Indigenous Fruit and Nut Industry Policies and Strategies 2014–2020". Development scheme strategies will build on lessons learned from the Government's COVID-19 response.<sup>51</sup>

**Applied Emerging Crops Research.** The National Agriculture Research and Development Centre will intensify research on the agro-ecological suitability and good agricultural practices of selected commodities. Commodity selection criteria include: (i) the availability of a sustainable and resilient production system, (ii) national and/or international marketability, (iii) impact on domestic food and nutrition security, (iv) options for domestic processing and value addition, and (v) opportunities for increased engagement of youth and women.

Refurbished field experimental stations and agriculture training centres (components 1.2.1 and 1.3.3) will be used to conduct participatory action research in order to evaluate and select varieties. They will also act as bulking sites for multiplication and distribution of certified quality planting materials and seeds.

**Technical Services.** Gene banks (germplasm collections) will be established for selected crops. MAL will also take action to manage the emerging ngali nut weevil and evaluate the vulnerability of other crops (such as ginger) to pests and diseases. Technical information on selected high-value emerging crops will be compiled and made available to farmers via demonstration plots in collaboration with lead farmers and/or farmer field schools, as well as printed and digital media. Information will include agronomic practices, expected gross-margins (cost/benefit analysis), possible uses, and nutritional values as well as support offered through SIG.

**Farmer Associations.** Farmer organizations or groups formed, trained, and supported with tools, equipment, planting material. They will also be supported to establish linkages with processors, traders, and exporters (e.g. through PPPs).

**Processing & Marketing.** Increasing the private sector's willingness to pioneer and develop niche products and markets will require both financial and technical support. Under the framework of transparent and equitable PPPs and productive partnership arrangements, processors and exporters of high value and emerging crops will be supported (e.g. with subsidies, tools, equipment, machineries and infrastructures), and the expansion of export markets will be explored. Marketing arrangements, such as contract farming, will be tested and established where feasible.

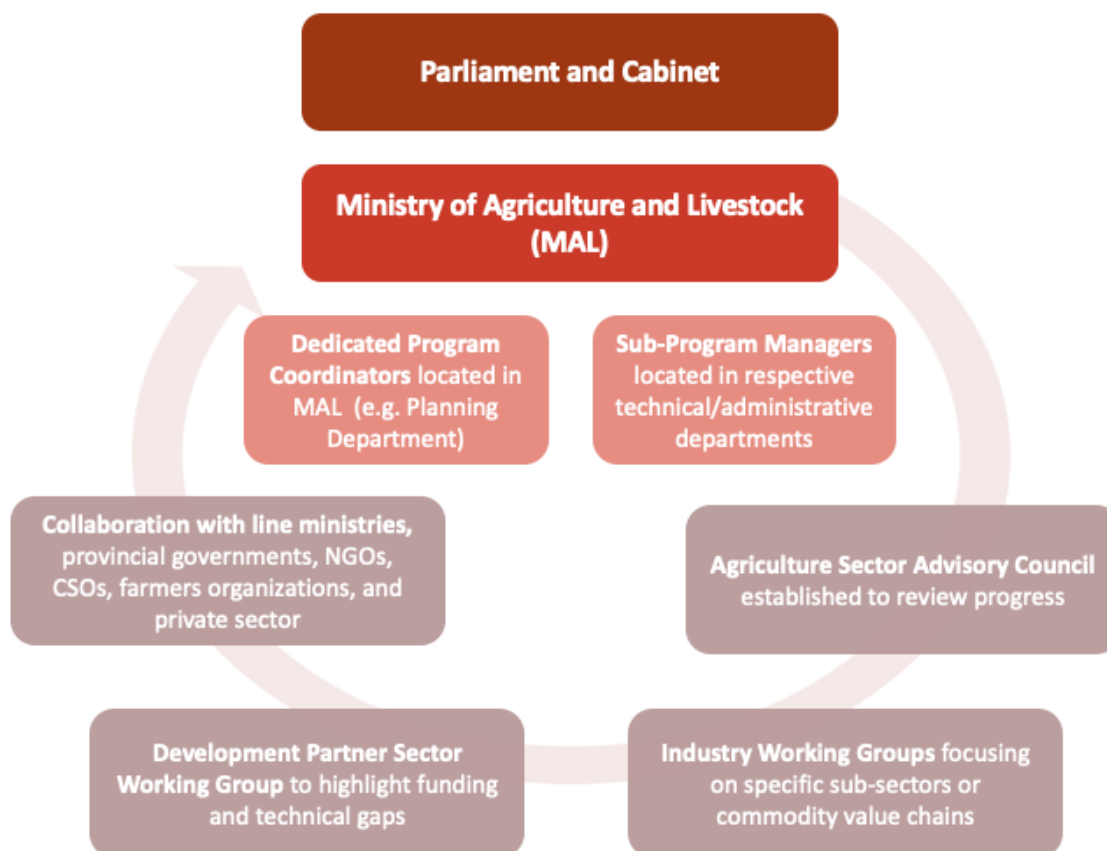
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<sup>51</sup> SIG (2020). Economic stimulus package to address the impacts of the COVID-19 pandemic

# CHAPTER 3

## ASGIP IMPLEMENTATION FRAMEWORK

The ASGIP is designed to facilitate implementation through a sector-wide approach involving both the public and private sector (including farmers and their organizations). Other crucial implementation partners include international and national NGOs, international development Partners, and civil society organizations, including religious organizations.



Specific roles for each ASGIP implementation partner are outlined below.

- **Parliament:** Parliament will ensure that a broad consensus on the inclusive, equitable and transparent development of the agricultural sector will be reached, highlighted, and promoted. This will be accomplished through its legislative powers and through one of its existing or a newly established committee.
- **Cabinet:** In order to avoid inconsistent, parallel, or even contradicting policies, the Cabinet and its sub-committees will ensure that agricultural policies guarantee inclusive and equitable development, are harmonised, up-to-date, and supportive to the implementation of the ASGIP. Furthermore, the political leadership will ensure that development interventions in other key sectors (e.g. transport, infrastructure, education, energy, and telecommunications) support the sustainable growth of the agriculture sector.
- **Local Governments:** To enable harmonization and mutual support of national and provincial development plans and investments, the Provincial Governments through their respective

Provincial Assemblies and in close consultation with the respective Wards and MAL, will promote sustainable and equitable growth of the agriculture sector and will support the implementation of the ASGIP.

- **Ministry of Agriculture and Livestock:** In addition to being the lead agency to operationalize and implement the ASGIP, MAL has special responsibilities to:
  - Expedite the restructuring of MAL as per ASGIP program 1 (Governance, Management & Innovation) and define responsibilities for the coordination and implementation of ASGIP's programs and sub-programs. Dedicated "program coordinators" (located within MAL's Agriculture Planning Department and working across the other departments), "sub-program managers" (located in the respective technical or administrative department), and focal points for youth and gender will be appointed, ensuring a clear responsibility for implementation.
  - Proactively inform, consult with, and collaborate with other line ministries, provincial governments, development partners, NGOs, CSOs, farmer organizations, and private sector to ensure mutual collaboration, harmonization, and support for the ASGIP implementation.
- **Agriculture Sector Advisory Council:** MAL will initiate the establishment of an Agricultural Advisory Council which will meet on a regular basis to (i) review the progress of the ASGIP implementation, (ii) highlight and propose necessary adjustments due to new developments, (iii) ensure equitable and transparent development support throughout the country. Membership to the Agriculture Sector Advisory Council will include, but is not limited to relevant Ministry representatives, SICCI, FOs, private sector, finance institutions, NGOs, SCOs, Ministry of Women, Youth, Children and Family Affairs (MWYCFA), SIWIBA (see sub-program 1.1. for details).
- **Industry Working Groups:** MAL will encourage the formation of Industry Working Groups which will focus on specific sub-sectors or commodity value chains (e.g. cocoa, coconut, poultry). These Industry Groups will ensure that development constraints along the respective value chains are raised and communicated to the respective authorities.
- **Development Partner Sector Working Group:** MAL will proactively call for regular joint meetings with international development partners. The aim of these sector working group is to (i) inform the development partners of the ASGIP objectives and areas of interventions, (ii) to highlight funding and/or technical gaps where financial or technical assistance is needed, (iii) to ensure that any international development support is in line with the ASGIP's objectives or addresses areas in direct support of its goals.

# CHAPTER 4

## ASGIP MONITORING & EVALUATION

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Stringent monitoring and evaluation (M&E) of ASGIP implementation will be achieved through the involvement of various stakeholders and agencies. High-level performance of the respective agricultural development programs will be reported through the annual Development Budget Implementation Reports published by Ministry of National Planning and Development Coordination using the colour-coded “traffic light system”. For example, according to that system, the overall performance of 12 agriculture and food security related programs in 2017 was rated as “red”, indicating that the programs are off-track and need management attention.<sup>52</sup> Reasons for this low performance level have already been highlighted in this paper as well as in the NDS Performance Report 2017.<sup>53</sup>

To ensure high performance levels in ASGIP implementation MAL will improve its internal M&E system through the organizational restructuring process under ASGIP program 1. Since the MAL Planning and Management Department is tasked with planning, appraisal, monitoring and evaluation of development projects (SIG and donor funded projects), as well as with coordination of departmental reporting, it will take the lead role for ASGIP M&E. The four ASGIP program coordinators, assisted by the respective sub-program managers will be responsible for establishing detailed implementation plans plus milestones and targets for each sub-program and its components. MAL Planning and Management Department will develop unified reporting formats to be used by the implementing departments and respective MAL officers, sub-program managers, and program coordinators.

MAL will also ensure that as part of the planning, implementation, monitoring and evaluation equitable, transparent and just procedures will be established and followed. This is particularly important for (i) beneficiary selection, (ii) assessment of proposals for establishment of partnerships and (iii) supporting producer groups/farmer organizations not linked to any partnership. Partnerships with private sector entities (including farmer organizations) will be based on profit & loss calculations or business plans in the case of agribusiness enterprises. This approach will enable data based M&E systems, decision making and will generate lessons learnt for systematic improvement.

Each program and sub-program will have a set of indicators to assess progress. Based on these high level indicators, MAL’s corporate and annual plans will add more detailed targets and sub-indicators for their respective shorter planning periods. Table 10 below proposes a set of high-level ASGIP indicator

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<sup>52</sup> Ministry of Finance and Treasury, (2016 and 2017). Development Budget Implementation Reports

<sup>53</sup> Ministry of Planning and Development Coordination (2017). National Development Strategy 2016-2045 Performance Report

