

INTEGRATING DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION INTO THE AGRICULTURE SECTOR IN SMALL ISLAND DEVELOPING STATES IN THE PACIFIC

A policy note

2017



Acknowledgements

This policy note is a joint product of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and the Regional Integrated Multi-Hazard Early Warning Systems for Asia and Africa (RIMES), under the guidance of Tiziana Bonapace, Director, Information and Communications Technology and Disaster Risk Reduction Division. The core team consisted of Sanjay Srivastava from ESCAP and A.R. Subbiah from RIMES. Kareff Rafisura, Shaina Hasan and Madhurima Sarkar-Swaigood (ESCAP) provided inputs and reviewed the document. The support of ESCAP Pacific Office under the guidance of its Director, Iosefa Maiava, the Secretariat of the Pacific Community and the Secretariat of the Pacific Regional Environment Programme, is duly acknowledged.

This policy note is a part of a suite of knowledge products developed under the Enhancing Knowledge and Capacity to Manage Disaster Risk for a Resilient Future in Asia and the Pacific Project, which is being implemented by ESCAP and partners. The project is funded by the United Nations Development Account.

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BACKGROUND

Member States of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) committed at the Third United Nations World Conference on Disaster Risk Reduction to strengthen their resilience to disasters with a renewed sense of urgency in the context of sustainable development and poverty eradication. Building on this commitment, ESCAP is assisting member States in refining the capacity of government policymakers to develop policies and strategies to manage disaster risks, in particular to mainstream disaster risk reduction (DRR) and climate change adaptation (CCA) into sector and national and subnational planning.

The small island developing States (SIDS) of the Pacific adopted the Framework for Resilient Development in the Pacific (2017–2030) in 2016. The framework provides an integrated approach to address climate change and disaster risk management and guide resilient development in the region (SPC, 2016). One of the goals of this framework is strengthened integrated adaptation and risk reduction to enhance resilience to climate change and disasters. The framework recognizes that addressing the risks in climate-sensitive sectors requires a multi-sector approach and actions.

Cognizant of the importance of the agriculture sector to economic development in Pacific SIDS and the sector's sensitivity to climate-related risks, ESCAP and the Secretariat of the Pacific Community (SPC) organized in August 2016 a workshop on Building Climate Resilient Agriculture in Pacific SIDS, involving high-level and senior officials of ESCAP member States in the Pacific. The participants noted that national agricultural plans in Pacific SIDS have already put priority on climate change resilience. The participants reviewed ESCAP guidelines on mainstreaming DRR and CCA in the agriculture sector and recommended their use to guide the operationalization of policies for integrating DRR and CCA in their sector (ESCAP, 2016). The workshop identified the need for an enabling policy environment for adopting the guidelines.

This policy note was developed to provide inputs to the SPC and the Food and Agriculture Organization of the United Nations Meeting of the Pacific Heads of Agricultural Departments and the Pacific Agricultural Ministerial Conference in 2017 and to other regional forums, upon the request from the participants of the workshop.



IMPORTANCE OF THE AGRICULTURE SECTOR

The Pacific SIDS is home to about 10 million people (see the Annex). In many of these countries the majority of the population lives in rural areas (86 per cent in Papua New Guinea, 81 per cent in Samoa, 77 per cent in Solomon Islands and the Federated States of the Federated States of Micronesia, 76 per cent in Tonga and 73 per cent in Vanuatu). The primary economic sectors in most of these countries are agriculture and fisheries. Agriculture remains the main source of livelihood for most households.

Although agriculture's value added as a percentage of gross domestic product (GDP) has generally declined over the past decade, the sector remains an important contributor to the economy of Pacific SIDS. Agriculture supports, both directly and indirectly, about two-thirds of the population of Fiji, Papua New Guinea, Samoa, Solomon Islands and Vanuatu. The sector is responsible for about a quarter of the GDP in the Federated States of Micronesia, Kiribati, Solomon Islands, Tuvalu and Vanuatu. The share of agriculture to total exports is around 30 per cent in Fiji, Papua New Guinea and Solomon Islands and more than 60 per cent in Vanuatu, Samoa and Tonga (World Bank, 2017). Aside from being a major source of household and export income, agriculture is also important to sustain the domestic food supply and to help reduce food imports.

Food security is a challenge for almost all Pacific SIDS due to their size and relative isolation from major markets. Domestic food production in these small islands is limited. The high dependence on rainfed agriculture means that people's livelihoods are particularly vulnerable to climate variability-associated risks from cyclones, rainfall variability and drought, as well as to the pressures of climate change (UNEP, 2017). Additionally, due to the lack of investment in agriculture, the farmers have reduced capacity to supply the domestic market at competitive prices. Subsistence agriculture, which provides indigenous islanders with basic food necessities, is found to be rapidly disappearing in all Pacific islands (Kakazu, 1994). Nutritional deficiency is a particular challenge, and the unhealthy dietary consumption has resulted in the prevalence of obesity: Solomon Islands and Papua New Guinea, at 28 per cent, Tonga, at 43 per cent, and Kiribati, Samoa and Tuvalu, at less than 40 per cent (ESCAP, 2017). Many of the island countries have increased their food imports in recent years, which has exerted pressure on the foreign exchange and fiscal sustainability of their economies.