**Table 2: Proposed ASGIP Indicators for M&E**

ASGIP Key Results			
<ul style="list-style-type: none"> <li>Increased Ag-Sector contribution to GDP</li> <li>Increased self-sufficiency through local food supply chains</li> <li>Decreased levels of stunting in children under 5 years</li> </ul>		<ul style="list-style-type: none"> <li>Increased agricultural productivity and value addition</li> <li>Increased profitability for all value chains actors</li> <li>Decreased levels of people living below poverty line</li> </ul>	
Program-Indicators			
Program 1 Governance, Management & Innovation	Program 2 National Food & Nutrition Security	Program 3 Livestock Production for Import Substitution	Program 4 Crop Production for Export Earnings
<ul style="list-style-type: none"> <li>Increased use of sustainable technologies</li> </ul>	<ul style="list-style-type: none"> <li>Increased production of nutritious food crops</li> </ul>	<ul style="list-style-type: none"> <li>Increased percentage of local meat consumed</li> </ul>	<ul style="list-style-type: none"> <li>Increased export value of cash crops</li> </ul>
Sub-Program Indicators			
<p><b>1.1 Effective &amp; efficient agri-sector management</b></p> <ul style="list-style-type: none"> <li>Increased public investment in the agriculture sector</li> <li>Agri-information and technologies available online @ MAL-Portal</li> <li>Number of trained male and female MAL subject matter experts (crops &amp; livestock)</li> <li>Number of functioning PPPs and PPs</li> </ul> <p><b>1.2 Agriculture Technology and Research</b></p> <ul style="list-style-type: none"> <li>Number of recommended varieties released and adopted.</li> <li>Number of participatory research conducted</li> </ul> <p><b>1.3 Advisory Services</b></p> <ul style="list-style-type: none"> <li>Number of adopted technologies</li> <li>Number farmers satisfied with extension services</li> <li>Percentage of farmers joining producer groups</li> </ul> <p><b>1.4 Sustainable land use</b></p> <ul style="list-style-type: none"> <li>Number of resilient farming systems with high biodiversity promoted</li> <li>Number of sustainable land use practices promoted</li> </ul> <p><b>1.5 Biosecurity and improved market access</b></p> <ul style="list-style-type: none"> <li>Biosecurity infrastructure in place and operational</li> <li>New trade agreements for commodity exports</li> </ul>	<p><b>2.1 Food Systems</b></p> <ul style="list-style-type: none"> <li>Reduced percentage of imported vegetables and fruits</li> <li>Increased use of short supply chains around local market centres</li> <li>Increased percentage of recycled food waste from market places</li> </ul> <p><b>2.2 Availability of diverse exotic and traditional horticultural crops</b></p> <ul style="list-style-type: none"> <li>Increased availability of traditional food crops at urban and rural markets</li> <li>Increased availability of locally produced exotic vegetables at urban and rural markets</li> </ul> <p><b>2.3 Availability of locally produced meat</b></p> <ul style="list-style-type: none"> <li>Increased self-sufficiency of locally produced meat at rural centres and markets</li> </ul> <p><b>2.4 Rice-farming systems</b></p> <ul style="list-style-type: none"> <li>Increased area cultivated under profitable rice-farming systems</li> </ul> <p><b>2.5 Disaster preparedness and recovery.</b></p> <ul style="list-style-type: none"> <li>Increased numbers of MAL nurseries across the country for timely supply of seeds and seedlings</li> <li>Number of crop and livestock risk assessments done</li> </ul>	<p><b>3.1 Livestock services (public &amp; private)</b></p> <ul style="list-style-type: none"> <li>Number of veterinarians available in-country</li> <li>Number of slaughter facilities operational</li> <li>Number of breeding farms operational (cattle, pigs, poultry)</li> <li>Increased percentages of locally produced stock feed and day old chicks</li> </ul> <p><b>3.2 Reduced beef imports</b></p> <ul style="list-style-type: none"> <li>Increased percentage of domestic beef production versus imports</li> <li>Increase in area of silvopastoral cattle farming systems.</li> </ul> <p><b>3.3 Reduced pork imports</b></p> <ul style="list-style-type: none"> <li>Increased number of domestic piggeries</li> <li>Increased percentage of domestic pork production versus imports</li> </ul> <p><b>3.4 Reduced poultry imports</b></p> <ul style="list-style-type: none"> <li>Increased percentage of domestic poultry/duck production versus imports</li> <li>Increased percentage of domestic egg production versus egg imports</li> </ul> <p><b>3.5 Honey production</b></p> <ul style="list-style-type: none"> <li>Increased production of premium honey for local consumption</li> <li>Increased exports of premium honey</li> </ul>	<p><b>4.1 Coconut industry</b></p> <ul style="list-style-type: none"> <li>Increased area of sustainable coconut farming systems</li> <li>Increased exports and yields per coconut tree</li> <li>Improved quality of coconut products</li> <li>Increased profit margins for farmers</li> </ul> <p><b>4.2 Cocoa industry</b></p> <ul style="list-style-type: none"> <li>Increased area of sustainable cocoa farming systems</li> <li>Increased exports and yields per cocoa tree</li> <li>Improved quality of cocoa beans</li> <li>Increased profit margins for farmers</li> </ul> <p><b>4.3 High Value Crops</b></p> <ul style="list-style-type: none"> <li>Increased area of cassava production</li> <li>Availability of improved cassava varieties</li> <li>Increased use of cassava in animal feed formulation</li> <li>Increased exports of quality kava</li> <li>Increased exports of local fruits and nuts based products</li> <li>Increased production of high value crops (coffee, spices, etc.)</li> </ul>

# CHAPTER 5

## ASGIP BUDGET

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The Government recognizes that substantial investment is needed over a sustained period to reinvigorate the agriculture sector and support its transformation into an efficient, vibrant and productive sector. Over the past decade, the sector has been constrained by the lack of investment, both public and private investment. Effecting the transformational change envisaged to propel the sector towards its true potential will require strong political will, visionary leadership, and bold decision making.

Under the proposed budget, the SIG, in partnership with all stakeholders, including development partners, commit to the implementation of the ASGIP in its entirety. The underlying assumption of this scenario is the gradual increase in funding of MAL from the current level of 1.5 per cent of the total national budget to 6 per cent by 2030. The quadruple increase in funding relative to the whole national budget is envisaged to comprise SIG funds, private sector contributions, and development partner funding (both grant and concessionary loans).

### Key assumptions

Based on past trends, the SIG total national budget is assumed to grow by 5 per cent each year. As the national budget grows, so does the funding of MAL's recurrent and development budget. In light of the extensive institutional strengthening, staff recruitments, training and capacity enhancement and system and process strengthening planned for MAL, the recurrent budget is envisaged to increase sharply in the first 4-years of implementation i.e. 2021-2024, by 30 per cent, 35 per cent, 15 per cent and 10 per cent respectively. Thereafter, a nominal increase in the recurrent budget of 4 per cent each year is assumed.

In relation to the development budget, the groundwork for reviving dormant or stagnant industries such as cocoa and coconut, and launching new industries such as poultry, beef, pork and kava is prioritized in the first three years of implementation. These early years will provide the strategic direction and focus for the targeted industries to ensure their development pathway is efficient, competitive and environmentally sustainable. The crystallisation of these competitive and sustainable pathways for the targeted commodities will pave the way for scaling up production, diversifying the commodity base, and increasing agro-processing in the subsequent years.

### Budget Summary

The funding channelled through MAL, consisting of both SIG funds and development partner financing, is envisaged to increase on average by 48.6 per cent each year in 2021-2023, by an average of 18.6 per cent each year in 2024-2026 and by an average of 5 per cent each year from 2027-2030. Over the 10-year period, the total funding envelop is approximately SBD\$2.572 billion, of which SBD\$732.66 million (28.5 per cent) is for the recurrent budget and SBD\$1.838 billion (71.5 per cent) for the development budget. Proportionally, the balance of funding within MAL's annual budget slowly shifts from being driven by the recurrent budget (currently 58.1 per cent of MAL's budget in 2020), towards an industrial focus through the development budget (envisaged to comprise 74.9 per cent of MAL's budget by 2030). This shift is critical to supporting the agricultural revolution in the country. MAL's annual budget will rise from SBD\$55.78 million in 2020 to SBD\$362.39 million in 2030.



## **Recurrent Budget**

The total envelop for the Recurrent Budget over the 10-year period is SBD\$732.67 million, of which SBD\$345.89 million is for *payroll charges* (47.2 per cent) and SBD\$386.78 million is for *other charges* (52.8 per cent). MAL's recurrent budget will rise from SBD\$32.41 million in 2020 (where it comprised 58.1 per cent of the MAL's total budget) to SBD\$91.04 in 2020 (where it will comprise 25.1 per cent).

Under this projection, recurrent expenditure increases sharply in the first four years to reflect a focus on improving public service delivery – financing of current and new staff positions, re-establishing stations in the provinces, raising the skill and competency of extension and research services and expanding their outreach to be more accessible to farmers, and ensuring support services are well resourced to effectively facilitate the extensive development agenda.

Within MAL, the proportional distribution of recurrent expenditure budget between the five departments has been maintained at 2020 level whereby HQ and Administration is allocated 43 per cent of the total recurrent budget, followed by Extension & Training (27.9 per cent), Quarantine (11.6 per cent), Veterinary & Livestock (7.4 per cent), Research (7 per cent), Planning & Management (2.1 per cent) and Information Unit (1 per cent).

## **Development Budget**

The total budget envelop for the Development Budget over the 10-year period is SDB\$1.838 billion. The required 2021 Development Budget amounts to SDB\$51.47 million, an increase of 120 per cent over the 2020 Development Budget reflecting the need for an adequate response to the COVID-19 crisis. Then there is a yearly increase resulting in 2030 Development Budget of SDB\$271.36 million.

The development budget of MAL has been reorganised into four national programs which broadly reflect the strategic areas of emphasis of the ASGIP i.e. in strengthening agriculture sector governance, management and fostering innovation; strengthening food and nutrition security, particularly in the post-COVID-19 era and in anticipation of long-term impacts of climate change; and consistent with the areas of comparative advantage of the country, establishing competitive livestock and crop industries that reduce reliance on imports and produce high value niche products for the global market. The programs and their respective sub-programs are well aligned to the 2019 DCGA Policy Translation Framework (PTF) and to the Government's Policy Re-Direction (PRD) of 2021.

Program 1 on "Governance, Management & Innovation" includes the vital and cross-cutting areas of effective sector management, research and technology development, agricultural advisory services, land use and biosecurity. Over a ten year period the program accounts for the highest share of the total development budget envelop i.e. 42 per cent.

Program 2 on National Food & Nutrition Security includes the essential areas of sustainable food systems, increased self-sufficiency in terms of meat and staple crops, and disaster preparedness and recovery. Over a ten year period the program accounts for 7 per cent of the total development budget.

Program 3 on National Livestock Development concerns the professional development of the livestock sector focusing on cattle, pigs, poultry and honey production. Over a ten year period the program accounts for 19 per cent of the total development budget.

Program 4 on National Crop Development comprises traditional (cocoa, copra) as well as new export commodities (virgin coconut oil, noni, spices, kava, etc.). Over a ten year period the program accounts for 32 per cent of the total development budget.

A summary of the proposed total MAL Budget (Recurrent and Development Budget) is given in Table 12, a breakdown of the Development Budget per program and sub-programs is provided in Table 13.

## Budget Summary

**Table 3: ASGIP Total Budget (Full Implementation of ASGIP)**

**Assumption:** The SIG Total National Budget increases by 5% each year. MAL's Budget as a proportion of Total National Budget increases to 6% by 2025, largely driven by increases in Development Budget. The Recurrent Budget increases sharply in the first 4-years (2021-2024) by 30%, 35%, 15% and 10%, to take into account increased staff recruitments and capacity enhancement to support the implementation of the ASGIP. A nominal increase of 4% each year thereafter is assumed. Financing gaps to be addressed through collaboration with private sector and international development partners.

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>MAL BUDGET</b> <i>(In SBD\$m)</i>											
<b>RECURRENT BUDGET</b>	<b>32.41</b>	<b>42.13</b>	<b>56.87</b>	<b>65.41</b>	<b>71.95</b>	<b>74.82</b>	<b>77.82</b>	<b>80.93</b>	<b>84.17</b>	<b>87.53</b>	<b>91.04</b>
<i>(% of MAL Budget)</i>	58.1%	45.0%	42.1%	36.2%	31.3%	26.3%	26.1%	25.9%	25.6%	25.4%	25.1%
HQ & Admin	13.95	18.13	24.48	28.15	30.96	32.20	33.49	34.83	36.22	37.67	39.18
Veterinary & Livestock	2.40	3.12	4.21	4.84	5.32	5.54	5.76	5.99	6.23	6.48	6.73
Agriculture Research	2.26	2.94	3.96	4.56	5.01	5.21	5.42	5.64	5.87	6.10	6.34
Agriculture Quarantine	3.76	4.89	6.61	7.60	8.36	8.69	9.04	9.40	9.78	10.17	10.58
Agriculture Information Unit	0.33	0.43	0.58	0.67	0.73	0.76	0.79	0.82	0.86	0.89	0.93
Agriculture Planning & Management	0.68	0.88	1.19	1.37	1.51	1.57	1.63	1.70	1.76	1.83	1.91
Agriculture Extension & Training	9.03	11.74	15.85	18.23	20.05	20.85	21.68	22.55	23.45	24.39	25.37
<b>DEVELOPMENT BUDGET</b>	<b>23.38</b>	<b>51.47</b>	<b>78.21</b>	<b>115.08</b>	<b>158.11</b>	<b>209.32</b>	<b>220.33</b>	<b>232.12</b>	<b>244.52</b>	<b>257.60</b>	<b>271.36</b>
<i>(% of MAL Budget)</i>	41.9%	55.0%	57.9%	63.8%	68.7%	73.7%	73.9%	74.1%	74.4%	74.6%	74.9%
Program 1: Governance, Management & Innovation		22.09	36.59	54.10	69.64	90.56	89.72	94.52	99.57	107.63	110.32
Program 2: National Food & Nutrition Security		4.12	4.52	6.28	9.53	12.82	15.46	16.28	17.15	17.75	18.49
Program 3: National Livestock Development		10.27	15.00	22.10	33.45	42.36	40.51	42.68	44.96	46.52	48.46
Program 4: National Crop Development		14.99	22.10	32.59	45.49	63.58	74.64	78.63	82.84	85.70	94.09
<b>TOTAL MAL BUDGET</b>	<b>55.78</b>	<b>93.60</b>	<b>135.08</b>	<b>180.48</b>	<b>230.06</b>	<b>284.15</b>	<b>298.15</b>	<b>313.05</b>	<b>328.69</b>	<b>345.13</b>	<b>362.39</b>
<i>(% change in MAL Budget)</i>	-	67.9%	44.3%	33.6%	27.5%	23.5%	4.9%	5.0%	5.0%	5.0%	5.0%
<i>(% of which is Payroll - Salaries)</i>	27.4%	21.2%	19.9%	17.1%	14.8%	12.4%	12.3%	12.2%	12.1%	12.0%	11.9%
<b>TOTAL NATIONAL BUDGET (Estimate)</b>	<b>3,710.00</b>	<b>3,895.50</b>	<b>4,090.28</b>	<b>4,294.79</b>	<b>4,509.53</b>	<b>4,735.00</b>	<b>4,971.75</b>	<b>5,220.34</b>	<b>5,481.36</b>	<b>5,755.43</b>	<b>6,043.20</b>
<i>(MAL Budget as % of Total)</i>	1.5%	2.4%	3.3%	4.2%	5.1%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%

## Budget Programs

**Table 4: ASGIP Development Budget**

ASGIP Development Budget (SBD\$m)		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL
<b>Program 1</b>	<b>Governance, Management &amp; Innovation</b>	<b>22.09</b>	<b>36.59</b>	<b>54.10</b>	<b>69.64</b>	<b>90.56</b>	<b>89.72</b>	<b>94.52</b>	<b>99.57</b>	<b>107.63</b>	<b>110.32</b>	<b>774.74</b>
Sub-Program 1.1	Governance & Organizational Development	4.86	5.33	7.72	11.60	16.51	16.28	17.15	18.07	23.31	22.48	143.31
Sub-Program 1.2	Research & Knowledge Management	5.93	14.74	23.62	25.93	29.46	19.62	20.67	21.77	22.52	23.46	207.71
Sub-Program 1.3	Agriculture Advisory Services	4.10	5.15	6.89	9.13	12.68	15.59	16.43	17.31	17.90	18.65	123.84
Sub-Program 1.4	National Land Use Planning	1.66	4.76	6.31	8.25	11.46	13.08	13.78	14.51	15.02	15.64	104.47
Sub-Program 1.5	Biosecurity Services	5.54	6.61	9.56	14.73	20.46	25.15	26.50	27.91	28.88	30.08	195.42
<b>Program 2</b>	<b>National Food &amp; Nutrition Security</b>	<b>4.12</b>	<b>4.52</b>	<b>6.28</b>	<b>9.53</b>	<b>12.82</b>	<b>15.46</b>	<b>16.28</b>	<b>17.15</b>	<b>17.75</b>	<b>18.49</b>	<b>122.41</b>
Sub-Program 2.1	Sustainable Food System Development	0.46	0.55	0.78	1.21	1.67	2.00	2.10	2.21	2.30	2.40	15.69
Sub-Program 2.2	Horticulture & Lokol Kaikai Promotion	1.90	1.87	2.68	4.12	5.32	6.54	6.89	7.26	7.51	7.82	51.91
Sub-Program 2.3	Village Small Livestock Development	0.67	0.80	1.15	1.77	2.45	3.02	3.18	3.35	3.47	3.61	23.47
Sub-Program 2.4	Rice Promotion for Import Substitution	0.92	1.10	1.39	1.99	2.76	3.14	3.31	3.49	3.61	3.76	25.48
Sub-Program 2.5	Disaster Preparedness & Recovery	0.17	0.20	0.29	0.44	0.61	0.75	0.79	0.84	0.87	0.90	5.87
<b>Program 3</b>	<b>National Livestock Development Program</b>	<b>10.27</b>	<b>15.00</b>	<b>22.10</b>	<b>33.45</b>	<b>42.36</b>	<b>40.51</b>	<b>42.68</b>	<b>44.96</b>	<b>46.52</b>	<b>48.46</b>	<b>346.31</b>
Sub-Program 3.1	Livestock Services Development	3.76	6.29	9.63	14.25	15.70	17.79	18.75	19.75	20.43	21.29	147.64
Sub-Program 3.2	Cattle Industry Development	3.69	5.34	7.65	11.79	16.36	10.06	10.60	11.17	11.55	12.03	100.25
Sub-Program 3.3	Pig Industry Development	0.78	0.94	1.34	2.06	2.86	3.52	3.71	3.91	4.04	4.21	27.38
Sub-Program 3.4	Poultry Industry Development	1.12	1.34	1.91	2.95	4.09	5.03	5.30	5.58	5.78	6.02	39.11
Sub-Program 3.5	Honey Industry Development	0.91	1.09	1.56	2.41	3.34	4.11	4.33	4.56	4.72	4.91	31.94
<b>Program 4</b>	<b>National Crop Development Program</b>	<b>14.99</b>	<b>22.10</b>	<b>32.59</b>	<b>45.49</b>	<b>63.58</b>	<b>74.64</b>	<b>78.63</b>	<b>82.84</b>	<b>85.70</b>	<b>94.09</b>	<b>594.65</b>
Sub-Program 4.1	Coconut Industry Development	5.81	9.14	12.70	18.82	26.15	30.38	32.00	33.71	34.87	36.33	239.92
Sub-Program 4.2	Cocoa Industry Development	5.26	8.28	12.62	16.65	23.11	26.66	28.09	29.59	30.61	31.89	212.76
Sub-Program 4.3	High Value Crops Development	3.92	4.68	7.27	10.02	14.32	17.60	18.55	19.54	20.21	25.87	141.97
<b>TOTAL DEVELOPMENT BUDGET</b>		<b>51.47</b>	<b>78.21</b>	<b>115.08</b>	<b>158.11</b>	<b>209.32</b>	<b>220.33</b>	<b>232.12</b>	<b>244.52</b>	<b>257.60</b>	<b>271.36</b>	<b>1,838.11</b>

# CHAPTER 6

## ASGIP PLAN OF ACTION

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
<b>Program 1. Governance, Knowledge Management &amp; Innovation</b>					
<b>Sub-Program 1.1 Governance &amp; Organisational Development</b>	PTF 5.2.1.1 (d) PRD (f) PTF = Policy Translation Framework PRD = Policy Re-Direction	<i>“Improved organizational structure and culture that allows for innovation, efficiency, effectiveness, and stronger industry linkages to better meet the farmers’ and industry needs, and enable national goals for productivity, inclusive economic growth and food security for all”</i>			
Component 1.1.1 Agriculture Sector Governance	MAL is equipped with an effective, efficient, and transparent governance structure, supporting the development of a thriving and sustainable agricultural sector.	1) ASGIP approved by Cabinet and published.	1 strategy	by 2021	-
		2) Agriculture Advisory Council established.	1 council	by 2021	-
		3) Central ASGIP Implementation Unit established and resourced	1 unit	by 2021	-
		4) At least 5 Industry Working Groups (cocoa & coconut, poultry, pork, cattle, horticulture/fruits/spices, etc.) established.	# of WGs operational	5 by 2023	+2 by 2023
		5) National Rural Land Use Policy reviewed and approved.	1 policy approved	by 2022	-
		6) National Agriculture Research Policy, Acts & Regulations updated	1 policy approved	by 2022	-
		7) National Agriculture Act updated to include the protection of rights of Solomon Islands indigenous peoples in reference to their agricultural lands.	1 Act approved	by 2022	-
Component 1.1.2 MAL Organisational Development	MAL’s organizational structure defines departmental functions and responsibilities, and enables effective, efficient and transparent ASGIP implementation, cross-	1) MAL’s departmental functional review defines roles, functions and responsibilities to meet the country’s agriculture development needs.	functional review done	by 2022	-
		2) Preferred MAL organizational structure (according to completed functional review) submitted to Ministry of Public Service (MPS).	organizational structure submitted	by 2022	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
	departmental collaboration, as well as responsive service delivery.	3) MAL/MPS has submitted organizational structure to Cabinet for approval, and Cabinet has approved organizational structure	new structure approved	by 2022	-
Component 1.1.3 Process Management & Accountability	MAL's administrative and management processes are based on accountability, transparency, efficiency and effectiveness.	1) Robust system recording and monitoring MAL assets in Honiara and provinces in place and up-to-date.	asset mgmt. in place	by 2023	-
		2) MAL approved guidelines for procurement and project management in place.	guidelines in place	by 2023	-
		3) Internal Audit and Compliance Unit established and functioning.	unit operational	by 2023	-
		4) Project M&E System aligned with MNPDC and data collection responsibilities and guidelines clarified and in place.	2 M&E cycles/year	yearly	yearly
Component 1.1.4 Human Resource Development	A transparent recruitment, promotion and staff development process enables staff satisfaction and excellent service delivery. Equal opportunities for all genders, with a special priority to increase the engagement of young professionals are in place.	1) Key personnel recruited as per required expertise and staffing levels (all established posts filled; equal opportunities for men/women).	Staffing complete	by 2024	Refill as needed
		2) Updated MAL Staff Development Plans for each department in place and operational with equal opportunities for male/female staff.	plans updated & in place	by 2022	Update regularly
		3) Percentage of young staff (below 30 years of age) will be increased to at least 20%, and staff between 30-40 years of age to at least 45% (all with equal opportunities for men/women).	target % achieved	at least 15% & 40 by 2025	at least 20% & 45 by 2030
Component 1.1.5 Information Technology Development	MAL's services to the agriculture sector have an increased coverage and outreach through the use of modern internet based technologies.	1) MAL web-based Agri-Tech Portal serving as a national agricultural information and database established.	Agri-Portal operational	by 2022	update regularly
		2) Mobile phone app for viewing agricultural best practices established.	app operational	by 2024	update regularly
		3) Mobile phone app for viewing market prices for major commodities established.	app operational	by 2024	update regularly
<b>Sub-Program 1.2 Research &amp; Knowledge Management</b>	<b>PTF 5.2.1.1 (b, e, h) PRD (a, c, e);</b>	<i>"Enhanced contribution of agricultural research to sustainable agricultural productivity, economic growth, competitiveness, food security and poverty eradication"</i>			
Component 1.2.1 Research	MAL's research facilities enable the Ministry to address the	1) National Agriculture Research Centre infrastructure and facilities constructed and fully resourced and equipped.	1	partly finished	by 2025