CLIMATE RISKS IN AGRICULTURE

The Pacific SIDS are exposed to various natural hazards, with the region considered one of the most disaster-prone in the world (OCHA, 2015). Natural hazards are classified as (a) sudden, unforeseen events (windstorms or heavy rain), (b) cumulative events that occur over an extended period (drought) and (c) back-to-back events, such as cyclones and droughts. Impacts of these events on agriculture vary widely, depending on timing of occurrence and on crop type and variety. In general, these hazards cause economic, social and environmental consequences.

Between 1990 and 2016, 193 disasters were recorded in the Pacific subregion (excluding Australia and New Zealand) (ESCAP, 2017). These resulted in substantive agriculture income loss for many countries. In Fiji, the 2009 floods resulted in agriculture and infrastructure damages worth FJ\$100 million (Lal and others, 2009) (approximately US\$48 million in current dollars), while the 2016 cyclone caused US\$1.1 billion in damages, of which US\$100 million was in the agriculture sector (Bolatagici, 2016). In Vanuatu, when tropical Cyclone Pam struck the country in 2015, around 80 per cent of coffee, 80 per cent of leaf vegetables, 75 per cent of coconut and 70 per cent of taro crops were destroyed in the worst affected areas, leaving families with no other food source (ReliefWeb, 2015). The 2015/2016 El Niño associated-drought affected around 4.7 million people in the Pacific (ESCAP, 2015). Papua New Guinea suffered severe food shortages due to the worst drought in nearly two decades, further exacerbated by frosts in the country's highlands.

Clearly, the impact of various hazards on agriculture in Pacific SIDS is considerable and these are likely to get worse with the projected changes in climate, including a projected shift towards more El Niño events in Central Equatorial Pacific (IPCC, 2012). In addition to low-frequency yet high-impact extreme climate events, high-frequency but low-impact weather aberrations, such as dry and wet spells, decrease crop, livestock and fisheries productivity and result in recurring losses each season. Climate variability has been one of the most significant agriculture production risks in the region, constraining investments and neutralizing development gains. Aversion to risk, however, results in the suboptimal exploitation of potential resources.

Of the approximately US\$25 billion total GDP of Pacific SIDS, an estimated 20 per cent, or US\$5 billion, is from agriculture. Analysis of the fall in the agriculture sector's contribution to GDP due to severe weather risks in different Pacific SIDS reveals that 15 to 25 per cent of agriculture GDP is sensitive to climate risk. Moreover, the fall in agriculture GDP could have cascading impact to other sectors of the national economy through backward and forward links. Hence, around US\$1 billion worth of agriculture sector activities, related infrastructure and other sectors that depend on agriculture directly and indirectly are sensitive to climate risk.

The recent El Niño-associated severe weather events (2016 cyclones and drought) in various countries in the subregion caused huge losses in the agriculture sector. Papua New Guinea bore about US\$200 million worth of production losses in crops, such as coffee, oil palm, cocoa and food crops, due to drought. Around 4.7 million people were affected by the 2015/2016 El Niño-associated drought, with such as

Palau and Marshall Islands declaring a state of national emergency. Considering the climate changes and development trends, this trend of severe weather events is likely to continue in the future.

The Intergovernmental Panel on Climate Change, in its Fourth Assessment Report (IPCC, 2007), projected for Pacific SIDS (a) more frequent or intense floods from increased rainfall and extreme events, which could damage crops and croplands; (b) less frequent but increased area affected by drought, which causes a decline in soil productivity, leading to decreased agricultural production; (c) less frequent but more intense tropical cyclones that could uproot and/or severely damage trees (mango, coconut) and crops (sugarcane, coffee, cocoa, etc.), livestock, fisheries and infrastructure; (d) sea-level rise that would cause coastal inundation, potentially damaging infrastructure, freshwater aquifers, croplands and crops and eroding the soil; (e) higher temperatures that may generate new pests and diseases; (f) higher water temperatures, which potentially leads to coral bleaching and fish migration; and (g) increased rainfall variability, which increases the vulnerability of households dependent on rainwater and rainfed agriculture.