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
Infrastructure Development	agriculture sector's needs for improved performance in a pragmatic way.	2) New Field Experimental Stations (FES) at Tenaru, Gojoruru and Santa Cruz established	3	by 2023	-
		3) Ringi FES upgraded with 1 new staff house, 1 dormitory, 1 garage/storage shed	1	by 2023	-
		4) Soils laboratory established and functional	1	by 2024	-
		5) Plant Nutrition laboratory established and functional	1	by 2024	-
		6) Avuavu FES revitalised or relocated to an alternative site for addressing food security and rural livelihoods	1	-	by 2026
		7) The existing Biotechnology and Plant Protection Laboratory at Henderson is expanded and improved	2	-	by 2027
		8) 1 High altitude research station established	1	-	by 2030
Component 1.2.2 Plant & Animal Breeding	MAL's breeding activities contribute to the sector's sustainable and environmentally sound increase of its productivity, climate resilience, and to national food and nutrition security.	1) For research on COCONUT see component 4.1.2	-	-	-
		2) For research on COCOA see component 4.2.2	-	-	-
		3) For research on KAVA see component 4.3.1	-	-	-
		4) For research on COFFEE see component 4.3.2	-	-	-
		5) For research on CASSAVA see component 4.3.3	-	-	-
		6) For research on SPICES see component 4.3.4-A	-	-	-
		7) For research on NONI see component 4.3.4-B	-	-	-
		8) FOOD: Early maturing, pest/disease tolerant & climate change resilient varieties of important food security crops (e.g. sweet potato, yam, taros, cassava, traditional crops)	# varieties identified	4 by 2023	+ 4 by 2028
		9) FOOD: Development/selection of food, especially also traditional crops, with high nutritional qualities, high carotene content, etc.	# varieties identified	4 by 2023	+ 4 by 2028
		10) FOOD: Identification of high value crops suitable for local climatic conditions (including temperate crops) such as onion, Irish potato	# varieties identified	3 by 2024	+ 3 by 2028
		11) FRUITS/NUTS: Revitalisation of fruit and nut trees germplasm collections through (a) Relocation of fruit & nut trees germplasm collections at Ringi FES to Gojoruru FES, and (b) Re-establishment of a breadfruit germplasm collection (gene bank) on Santa Cruz, Temotu	# of collections established	2 by 2024	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		12) Production of tissue cultured (clean) planting materials of at least 5 selected crops by 2023 onwards for farmers	# of plant species	2 by 2024	+ 2 by 2029
Component 1.2.3 Agriculture Technologies & Food Safety	Agricultural production technologies (good agricultural practices), post-harvest operations, and simple on farm food processing and storage techniques are compiled and published.	1) Effective Bio-control technologies for controlling the spread and damage from CRB through field evaluation of <i>metarhizium anisopliae</i> , and <i>oryctes rhinoceros nudivirus</i> biocontrol agents.	# field evaluations	3 by 2023	-
		2) Effective technologies to control the Giant African Snail by biocontrol methods – using <i>platydemus manokwari</i> (New Guinea flat worm, present on Guadalcanal/Makira)	# of techno. developed or tested	1 by 2024	+ 1 by 2028
		3) Development or testing of efficient, effective and sustainable cocoa drying technologies suitable for small & medium farm sizes	# of techno. developed or tested	3 by 2024	-
		4) Testing and introduction of appropriate farming equipment to boost agriculture output (e.g. tractors, power tillers with associated implements (soil cultivation, transport, etc.)	# of equipment tested	5 by 2023	+ 5 by 2028
		5) Postharvest-, food processing-, value adding technologies developed or tested for selected crops (root-crop flour, solar drying, fermentation, drinks, etc.)	# of techno. developed or tested	5 by 2023	+ 5 by 2028
		6) MAL Research has capacity to perform PCR/ Gene mapping for important economic & indigenous crops	# of equipment	-	1 set by 2030
		7) Develop or test post-harvest handling processes and technics to reduce losses, improve storage life and increase market quality of crops	# of techno. developed or tested	2 by 2024	+ 3 by 2028
		8) Development or testing of hydroponic production systems for vegetables	# of techno. developed or tested	-	2 by 2026
		9) Review policies, acts and regulations pertaining to the sale, use, and disposal of agrochemicals in line with international regulations and agreements	All relevant legislation	by 2024	-
		10) All pesticides sold by commercial suppliers are registered according to the latest applicable Acts, Laws & Regulations	No illegal agro-chemical available	-	by 2026

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		11) All suppliers and sales agents of agro-chemicals, including, bioagents, traps, lures, etc. identified and registered	all vendors, agents registered	-	by 2026
		12) Liquid sea weed fertilizer is made available as alternative organic fertilizer, especially for vegetable production.	# of farmers using it	100 by 2024	+ 200 by 2030
		13) Improved recycling and composting technologies propagated among farming community	# of farmers using it	400 by 2024	+ 1000 by 2030
Component 1.2.4 Farming Systems Development	Climate change resilient, environmentally sound, and productive farming systems identified or developed, described, published and promoted.	1) Development of intercropping systems to address soil erosion & fertility, land degradation (can be on lead farmers plots)	# of intercropping demo-sites	15 by 2024	+ 15 by 2030
		2) Best practices agro-forestry demonstration sites established, monitored, and evaluated (at least 50% are organic); agroforestry nurseries established at demonstration sites	# of agroforestry demo-sites	15 by 2024	+ 15 by 2030
		3) VANILLA: development of small holder intensive & intercropping production systems for Vanilla (can be part of agro-forestry demonstration pots)	# of Vanilla farms established	10 by 2024	+ 10 by 2030
		4) Development of new or testing of existing organic farming practices and systems	# of pilot organic farms established	10 by 2024	+ 12 by 2030
		5) Climate change adaptation/mitigation: development or testing of crop varieties tolerant to saline conditions, drought, wet conditions, or pertinent pests and diseases	# of resilient crop varieties	5 by 2024	+ 5 by 2030
Component 1.2.5 Innovation & Knowledge Management	Agricultural information and data are made accessible through online as well as offline publication channels.	1) Revitalise MAL Research Library/Database system	1 data system	by 2023	-
		2) Publish MAL research bulletins / technical journals	# of publications	2 per year	2 per year
		3) Best practices for crop and livestock production (including INPM and organic agriculture) are compiled in easily understandable form and published on MAL Agri-Tech Portal	# of technologies on Portal	12 by 2024	+ 6 by 2028



ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		4) Support PhD and Masters students as well as SINU/RTC students' to conduct local research studies, on farm trials/demonstrations, and other research activities.	# of students supported per year	40 by 2024	+ 60 by 2030
<b>Sub-Program 1.3 Agriculture Advisory Services</b>	PTF 5.2.1.1 (a, d, e, f, i, k) PRD (a, b, c, f)	<i>“Increased and inclusive farmer access to relevant information, knowledge and technology through effective, efficient, and decentralized extension services coupled with increasing private sector involvement in line with Government policy”.</i>			
Component 1.3.1 Extension Policy, Strategy & Coordination	Sub-sector and/or commodity specific policies and strategies reviewed and updated, collaboration and coordination with private sector and farmer organizations strengthened.	1) Agriculture Technology Management Committee established	1 committee	by 2021	-
		2) Extension Policy & Strategy 2022 updated and approved	1 document	by 2023	-
		3) Coconut Sub-Sector policy/strategy updated and approved	1 document	by 2022	-
		4) Cocoa Sub-Sector policy/strategy updated and approved	1 document	by 2022	-
		5) Kava Sub-Sector policy/strategy developed and approved	1 document	by 2021	-
		6) Noni policy/strategy developed and approved	1 document	by 2021	-
		7) Rice Sub-Sector policy/strategy updated and approved	1 document	by 2023	-
		8) Lokol Kaikai Framework updated and approved	1 document	by 2022	-
		9) Organic policy/strategy updated and approved	1 document	by 2023	-
		10) Oil palm policy/strategy updated and approved	1 document	by 2023	-
		11) Spices & herbs policy/strategy developed and approved	1 document	by 2023	-
		12) Coffee strategy to be developed and approved	1 document	by 2023	-
		13) MAL facilitates Public-Private-Partnerships (PPPs) to facilitate local food as well as export supply chains	# of PPPs facilitated	6 PPPs by 2024	+6 PPPs by 2029
		14) MAL supports and trains farmer organizations (FO) to better manage their associations.	# of FOs supported	40 FOs by 2024	+60 FOs by 2029
Component 1.3.2 Extension Capacity Development.	MAL's services to its clients are delivered under the paradigm of gender equality and social inclusion, and deliver practical and up-to-date agricultural information and practices.	1) A Training Needs Assessment for Extension Services will inform the Staff Development Plan (SDP) for extension staff under component 1.1.4	# of assessments	1 by 2022	+ 1 by 2026
		2) Subject Matter Specialists (SMS) for strategic agricultural commodities trained (or re-trained) with equal opportunities for male/female staff.	# of SMS trained	6 each year	6 each year
		3) Development and adoption of an Extension Officers Career Scheme of Service.	1 document	by 2022	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		4) Mainstreaming Gender and Social Inclusion (GSI) into the design and delivery of advisory services.	1 policy guideline	by 2022	-
Component 1.3.3 Extension Infrastructure Development	MAL's central, and specifically also its decentralised infrastructure in the provinces are modernised and well-equipped to deliver the needed services in good as well as in times of crisis.	1) New staff houses (2 bed rooms) built/repared in Temotu (x2), Makira (x3), Malaita (x4), Guadalcanal (x2), Central (x2), Isabel (x3), Western (x4), Choiseul (x3), and Renbel (x1)	as listed in activity	70% per 2024	+ 30% by 2028
		2) ATCs (PDF- Choiseul, Mile Six- West, Gozoruru- Isabel, Hakama- Central, Hauratarata- Makira, Newi- Temotu, Tenaru FES) rehabilitated	as listed in activity	30% by 2024	+ 70% per 2028
		3) All MAL Extension Offices have (i) access to internet, (ii) access to hand held GPS devices, (iii) access to online offline extension technologies (e.g. tablets, micro-projectors), and (iv) access to desktops or laptops	as listed in activity	by 2024	-
		4) Logistics: Extension has access to Pickup trucks (x6), Motor Cycles (x20), Boats (x9), OBM (x8), HFA Radio (wireless) (x20)	as listed in activity	by 2022	2023
		5) New Offices & storage sheds built/repared in Makira, Malaita, Guadalcanal, Western, Choiseul, and Renbel	as listed per activity	50% by 2024	+ 50% by 2028
Component 1.3.4. Women Development	Existing gender gaps are reduced through MAL's tailor made support for women and girls.	1) Women's agricultural extension service unit re-established and resourced within MAL extension department.	unit establ. and staffed	by 2022	-
		2) Training need assessment for female farmers and women involved in home gardens.	# of assessments	1 by 2022	+ 1 by 2026
		3) Develop an empowerment strategy for women and girls in collaboration between MAL-WAES and MWYCFA	# of strategies	1 by 2022	-
		4) Special support program for young women to engage in farming as a business as well as in other agribusinesses established and operational.	# number of women supported	80 by 2024	+ 120 by 2030
Component 1.3.5. Youth Development	More youth engage themselves in agriculture and agribusinesses through MAL's tailor made youth support services.	1) Youth people with special needs empowerment strategy and strengthen linkage with MWYCFA/RTCs/CBOs	# of strategies	1 by 2023	-
		2) Training need assessment for youth and people with special needs	# of assessments	1 by 2023	+ 1 by 2026
		3) Young RTC graduates are supported with "Seed Funding" for their agricultural/agribusiness activities (equal opportunities for men and women)	# number of graduates supported	80 by 2024	+ 120 by 2030

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		4) 'Youth in Agriculture Program' targeting youth participation in agriculture and agribusiness established and operational (equal opportunities for men and women)	# number of youth supported	80 by 2024	+ 120 by 2030
		5) Mechanisation in agriculture increased through youth entrepreneurship support program	# number of youth supported	30 by 2024	+ 70 by 2030
		6) "Annual Youth in Agriculture Show" to showcase emerging youth agri-entrepreneurs held.	# of shows	3 by 2024	+6 by 2030
		7) Practical farm experience internships in collaboration with public, private and non-governmental organizations implemented	# of internships	30 by 2024	+ 70 by 2030
<b>Sub-Program 1.4 National Land Use Planning</b>	<b>PTF 5.2.1.1 (h) PRD (e)</b>	<i>"Efficient and sustainable use of agricultural land resources according to agro-ecological zones and based on participatory processes".</i>			
Component 1.4.1 Capacity Building	The Land Use Planning Unit (LUPU) is equipped with needed hard- and software as well as with qualified staff to operate it, conduct surveys and produce practical maps	1) Land Use Planning Unit (LUPU) hardware upgraded, installed, and running (desktops, laptops, GPS, printer, plotter, soil auger).	as listed in activity	by 2022	-
		2) LUPU software upgraded, installed, and running (mapping software).	as listed in activity	by 2022	-
		3) LUPU logistic upgraded (vehicles, OBMs, boat)	as listed in activity	by 2022	-
		4) Increased staffing in the Land Use Planning Unit (equal opportunities for men and women)	# staff added	12 by 2023	-
		5) Increased annual capacity building for male and female staff in survey and mapping skills	# staff trained	6 by 2023	+ 6 by 2028
Component 1.4.2 Survey and Mapping	A national land use survey provides updated data on land use, farming systems and agricultural opportunity areas(AOA) which are used to create provincial and ward maps	1) National Survey conducted, current land use mapped, development constraints and options highlighted	National survey completed	-	1 by 2026
		2) Status of Agriculture Opportunity Areas (AOAs) updated (ownership, current and potential land use; development constraints and opportunities)	AOA status updated	2024	-
		3) Provincial and ward maps produced (outlining various parameters relevant to land use and agriculture such as suitability for certain crops/livestock systems)	# of provincial maps	5 by 2024	+ 4 by 2026

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
Component 1.4.3 Community Based Land Use Planning	In a collaborative and participatory process LUPU assisted communities to develop Land Use Plans.	1) Land Use Planning awareness and capacity building events conducted for provincial and constituency leaders (1-3 events per province)	# of awareness events	18 by 2024	-
		2) Community based land use plans (LUPs) and related community action plans completed	# of LUPs & action plans	20 by 2024	+ 30 by 2030
		3) Follow-up visits for community land use & action plan implementation	# of visits	20 by 2024	+ 30 by 2030
<b>Sub-Program 1.5 Biosecurity Services</b>	<b>PTF 5.2.1.1 (g) PRD (d)</b>	<i>“Enhanced protection from the incursion and impact of plant and animal pests and diseases, and improved market access through compliance with SPS and TBT agreements”</i>			
Component 1.5.1 Biosecurity Infrastructure	Required infrastructure, equipment, logistics and means of communication are in place to guarantee the implementation and management of the required national and international biosecurity measures	1) Biosecurity Headquarters in Honiara 1	1	1 by 2023	-
		2) Biosecurity Operations Centre (Henderson MAL area) 1 (Post-border office 1, Border office 1, Pre-border office 1, Laboratory (standalone) 1	as listed in activity	operation centre by 2024	all other by 2026
		3) Provincial offices for Choiseul Bay, Shortlands, Munda, Gizo, Noro	# of offices	3 by 2024	+ 2 by 2028
		4) Staff Houses: 2 Shortlands, 2 Choiseul, 2 Lata, 2 Gizo, 1 Munda, 4 Noro, 10 Honiara	# of staff houses	9 by 2024	+ 14 by 2028
		5) Biosecurity Holding Areas facilities	1	1 by 2023	-
		6) Fumigation Treatment: Munda 1, Noro 1, Honiara 1	as listed in activity	by 2024	-
		7) Incinerators: Gizo 1, Noro 1, Lata 1, Choiseul Bay 1	as listed in activity	-	by 2026
		8) Motor cycle, Honiara 6, Noro 2 Gizo 1, Choiseul bay 1, Lata 1, Auki 1, Kirakira 1, Renbel 1, Buala 1; Motor vehicle: Honiara Bus 2, Land Cruiser 2, Twin Cab Hilux 3	as listed in activity	40 % by 2024	+ 60 % by 2028
		9) Speed craft: Shortland 1, Lata 1, Honiara 1; OBM 75 HP with boats: Gizo 1, Noro 1. Choiseul 1	as listed in activity	by 2024	-
		10) X-ray machine: airport (x)2, and Mobile scanner (vehicle): seaport (x1)	as listed in activity	by 2024	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		11) Equipment : VHF Radios: Lata 1 Shortland 1, Gizo 1; Inspection kits 40; Sampling tools/kit 40, GPS 5, Camera, Laptop, Desktop, Drone; Entomology Equipment, etc.	as listed in activity	40 % by 2024	+ 60 % by 2028
Component 1.5.2 Biosecurity Prevention Measures	Biosecurity prevention measures, including border surveillance, inspection of vessels, passengers and cargo at all ports of entry are in place and treatment as well as quarantine procedures functional.	1) Fumigation/ Treatment facilities (Cold treatment; Hot water treatment)	as listed in activity	by 2024	-
		2) Establish Post Entry Quarantine (PEQ) facilities for plants (Munda 1), for animals (Honiara 1)	as listed in activity	by 2024	-
		3) Compliance agreements for Biosecurity Holding Areas (BHA), BGHA, BPHA in place	# of agreements adopted	3 by 2024	update by 2026
		4) Knowledge & Skills (induction training, SOP training, attachments, pest diagnostics, regulation training, fumigation, auditing)	# of staff (re-) trained	30 by 2024	+ 50 by 2030
		5) Update schedule 17 of Biosecurity Regulations	# number of updates	1 by 2022	update by 2026
		6) Marine Pest management (Fisheries & MAL collaboration; develop SOPs and adopt IMO standards on biofouling; Training on Biofouling / ballast water procedures, monitoring and verification;	# number of SOPs developed	1 by 2024	update by 2026
Component 1.5.3 Surveillance & Control	Regular pest and disease surveillance conducted, pest and disease lists updated, containment and eradication measures implemented as required.	1) Develop early warning system ( prevention ,preparedness and response) on pest & diseases incursions	system operational	1 by 2022	update by 2026
		2) Offshore surveillance with neighbouring countries and trading partners	agreements in place	-	by 2026
		3) Training of farmers to assist BSI of pest monitoring and surveillance (in each province)	# farmers trained	40 by 2024	+ 50 by 2028
		4) Establish networking with NGO's farmers and communities on pest reporting obligations – Biosecurity Act 2013	# of networks	4 by 2024	+ 5 by 2028
		5) Develop a biosecurity response plan including control measures for specific pests and potential high risk threats	response plan published	1 by 2023	update annually
		6) Develop partnership with relevant Government agencies to address alien invasive species (AIS) at the national level.	# of partnerships	1 by 2022	update by 2026
		7) Conduct 2 targeted /specific pest surveys annually and update pest lists (incl. Bogia Disease, Coconut Rhinoceros Beetle, and Cocoa Pod Borer)	# updated pest list	twice per year	twice per year

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
Component 1.5.4 Trade & Market Access	Market access strategy and required legislation for developing Solomon Islands capacity to negotiate and meet market access standards (SPS and TBT) finalized and enacted.	1) Review and conduct stakeholder workshops to adopt the Market Access Strategy (MAS) to support export regulation	MAS adopted	1 by 2022	update by 2027
		2) Application of sound Sanitary and Phytosanitary Measures and Technical Barriers to Trade (TBT) guidelines/measures	measures applied	continuous	continuous
		3) Attend International/regional seminars and conferences in relation to trade and biosecurity measures	Needs based	continuous	continuous
		4) Biosecurity treatment facility accreditation	accreditation accomplished	by 2024	renewal in 2028
		5) Develop stakeholder partnership arrangement to establish export facilities 4 pack houses and treatment providers	# of export facilities	2 by 2024	+ 2 by 2028
		6) Legislation for meeting required biosecurity and trade standards enacted	legislation enacted	by 2022	-
Component 1.5.5 Capacity Development	BSI sufficiently staffed with well qualified personnel with access to required capacity building measures.	1) Required staffing level: Seaport 7, Airport 8, Post Office 2, MA 2, and 1 Vet, CA 20, Surveillance experts 6, Biosecurity internal control 10	as listed in activity	40 % by 2024	+ 60 % by 2028
		2) 10 yrs BSI Staff Development Plan (SDP) developed and implemented on annual basis SDP	SDP adopted	1 by 2021	update 2025

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
<b>Program 2: National Food &amp; Nutrition Security Program</b>					
<b>Sub-Program 2.1 Sustainable Food Systems Development</b>	PTF 5.2.1.1 (e) PRD (c)	<i>“Short and efficient food supply chains ensure the resilient availability of locally produced food, improve local economic development and enhance food and nutrition security”.</i>			
Component 2.1.1. Short food supply chains	Based on an analysis and mapping of Solomon Islands’ food systems, the National and Provincial Food Council promote sustainable short food supply chains linking urban markets to rural producers and their associations.	1) Food supply chains for each provincial capital identified, mapped, and strategy for short food supply chain for different commodities developed	# strategies adopted	3 by 2024	+ 6 by 2028
		2) Honiara Central Vendors Association and other food suppliers linked to organised producer groups/farmer organizations	# of groups delivering to urban markets	8 by 2024	+ 12 by 2028
		3) National Food Council (consists of multiple stakeholders) established	Council established	by 2022	-
		4) Provincial Food Council (consists of multiple stakeholders) established in Malaita (x1) Western (x1) Guadalcanal (x1)	Councils established	by 2022	-
Component 2.1.2 Reduction of Food Loss and Waste	Improved logistic and infrastructure along food supply chains enable reduction of food loss and recycling of food waste.	1) Training on post-harvest management and waste reduction in supply chains (handling, transport, packaging, storage)	# of producer groups trained	12 by 2024	18 by 2030
		2) Capacity building for processing and packaging for cold chain supply (through Covid -19 Response plan Budget)	# of cold chains	3 by 2024	+ 6 by 2028
		3) Improved infrastructure at market centres (storage/shed/market house)	# of markets improved	3 by 2024	+ 6 by 2030
		4) Food waste from the main provincial local market places is collected and composted	# of compost sites	3 by 2024	+ 3 by 2028
<b>Sub-Program 2.2 Horticulture &amp; Lokol Kaikai Promotion</b>	PTF 5.2.1.1 (e) PRD (c)	<i>“Increased production and availability of diverse exotic and traditional horticultural crops (vegetables, fruits, nuts roots, tubers, etc.) for all improves the nutritional status of communities”</i>			
Component 2.2.1 Horticulture Development	Urban and rural markets have an increased turnover of locally produced exotic and indigenous horticultural products.	1) Field trials with tomato and sweet pepper conducted and concluded (seek support from World Vegetable Center)	# of trials concluded	3 by 2023	-
		2) Field trials on potato, strawberry, onion conducted and concluded	# of trials concluded	3 by 2023	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		3) Increased production of regular crops: fruits (600 trees), Irish potato (20ha), carrot (10ha), onion (15ha), strawberry (3ha), tomato (10ha), sweet pepper (10ha)	as listed in activity	40 % by 2024	+ 60 % by 2027
		4) Increased production of indigenous crops: local vegetables (40ha), fruit (400 trees), nuts (400 trees) and various root crops (100ha)	as listed in activity	40 % by 2024	+ 60 % by 2027
		5) Lokol Kakai and Nutrition promotion at urban markets (e.g. for Yam, Pana, Banana, Bread Fruit) conducted (1 event per year/province)	# of markets targeted	9 each year	9 each year
Component 2.2.2 Lokol Kaikai Promotion	Urban and rural households increasingly use a wider variety of traditional food crops as part of their diet.	1) Documentation of traditional food practices and knowledge, including preservation and storage	# of practices documented	10 by 2024	+ 15 by 2028
		2) Food and Nutrition Training based on local crops, livestock species and fish conducted (at least one per each ward); include Early Child Development (ECD) issues & remedies	# of trainings held	83 by 2024	+ 100 by 2028
		3) Indigenous vegetables, root crops, fruit & nut tree collections are maintained at various existing or newly established FES locations or for distribution to farmers	# of sites	4 by 2024	9 by 2030
		4) Multiplication and distribution of resilient traditional varieties to producer groups (prioritise women); utilise existing germplasm collections	# of groups receiving varieties	30 by 2024	+ 60 by 2028
<b>Sub-Program 2.3 Village-based Pig, Poultry and Small Ruminant Farming</b>	PTF 5.2.1.1 (e) PRD (c)	<i>“Increased availability of locally produced meat and eggs significantly contributes to a decrease in malnutrition in rural communities.”</i>			
Component 2.3.1 Village Poultry Farming Systems	Increased poultry (chicken and duck) and egg production reduces import dependency and provides sufficient protein in the rural diet.	1) Conduct poultry trials and select the best local breeds and crossbreeds suitable for the village farming models	# of trials conducted	6 by 2023	-
		2) Develop and describe the most productive and sustainable village poultry farming models for local breeds and crossbreeds	# of models described	3 by 2023	-
		3) In collaboration with the communities select and train lead farmers in strategic areas (especially those affected by malnutrition) and support the establishment of his/her model farm (equal opportunities for men & women)	# of model farms established	20 by 2023	+ 20 by 2028



ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		4) Support producer groups to establish poultry units as per proposed model and support with inputs (e.g. quality roosters, mini feed mills, building material, tools)	# of producer groups supported	20 by 2023	+ 20 by 2028
Component 2.3.2 Village Pig Farming Systems	Increased pork production through native pigs and crossbreeds reduces import dependency and provides sufficient protein in the rural diet.	1) Conduct pig trials and select the best local breeds and crossbreeds suitable for the village farming models (Improvement of 10 local pig breeds of Temotu for Researches in Gozoruru)	# of trials conducted	4 by 2023	-
		2) Develop and describe the most productive and sustainable village pig farming models for local breeds and crossbreeds	# of models described	2 by 2023	-
		3) Establish village pig breeding herds at Gozoruru and at provincial development farms	# of breeding herds	2 by 2023	+ 3 by 2025
		4) In collaboration with the communities select and train lead farmers in strategic areas (especially those affected by malnutrition) and support the establishment of his/her model farm; (equal opportunities for men & women)	# of model farms established	10 by 2023	+ 15 by 2028
		5) Support producer groups to establish pig units as per proposed model and support with inputs (e.g. quality boar, piglets, mini feed mills, building material, tools)	# of producer groups supported	10 by 2023	+ 15 by 2028
Component 2.3.3 Village Goat Farming Systems	Increased goat production reduces import dependency and provides sufficient protein in the rural diet.	1) MAL establishes and operates a goat breeding herd at one of the MAL livestock farms or at Gozoruru Research Farm	# of breeding herds	1 by 2023	
		2) Conduct goat trials and select the best local breeds and crossbreeds suitable for the village farming models	# of trials conducted	-	3 by 2025
		3) Develop and describe the most productive and sustainable village goat farming models for local breeds and crossbreeds	# of models described	-	2 by 2026
		4) In collaboration with the communities select and train lead farmers in strategic areas (especially those affected by malnutrition) and support the establishment of his/her model farm (equal opportunities for men & women)	# of model farms established	-	9 by 2028
		5) Support producer groups to establish goat units as per proposed model and support with inputs (e.g. quality buck/ doe, tools, equipment)	# of producer groups supported	-	9 by 2028

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
<b>Sub-Program 2.4 Rice Promotion for Import Substitution</b>	PTF 5.2.1.1 (e) PRD (c)	<i>“Enhanced food self-sufficiency and income generation through improved rice-farming systems based on sustainable and profitable multicropping systems”.</i>			
Component 2.4.1 Rice Capacity Building	Rice farmers apply the most economic and environmentally sound form of rice production.	1) Assessment of the economic viability of various rice production systems	# of systems assessed	-3 by 2024	-
		2) Rice cooperatives formed and supported with technical support, seeds, and with machinery and equipment.	# of coops formed	-	4 by 2025
		3) Cooperative members are trained on improved and profitable rice production systems	# of farmers trained	-	200 by 2025
Component 2.4.2 Rice Production Models	Increased local rice production reduces the rice imports.	4) Increased area of rice fields under production (traditional flooded)	# of ha under cultivation	-	200 ha by 2028
		5) Increased area of rice fields under production (e.g. SRI, crop rotation, alternate wetting and drying)	# of ha under cultivation	-	200 ha by 2028
		6) Increased area of rice fields under production (rice + fish integrated system)	# of ha under cultivation	-	50 ha by 2028
<b>Sub-Program 2.5 Disaster Preparedness &amp; Recovery</b>	PTF 5.2.1.1 (e) PRD (c)	<i>“Resilient and diverse farming systems coupled with preparedness for replanting and restocking ensures quick disaster recovery”.</i>			
Component 2.5.1 Disaster Preparedness	Farmers apply sustainable and resilient farming systems adjusted to their respective agro-ecological conditions.	1) MAL promotes farming systems (agroforestry, silvi-pastoral culture, etc.) resilient to the effects of climate change, natural disasters including pest and diseases	# of resilient systems promoted	4 by 2024	+ 5 by 2030
		2) MAL promotes stress tolerant crop varieties, livestock breeds, and fish for the development of climate resilient agriculture with good yield potential.	# of resilient varieties promoted	15 by 2024	+ 15 by 2030
		3) Extension Offices, FES and RTCs are equipped with effective means of communication and transport	# of well equipped Prov.-offices	4 provinces by 2024	+ 5 provinces by 2030
Component 2.5.2 Disaster Recovery	MAL has increased decentralised capacities for assisting the farming communities in replanting and restocking for accelerated post-disaster recovery operations.	1) FES and RTCs in risk prone areas have improved capacity to quickly supply farmers with farming inputs (seedlings, seeds, poultry)	# of well equipped FES/RTCs	4 provinces by 2024	+ 5 provinces by 2030
		2) BSI to ensure pest and diseases free planting materials movement to disaster affected provinces and islands by regularly testing FES and RTC multiplication plots.	# FES, RTCs tested by BSI	yearly	yearly

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
<b>Program 3: National Livestock Development Program</b>					
<b>Sub-Program 3.1 Livestock Services Development</b>	PTF 5.2.1.1 (a) PRD (b)	<i>“Enhanced animal breeding, production and animal health service capabilities coupled with improved private sector collaboration”.</i>			
Component 3.1.1 Livestock Sector Governance	The livestock sector is governed by policies and strategies supporting the equitable development towards productive yet sustainable, environmentally sound, and climate smart production practices and systems.	1) Livestock policy and strategy reviewed and updated	1 document	by 2021	
		2) Livestock Development Act reviewed and updated	1 document	by 2022	-
		3) Review and update Law of Solomon Islands, Chapter 37, Diseases of Animals (1996 edition)	1 document	by 2022	-
		4) Honey Bee Act reviewed and updated	1 document	by 2023	-
		5) Pure Food Act reviewed and updated	1 document	-	by 2025
		6) Become a member of the World Organisation for Animal Health (OIE).	membership	by 2022	-
		7) Conduct a national survey on the current animal health and disease status (last version is from 1996/97)	1 survey	by 2022	-
		8) Livestock Sub-Sector Review Report (including cattle, goats, pigs and poultry) submitted to Government including a stock-take of the number of herds still under State control.	1 report	by 2021	- -
Component 3.1.2 Livestock Infrastructure Development	MAL’s livestock related infrastructure enables animal breeding, pest and disease diagnostics, and provision of services to the farming community related to animal health, production, processing and marketing.	1) Master Plan for Gozoruru Livestock Research Station (based on MoU with Isabel Provincial Government; 250 ha land area) finalized.	1 plan	by 2021	-
		2) Establish Gozoruru Livestock Research Station (with office complex, staff houses, training hall, food lab, animal pathology lab, animal stables and sheds, storage rooms, hatchery, workshop, farm equipment and vehicles)	as listed in activity	70% by 2024	+30% by 2026
		3) Establish fully equipped Animal Health Laboratory office complex (location and building yet to be resourced) in Honiara	as listed in activity	by 2023	-
		4) Slaughter facilities are established and operational in the country: e.g. Mini-Slaughter-Units (at Gozoruru, Dokudola, and Aluta) and one Slaughterhouse in Guadalcanal province	# of slaughter units established	2 by 2024	+ 2 by 2027

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		5) At least 4 mini-feed mills are established in e.g. Mile 6 (Western Province), Temotu Province, Adelia Farm (Malaita) and Gozoruru Research Station	# of feed mills established	4 by 2023	-
		6) Cattle infrastructures and yards at Iloilo, Bunikako, Gevala, Gonokukufo and Kakake rehabilitated, pastures improved.	# of completed stations	3 by 2023	+ 2 by 2026
		7) Clarify status and rehabilitate provincial infrastructure strategically important for the delivery of livestock services e.g. Choiseul (PDF), Western (Miles 6), Central (Hakama), Isabel (Tasia), Malaita (Dala & Adeliua)	# of rehabilitated infrastructure	2 by 2023	+ 3 by 2027
		8) Livestock & Veterinary Service Offices established; preferably within Agriculture Extension Offices	# of offices established	4 by 2023	+ 5 by 2025
		9) Meat market facilities and outlets linked to farmers established in Honiara, Auki, Gizo, Munda, Kirakia, Buala, and Taro	# of facilities functional	3 by 2023	+ 4 by 2025
Component 3.1.3 Animal Health & Technical Services	Productivity of livestock farmers sustainably increased through improved animal health and welfare services, disease surveillance, and application of good livestock management practices for subsistence, semi-commercial and commercial farming.	1) Increase staff of the Department of Livestock & Veterinary Services	# of new staff employed	+ 12 by 2024	+ 16 by 2026
		2) Upgrade all staff qualifications to a minimum of a bachelor degree in Animal Science and/or related field of study.	# of staff with BSc.	35% out of total by 2024	70% out of total by 2026
		3) Employment of veterinarian doctors (vets)	# of vets employed	2 by 2022	+ 2 by 2025
		4) Employment of Animal welfare Officers	# of vets employed	2 by 2022	-
		5) Training of new paravets (currently 40 are available)	# of paravets trained	80 by 2024	+ 100 by 2030
		6) Employ staff to operate the Animal Health Laboratory 3 lab technicians (1 lab manager & 2 lab technicians)	# of lab-staff employed	6 by 2023	-
		7) Employ staff to operate the Gozoruru Livestock Research Station	# of station employed	12 by 2024	+8 by 2026
		8) Develop business models and their related good livestock management practices (incl. fodder production) for commercial and semi-commercial livestock systems	# of livestock business models	4 by 2024	+4 by 2026

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
Component 3.1.4 Partnership Development	Well organized farmer organizations engage with private sector processors and traders	1) Farmer organizations (Associations, Coops, etc.) established (cattle, pigs, poultry, goats) and supported in the form of PPPs	# of FOs established	12 by 2023	+15 by 2026
		2) Partnerships with private sector enterprises established in the form of PPs and/or PPPs	At least 8	4 by 2023	+6 by 2027
<b>Sub-Program 3.2 Cattle Industry Development</b>	PTF 5.2.1.1 (a) PRD (b)	<i>“Reduced beef imports through increased commercial beef production in sustainable farming systems such as silvopastoral systems”.</i>			
Component 3.2.1 Commercial Cattle Farming Systems	Increased supplies of locally produced beef, reduce imports, and cater for the urban beef demand.	1) Increase cattle at Illolo Farm in Dokudola (Western Province) to stabilize at 500 cattle	# of heads of cattle	200 by 2024	+300 by 2028
		2) Establish and maintain a 100 animal nucleus breeding herd at Gozoruru.	# of heads of cattle	30 by 2024	+70 by 2028
		3) Establish and maintain a 100 animal breeding cattle herd at Gonokukufo	# of heads of cattle	30 by 2024	+70 by 2028
		4) Selected quality local heifers transferred to Bunikako, Gevala, Gonokukufo and Kakake and herds stabilized at 100 heads each location.	# of heads heifers	150 by 2024	+250 by 2028
		5) Biosecurity conforming farming practices implemented on commercial cattle farms	biosecurity farm protocol	1 per farm	1 per farm
		6) Artificial insemination (AI) units equipped and operational	# of AI units	1 by 2024	+2 by 2026
		7) Quality cows imported from Fiji and/or Vanuatu	# of heads cows	40 by 2024	-
Component 3.2.2 Smallholder Cattle Farming Systems		1) Smallholder cattle farming model developed (for mixed farming systems; also including dairy options) and promoted	# of livestock business models	1 (beef) +1(dairy) by 2023	-
		2) Smallholder cattle farms operational in close cooperation with larger private or Government farms	# of cattle farms	15 by 2024	+25 by 2028
<b>Sub-Program 3.3 Pig Industry Development</b>	PTF 5.2.1.1 (a) PRD (b)	<i>“Reduced pork imports through increased commercial pig production in sustainable farming systems with increased percentages of locally produced stock”.</i>			
Component 3.3.1 Commercial Pig Farming	Increased supplies of locally produced pork reduce imports and cater for the urban pork demand.	1) Support the development and functioning of piggery farmer organizations (FO)	# of FOs operational	4 by 2024	+5 by 2028
		2) Collaborate with commercial pig farmers and their farmer organizations under the umbrella of PPPs	# of partnerships	2 by 2024	+3 by 2028