MANAGING CLIMATE RISKS IN AGRICULTURE

Most countries in Pacific SIDS have an agriculture policy that outlines each government’s vision, goals and strategies to address the various challenges confronting their agriculture sector. Table 1 lists some of the risks to the sector, as well as risk management strategies adopted in agriculture policies and plans. A common theme among the countries is to revitalize the agriculture sector to meet domestic food security needs and enhance farmers’ income levels through value addition of agricultural products and thus to meet quality standards of domestic and international markets. The agriculture sector policies emphasize strengthening support institutions to enhance farmers’ capacities to apply appropriate technologies to increase productivity levels and enable them to obtain remunerative prices. One of the most comprehensive approaches is Fiji’s agriculture policy, which establishes a Rural Transformation Center and Farmer Field Schools as core institutional entities to provide extension services to farmers.

One of the major gaps noted is the lack of comprehensive climate risk assessments. The need for a standardized climate risk management approach has been emphasized but yet to be adopted. There is also a lack of enabling policies and legislation in the area of agriculture and risk management. Notably, there is no mechanism established in the region for integrating DRR and CCA into the agriculture sector. Mostly, DRR efforts focus narrowly on cyclones, while much of the CCA initiatives remain at the policy level. Integrating these two approaches (DRR and CCA) into the agriculture sector will help sustain livelihoods, ensure food security, reduce food imports and maintain agriculture export income for most of the Pacific SIDS.

Table 1 Agriculture issues and policies in Pacific small island developing States

<i>Country</i>	<i>Agriculture trends and issues</i>	<i>Risk management strategies outlined in agricultural policy</i>
Federated States of Micronesia	Underdeveloped commercial agriculture; lack of research and funds dedicated to the sector; volatile commodity prices and large trade deficit; weak market as well as transport linkages; limited capital and lack of access to credit; vulnerability to disasters and climate change; land policy issues.	Agriculture Policy 2012–2016 outlines strategies to address these and other issues with the aim of ensuring national food security and nutritional health through food self-sufficiency; the policy also advocates for sustainable traditional management systems of natural resources and talks of climate impact assessment in agriculture, but no concrete steps or actions have been taken so far.
Fiji	Increased transformation from subsistence to semi-commercial farming; access to market remains a challenge; other issues include value adding, product standards and marketing, as well as access to credit and crop insurance.	The Fiji 2020 Agriculture Sector Policy Agenda identifies specific strategies for advancing the sector, including the establishment of Rural Transformation Centers with Farmer Field Schools to comprehensively manage all agriculture-related risks (financial, institutional, climate-related, etc.) that farmers experience.

Source: UNEP, 2011.

<i>Country</i>	<i>Agriculture trends and issues</i>	<i>Risk management strategies outlined in agriculture policy</i>
Kiribati	Limited human resources and expertise in agriculture and forestry; poor soil, limited water, narrow genetic base, pests and diseases, expensive farm inputs.	Kiribati 2013–2016 Agriculture Strategic Plan advocates for use of diverse crops and genetics tolerant to harsh conditions to improve crop and livestock production; but no specific climate risk management actions are mentioned.
Marshall Islands	Poor soil; lack of access to credit for tools and seeds; price and transport (shipping) issues; competition with Taiwanese farmers; post-harvest handling, marketing, quality check, supply consistency.	The Trade Policy for the Republic of Marshall Islands emphasizes development of skills in agriculture (types of crops to grow, post-harvest handling), business planning and marketing; there are some suggestions to address issues, including climate change, but nothing concrete.
Nauru	Increase in domestic agricultural production to address food security and livelihoods; some land issues and disputes.	National Sustainable Development Strategy 2005–2025 recommends a resource centre on agricultural and livestock production but does not contain any integrated approach to address sector problems.
Palau	Cost of producing food is higher than importing needed items; no economies of scale in agricultural production.	Bureau of Agriculture Strategic Plan FY 2014–2019 aims for sustained food production and security, with a focus on increased production (yield and area) and consumption of locally grown crops; no mention of climate-related risks, nor management strategies to deal with them.
Papua New Guinea	Good environment for agriculture; road and transport infrastructure issues; law and order; land tenure; financing; natural resource management; agricultural standards and quality control; marketing and promotion.	National Agriculture Development Plan 2007–2016 focuses on making the sector contribute to economic growth, social well-being, food security and poverty alleviation through mixed cropping and animal husbandry; mentions adaptation but no concrete strategies nor actions to manage risks.
Samoa	Limited human and financial resources; access to water; frequent flooding; droughts; limited seed viability; lack of farm advice relating to choice of crop and optimum development.	Samoa Agriculture Sector Plan 2016–2020 envisions the sector to contribute to food security, job creation and resilience; there is specific aim of ensuring an environmentally sustainable, climate- and disaster-resilient sector as a good entry point for use of weather and climate information.
Solomon Islands	Availability and cost of farm inputs or poor planting materials; land disputes; poor soil; increased pests and diseases; lack of improved crop species; lack of markets for farm produce.	Agriculture and Livestock Sector Policy 2015–2019 aims for food sovereignty, economic sustainability and improved rural livelihoods through sustainable agriculture; promotes DRR and CCA and outlines collaboration with other departments, which is a good entry point for integrating climate risk management.
Tonga	Market access for produce; rural poverty; outmigration of rural people; ageing farming population; extreme weather events.	Agriculture Sector Plan 2016–2020 highlights DRR and CCA; a climate-resilient sector through healthy soil, secure water, diverse farming systems and adaptive communities, all of which are good entry points for climate risk management.