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		3) Biosecurity conforming pig farming practices implemented	biosecurity farm protocol	1 per farm	1 per farm
Component 3.3.2 Commercial Breeding	Increase percentages of locally produced stock and reduce imports	1) Increase the existing Livestock Research 70 sow unit in Honiara to a 150 sow unit and stabilize the operations.	# of breeding sows	100 by 2022	+50 by 2025
		2) Establish MAL pig breeders farm, 20 sow unit	# of breeding sows	20 by 2024	-
		3) To establish multipliers farmers (private piggery farm/provincial piggery farms)	# of multiplier farms	2 by 2023	+2 by 2026
		4) BSI facilitates importation of semen (for artificial insemination)	# all imports BSI certified	all	all
<b>Sub-Program 3.4 Poultry Industry Development</b>	PTF 5.2.1.1 (a) PRD (b)	<i>“Reduced poultry imports through enhanced commercial production of broilers and layers in sustainable farming systems with increased percentages of locally produced stock feed and day old chicks.”</i>			
Component 3.4.1 Commercial Poultry Farming	Increased supplies of locally produced chicken meat and eggs reduce imports and cater for the urban demand.	1) Private sector partnership for establishment of a parent flock (pedigree stock) to supply commercial poultry farms.	# of partnerships	1 by 2024	-
		2) Establishment of mini-feed mills to produce poultry feed	# of feed mills	4 by 2023	+5 by 2026
		3) Strengthen the capacity of Solomon Poultry Association (SPA) to 1,000 birds per production cycle	# of birds per cycle	600/cycle by 2024	600/cycle by 2028
		4) Collaborate with commercial poultry farmers and their associations under transparent arrangements (e.g.PPPs)	# of agreements	4 by 2023	+5 by 2026
		5) Biosecurity conforming poultry farming practices implemented	biosecurity farm protocol	1 per farm	1 per farm
Component 3.4.2 Commercial Hatcheries	Increased supplies of locally produced one-day-old chicks reduce imports and cater for the local poultry farms.	1) Collaborate with the private sector under transparent arrangements (e.g.PPPs/MoUs) to develop or upgrade hatchery units, and processing facilities	# of agreements	2 by 2023	-
		2) Collaborate with the farmer organizations under transparent arrangements (e.g.PPPs/MoUs) to develop or upgrade hatchery units, and processing facilities	# of agreements	1 by 2024	+1 by 2027
<b>Sub-Program 3.5 Honey Industry Development Program</b>	PTF 5.2.1.1 (a) PRD (b)	<i>“Increased production and processing of premium honey for export and local consumption including partnerships with poor rural communities and private sector.”</i>			

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
Component 3.5.1 Beekeeping Research & Advisory Services	Solomon Islands honey industry is rejuvenated and thrives through best apiary management practices	1) Research and Breeding Apiary established at Gozoruru with at least 20-50 hives	# of bee hives	20 by 2023	+30 by 2026
		2) One honey bee specialist in Gozoruru Livestock Research Station	# of bee specialists	1 by 2022	-
		3) One honey bee lab in Gozoruru Livestock Research Station established and functioning	# of honey lab	1 by 2023	-
		4) Compile best apiary management practices (including Asian Bee containment) and make available off-line and on-line through the MAL Agri-Tech Portal	apiary practices available	by 2023	regular updates
Component 3.5.2 Production Inputs & Processing	Existing and new bee-keepers organised in groups or associations receive support resulting in increased output of quality honey.	1) Support honey processors with technical advisory services and production inputs of good quality	# of rural processing facilities	3 by 2024	+4 by 2028
		2) Rural honey storage, processing, bottling and quality assurance facilities established and supported in at least 3 Provinces (Western, Choiseul, Malaita)	# of professional facilities	2 by 2024	+1 by 2028
		3) Manufacturers (trained youth groups) of apiary materials, tools and equipment supported	# of groups operational	2 by 2023	+2 by 2025
Component 3.5.3 Organisational Development & Marketing	Bee-keepers are organised and collaborate in order to supply sufficient high quality honey to traders and end-users.	1) Support existing or start-up bee keepers with 10 hives each in each province	# of bee hives	200 by 2023	+300 by 2026
		2) Provincial bee-keeper associations established and supported with equipment and training	# of groups operational	2 by 2023	+2 by 2026
		3) Facilitate linkages between bee-keeper associations and private sector processors, traders and exporters	# of partnerships	2 by 2023	+2 by 2026
		4) Facilitate linkages between bee-keeper associations and development partners including NGOs, faith based groups and researchers	# of linkages	2 by 2023	+2 by 2026

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
<b><u>Program 4: National Crop Development Program</u></b>					
<b>Sub-Program 4.1 Coconut Industry Development</b>	PTF 5.2.1.1 (a, f) PRD (a, b)	<i>“Increased exports and domestic use of high quality copra and other coconut-derived products from sustainable coconut farming systems with increasing profit margins for farmers in collaboration with private enterprises”.</i>			
Component 4.1.1 Sector Governance & Partnerships	The coconut sub-sector is governed in a transparent manner through participatory processes and mutual beneficial partnerships of relevant stakeholders.	1) Coconut/Cocoa Secretariat established and strengthened (collaboration with MCILI and other partners)	Secretariat established	1 by 2021	-
		2) Provincial Coconut Task Forces functioning	# of task forces	9 by 2021	-
		3) Coconut Industry Working Group (WG) established	WG established	1 by 2021	-
		4) Coconut farmer organizations (FOs) formed and functional in each province	# of FOs operational	9 by 2024	+ 18 by 2026
		5) Revitalize Land Purchase Cooperatives (LPCs) to engage in sustainable and productive coconut agroforestry systems	# of LPCs operational	8 by 2024	+12 by 2027
		6) Review and improve current institutional and regulatory arrangement for the sector	adjustments implemented	by 2022	-
		7) Mapping of coconut production areas (potential) and shipping points (functional & proposed; indicating infrastructure needs)	Report & map available	1 set by 2022	-
		8) Strengthen partnerships (PPPs and PPs) based on current arrangements and new collaborative mechanisms between private sector and farmer organizations and LPCs.	# of partnerships	18 by 2024	+ 18 by 2026
Component 4.1.2 Coconut Productivity	Increased coconut production by use of improved varieties/genetic materials, improved pest and disease management (IPDM) and improved overall crop management practices.	1) Coconut germplasm collection centres and seed gardens established at Gojoruru FES (Isabel), Mile 6 Gizo (Western) and Yadina	# gardens operational	3 by 2023	-
		2) Provincial nurseries (seed gardens) for production of superior local or improved varieties established	# of nurseries operational	4 by 2023	+5 by 2026
		3) Best management control options (mechanical, biocontrol agents, IPNM, allowable pesticides) for pests and diseases, especially also CRB, are made available	options available on- and off-line	options available by 2023	regular updates



ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		4) Rehabilitation of old plantations with improved selected varieties; also in collaboration with Land Purchase Cooperatives	area (ha) rejuvenated plantations	14,140 ha by 2024	21,211 ha by 2030
		5) Improved coconut agro-forestry systems established (plantation and smallholder), e.g. intercropping with cocoa, kava, noni or in combination with livestock	area (ha) under agroforestry	4,242 ha by 2024	6,363 ha by 2030
		6) Senile plants are replaced with superior planting and genetic materials (in collaboration with FOs and private sector )	area (ha) rejuvenated	9,898 ha	14,848 ha
Component 4.1.3 Coconut Processing & Value Addition	Quality and quantity of copra and other more diversified coconut based products increased.	1) Improved hot air copra dryers installed, especially at high copra producing areas/locations	# of dryers installed	40 by 2024	+ 60 by 2030
		2) Mechanization options for coconut production and processing identified, tested and applied (e.g. power tillers for transport, mini crushing mills)	# of options identified & supported	2 by 2023	+ 2 by 2030
		3) Direct Micro Expelling (DME, CNO) and/or other new technology for Virgin Coconut Oil production established and in use	# of DMEs in operation	15 by 2023	+ 20 by 2030
		4) Other options for downstream processing/value addition supported (e.g. bio diesel and cosmetics production)	# of options supported	1 by 2023	+ 1 by 2030
		5) Promote Green Coconut for downstream processing for domestic & export	# of processors supported	5 by 2023	+ 10 by 2030
		6) Ensure quality assurance at all levels of the coconut value chain and collaborate with CEMA on developing guidelines	guidelines in place	by 2023	-
Component 4.1.4 Technical Advisory Services	MAL, in collaboration with other stakeholders, provide relevant and up-to-date advisory services to promote good agriculture practises in coconut production and primary processing.	1) Review and update the coconut handbook considering climate resilient and sustainable farming practices and make best practices available on the MAL Agro-Tech Portal	practices available on MAL-Portal	by 2023	-
		2) Produce short coconut production/processing video tutorials and/or messages available on mobile phones or off-line micro-projectors (also in local languages)	# of videos produced	-	10 by 2027
		3) Train and encourage lead farmers of FOs to promote best practices in coconut farming and on-farm processing (where possible in collaboration with private sector)	# of lead farmers trained	30 by 2023	+ 40 by 2026

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		4) Support lead farmers to train other farmers on best practices, especially also those involved in FOs (where possible in collaboration with private sector)	# of farmers trained	450 by 2024	+ 600 by 2028
Component 4.1.5 Marketing & Trade	Stakeholders of the coconut value chain organise themselves and collaborate in a transparent and mutually beneficial way.	1) New multipurpose collection centres (for coconut, cocoa, etc.) established and equipped at strategic locations	# of centres functional	6 by 2023	+ 12 by 2030
		2) Strengthen Farmer organizations (and LPCs) to own and manage warehouses and provide services at rural areas.	# of centres managed by FOs / LPCs	10 by 2023	+ 20 by 2030
<b>Sub-Program 4.2 Cocoa Industry Development</b>	<b>PTF 5.2.1.1 (a, f) PRD (a, b)</b>	<i>“Increased exports and domestic use of high quality cocoa and its products from sustainable cocoa farming systems with increasing profit margins for farmers in collaboration with private enterprises”</i>			
Component 4.2.1 Governance & Capacity Building	The cocoa sub-sector is governed in a transparent manner through participatory processes and mutual beneficial partnerships of relevant stakeholders.	1) Cocoa Secretariat established and functioning and coordinates well with MAL	Secretariat established	1 by 2021	-
		2) Cocoa Industry Working Group established	# of task forces	9 by 2021	-
		3) Provincial Cocoa Task Forces functioning	WG established	1 by 2021	-
		4) High cocoa production areas identified and mapped	Report & map available	1 set by 2022	-
		5) Cocoa farmer organizations (FOs) formed and functional in each province	# of FOs operational	9 by 2024	+ 18 by 2026
		6) Strengthen regulations for processors including guidelines for partnerships in trade, processing and quality criteria	guidelines in place	by 2022	
		7) Establish PPPs between MAL, cocoa producers, and private sector (processors and exporters)	# of PPPs operational	4 by 2023	+ 5 by 2026
Component 4.2.2 Cocoa Productivity	Increased cocoa production by use of improved varieties/genetic materials, improved pest and disease management (IPDM) and	1) On-station and on farm evaluation of selected high potential imported and local cocoa materials at Ringi, Tenaru & Gojoruru FESs and lead farmers fields	# varieties evaluated	3 by 2024	+ 2 by 2026
		2) Varietal gene mapping and characterization and establishment of a cocoa gene bank	# of varieties characterised	3 by 2024	+ 2 by 2026

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
	improved overall crop management practices.	3) Establishment of Cocoa seed gardens at Ringi and Gojoruru FAES (replacement of Black Post seed garden) for multiplication and distribution to farmers	# seed garden established	1 by 2024	+ 2 by 2026
		4) Establishment of 1 Cocoa bud wood garden of high potential (imported & local) cocoa materials at Tenaru FES; for distribution to skilled farmers	# bud wood garden established	1 by 2024	+ 2 by 2026
		5) Establishment or rehabilitation of provincial cocoa nurseries for distribution of high yielding cocoa seedlings	# of nurseries	4 by 2023	+ 5 by 2026
		6) Cocoa on farm Participatory Action Research (PAR) for selection & adoption of high performing materials	# of PAR plots	4 by 2024	+ 5 by 2026
		7) Demonstrate suitable cocoa agroforestry systems through lead farmers' model farms	# of model farms	12 by 2024	+ 24 by 2027
		8) Promote Integrated Pest, Disease and Nutrient management (IPDNM) on lead farmer's model farms	# of model demos	12 by 2024	+ 24 by 2027
		9) Cocoa expansion & replanting grant scheme	area (ha) with new cocoa	300 ha by 2024	600 ha by 2030
		10) Rejuvenate cocoa trees by (i) pruning and/or (ii) grafting (side- or top grafting with improved varieties)	Area (ha) rejuvenated	1,704 ha by 2024	3,409 ha by 2028
		11) Best management control options (mechanical, biocontrol agents, IPNM, allowable pesticides) for pests and diseases, especially also Cocoa Pod Borer, are made available	options available on- and off-line	options available by 2023	regular updates
		Component 4.2.3 Cocoa Processing & Value Addition	Quality and quantity of dried cocoa beans and other more diversified cocoa-based products increased.	1) Ensure quality assurance at all levels of the cocoa value chain and collaborate with CEMA on developing guidelines and certification procedures	Quality guidelines in place
2) Promote establishment of improved cocoa dryers (solar, hot air, etc.) established (through PPPs)	# of improved new dryers			30 by 2024	+ 50 by 2027
3) Promote improvement of traditional dryers through smoke taint protection measures (e.g. chimneys)	# of improved trad. dryers			50 by 2024	+ 100 by 2027
4) Promote cocoa processors such as chocolate, cocoa powder, and other cocoa manufacturers in the country	# of PPPs			2 by 2024	+ 2 by 2028
Component 4.2.4 Technical Advisory Services	MAL, in collaboration with other stakeholders, provide relevant and up-to-date advisory services	1) Review and update the cocoa handbook considering climate resilient and sustainable farming practices and make best practices available on the MAL Agro-Tech Portal	practices available on MAL-Portal	by 2023	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
	to promote good agriculture practises in cocoa production and primary processing.	2) Produce short cocoa production/processing video tutorials and/or messages available on mobile phones or off-line micro-projectors (also in local languages)	# of videos produced	-	10 by 2027
		3) Train and encourage lead farmers of FOs to promote best practices in cocoa farming and on-farm processing (where possible in collaboration with private sector)	# of lead farmers trained	30 by 2023	+ 40 by 2026
		4) Support lead farmers to train other farmers on best practices, especially also those involved in FOs (where possible in collaboration with private sector)	# of farmers trained	450 by 2024	+ 600 by 2028
Component 4.2.5 Marketing & Trade <i>(Activities can be combined with 4.1.5)</i>	Stakeholders of the cocoa value chain organise themselves and collaborate in a transparent and mutually beneficial way.	1) New multipurpose collection centres (for coconut, cocoa, etc.) established and equipped at strategic locations	# of centres functional	6 by 2023	+ 12 by 2030
		2) Strengthen Farmer organizations (and LPCs) to own and manage warehouses and provide services at rural areas.	# of centres managed by FOs / LPCs	10 by 2023	+ 20 by 2030
<b>Sub-Program 4.3 High Value Crops Development</b>	PTF 5.2.1.1 (a, b, f) PRD (a, b)	<i>“Increased and diversified exports and domestic use of well processed high value crops from sustainable farming systems with increasing profit margins for farmers in collaboration with private enterprises”.</i>			
Component 4.3.1 Kava Development Scheme	Exports of kava increased through a conducive regulatory framework, improved support services, and a transparent and collaborative approach along the value chain.	1) RESEARCH: Conduct Kava evaluation & selection trials (including participatory action research)	# varieties evaluated	3 by 2023	-
		2) RESEARCH: Characterisation of 3 noble Kava varieties in SI	# varieties characterised	3 by 2023	-
		3) RESEARCH: Ownership rights and origin of 3 Solomon Islands noble kava varieties consolidated/secured	rights for 3 varieties	by 2024	-
		4) RESEARCH: Establishment of gene bank of superior kava materials	collection established	3 by 2023	-
		5) Kava Industry Working Group established.	WG established	by 2021	-
		6) National Kava Standard developed and approved	kava standard approved	by 2022	-
		7) Compile kava handbook considering climate resilient and sustainable farming practices and make best practices available on the MAL Agro-Tech Portal	practices available on MAL-Portal	by 2023	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
		8) Export quality control mechanisms and responsible agency in place.	quality regulated	by 2022	-
		9) Identification and mapping of main kava production areas with good and medium potential finalized	map available	by 2023	-
		10) Preferential kava varieties identified, multiplied and delivered to farmer organizations and farmers.	# of farmers supported	400 by 2024	+ 600 by 2030
		11) Area planted with improved varieties with good market demand increased	area (ha) with kava	300 ha by 2024	600 ha by 2030
		12) Support farmer organizations by linking to private sector entities for processing and export	# of FOs supported	10 by 2024	+ 15 by 2030
		13) Support kava processing units with lead farmers, farmer organizations, or private sector partners established (PPPs)	# of units supported	4 by 2024	+ 5 by 2030
Component 4.3.2 Coffee Development Scheme	Exports of coffee for niche markets increased, and coffee imports increasingly substituted through domestic quality produce.	1) Preferential coffee varieties for international niche markets as well as the national market identified	report available	by 2023	-
		2) Superior local and/or imported varieties as per market research identified and multiplied	# of FOs supported	3 by 2024	12 by 2028
		3) Coffee Industry Working Group (WG) established.	established	by 2022	-
		4) Mapping of main suitable coffee production areas finalized.	map available	by 2023	
		5) Superior coffee planting material distributed to FOs	# of FOs	4	+ 12
		6) Area planted with improved varieties with good local or international market demand increased	area (ha) with coffee	50 ha by 2024	+ 150 ha by 2030
		7) Establishment of basic coffee processing units with farmer organizations and private sector partners established (e.g. through PPPs)	# of units	2 by 2024	+ 4 by 2028
		8) Identify and operationalize suitable organic certification options with reasonable costs	options clarified	by 2023	-
		9) Export quality control mechanisms, and responsible agency in place	mechanisms in place	by 2023	-
Component 4.3.3 Cassava Development Scheme	Cassava production increased and increasingly used for export, domestic consumption,	1) Pest & disease resilient and high yielding varieties identified per market requirement (feed, human consumption, etc.)	# varieties identified	3 by 2023	+2 by 2026
		2) RESEARCH: Establishment of gene bank for cassava	gene bank established	1 by 2024	-

ASGIP Program and Sub-Program	Development Objectives	Activities / Outputs	Targets	2021-2024	2025-2030
	and manufacture of livestock feed.	3) Varieties multiplied, distributed, planted by smallholders	area (ha)	300 ha	600 ha
		4) Support commercial cassava production with appropriate technologies, machineries, and training (e.g. through PPPs)	area (ha) with cassava	320 ha by 2024	480 ha by 2030
		5) Cassava processing units (chips, flour, etc.) established & operational (especially. female & young entrepreneurs)	# of units operational	3 by 2024	+3 by 2026
		6) Support infrastructure (pack house, quality control, etc.) for cassava export through PPPs	# of units operational	-	1 by 2026
Component 4.3.4-A Emerging Crops Dev. Scheme (Spices)	Spices with high market potential (international and domestic) identified and produced.	1) Conduct market research to identify spices with good domestic and international demand	Report available	By 2022	-
		2) Variety trials for selection of varieties with good market potential, yield, quality, and pest & disease tolerance	# varieties identified	2 ginger 2 vanilla	2 chilli by 2028
		3) Establishment of gene bank for spice crops	gene bank established	by 2024, 3 varieties	-
		4) Spice farmer organizations (FO) formed (ward or provincial)	FOs operational	3	+3
		5) Distribute spice seeds, planting material, etc. to farmers and provide technical training	# of farmers trained and planting	30 by 2024	+45 by 2024
		6) Support farmer organizations to establish linkages with processors, traders, and exporters (e.g. through PPPs).	# of linkages established	2 by 2024	+3 by 2024
Component 4.3.4-B Emerging Crops Dev. Scheme (Others)	Production, processing, exports & consumption of emerging crops scaled; linkages between growers, traders, processors & exporters well established.	1) Characterisation of Noni, Ngali nuts and other emerging high value crops	# varieties characterised	3 by 2023	-
		2) Conduct variety evaluation and selection trials for Noni, Ngali nuts, and newly emerging high value crops	# varieties characterised	3 by 2023	-
		3) RESEARCH: Gene bank (germplasm collections) of high potential Noni and Ngali materials established	collection established	3 by 2023	-
		4) Conduct market research for domestic & intl. markets	report	by 2022	
		5) High value crop (HVC) processors/exporters supported (e.g with subsidies, tools, equipment, machineries and infrastructures) through productive partnerships and PPPs	# of enterprises operational	2 by 2024	+ 2 by 2026
		6) HVC farmer organizations or groups formed, trained, and supported with tools, equipment, planting material	# of linkages established	10 by 2024	+20 by 2024

**Table 5: ASGIP Export & Import Substitution Targets**

Commodity	HS Code <sup>54</sup>	Export target by 2030	Baseline (volume/year)
<b>Increased exports:</b>			
Copra	HS4 21203	At least 20,000 tons/year	Baseline 2015-2019, 5yr average: 14,103 tons <sup>55</sup>
Crude coconut oil	HS6 3151311	At least 8,000 tons/year	Baseline 2018: 5,610 tons <sup>56</sup>
Virgin coconut oil	-	At least 1,600 tons/year	Baseline 2020: 90 tons/year <sup>57</sup>
Cocoa beans	HS4 41801	At least 10,000 tons/year	Baseline 2015-2019 10yr average: 4,763 tons <sup>58</sup>
Kava	-	At least 150 tons/year	Baseline 2019: 15 tons <sup>59</sup>
<b>Import substitution:<sup>60</sup></b>			
Rice	HS4 21006	To below 40,000 tons/year	Baseline 2018: 45,000 tons
Poultry meat	HS4 10207	To below 2,000 tons/year	Baseline 2018: 4,137 tons
Beef meat	HS4 10202	To below 300 tons/year	Baseline 2018: 555 tons
Pork meat	HS4 10203	To below 100 tons/year	Baseline 2018: 204 tons
Eggs	HS4 10407	To below 50 tons/year	Baseline 2018: 107 tons of eggs

<sup>54</sup> HS = Harmonised Commodity Description and Coding System

<sup>55</sup> Estimate based on CEMA data

<sup>56</sup> Based on International Trade Center (Trade Map) <https://www.intracen.org/itc/market-info-tools/trade-statistics/>

<sup>57</sup> Estimate based on CEMA data from 2020, 1 st quarter

<sup>58</sup> Estimate based on CEMA data

<sup>59</sup> Estimate based on National Statistics Office Export Data

<sup>60</sup> All import data based on International Trade Center (Trade Map); <https://www.intracen.org/itc/market-info-tools/trade-statistics/>

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