<i>Country</i>	<i>Agriculture trends and issues</i>	<i>Risk management strategies outlined in agriculture policy</i>
Tuvalu	Poor soil; shortage of labour and capital; limited natural resource base; small domestic market with little potential for economies of scale; international market access is expensive; islands are scattered and sparsely populated.	National Strategy for Sustainable Development 2005–2015 aims to revive and expand agriculture extension services, increase production, improve transport and marketing of local produce and encourage people to go local versus imported; no mention of climate-related risks, DRR or CCA.
Vanuatu	Natural hazards; population growth; poor farming practices; market access; shipping costs; geographical disparity; inconsistent technical inputs and expertise; credit access; land disputes; limited resources for tackling issues.	Agriculture Sector Policy 2015–2030 envisions the sector to contribute to poverty reduction, food security and economic growth; the policy also highlights the mainstreaming of DRR and CCA into initiatives to create a climate-resilient sector, which are good entry points for climate risk management integration.

A climate risk management approach for integrating disaster risk reduction and climate change adaptation into the agriculture sector

Climate risk management is an approach to climate-sensitive decision-making that uses an interdisciplinary, multiple-stakeholder process of analysing weather and climate-related risks. This approach leads to consensus-based identification and prioritization of response strategies that anticipate and manage both climate variability-associated risks (DRR) and emerging climate change-related long-term risks (CCA).

Robust climate risk management requires the existence of the following capacities and processes:

1. Participatory climate risk assessment to understand the climate risk management context of farmers.
2. Assessment of the climate risk information needs of farmers and intermediary institutions that provide support services to farmers.

3. Institutional mechanism to ensure continuous dialogue between agricultural and meteorological agencies, for meeting farmers' climate information needs
4. Climate data management and information generation.
5. Tailor-made, farmer-demanded information.
6. Integration of climate information into decision contexts and support systems of farmers through a climate field school process.
7. Receiving feedback from climate field school to refine climate information and applications.

The agriculture sector in Pacific SIDS is subjected to a number of climate and non-climate risks, including but not limited to:

1. Production risks, which is characterized by high variability of production outcomes due to external factors, such as weather, pests and diseases, or adverse events during harvesting or threshing that may result in production losses.
2. Price or market risks, which refer to input and output price volatility, including risks arising from the non-delivery and/or untimely delivery of inputs or outputs, particularly those that are perishable. The lack of infrastructure and well-developed markets in smaller island countries makes this a significant source of risk.
3. Financial and credit risks, which include cash flow during the entire production cycle, risk transfer mechanisms, such as insurance and safety nets, like credit and borrowing.
4. Institutional risk, which is due to unexpected changes in regulations, financial services, level of price or income-support payments, subsidies and other mechanisms that influence farmers' activities.
5. Technology risk, including the introduction of genetically modified crops, or new foreign species.
6. Personal risk, which includes risks affecting the life and well-being of people working on farms, as well as asset risks from floods, cyclones, droughts and possible damage or theft of production equipment and assets.

The participatory climate risk management process needs to capture these dimensions of farmers' risk management contexts. This will enable climate information and service providers to understand the decision contexts of farmers and farmers' service delivery-support agencies. The Pacific SIDS need to integrate potential climatic changes and impacts into their agricultural development plans to ensure the sector's sustainability.

Climate information need assessment

The national agricultural and meteorological agencies and other climate-sensitive institutions need to have continuous interaction processes to establish a mechanism that generates and applies climate information in the relevant decision context. The Monsoon Forum mechanism in Asia is a good practice that could meet this requirement. A national monsoon forum has been set up in countries, such as Cambodia, Maldives, Myanmar, Nepal and Sri Lanka, as a platform for knowledge sharing by bringing together technical institutions and individuals that generate climate information and potential end users of such information, such as decision-makers and policymakers. This helps in a better understanding of the information requirements, which can be downscaled according to the specific context and thus enhance the preparedness for climate-associated risks.

Having established climate information needs, national meteorological agencies could refine their observation, data management and information-generation capabilities to produce and disseminate tailor-made climate information products to national and subnational stakeholder agencies and farmers.

Farmer and climate information provider institutional mechanism

Once information products that are relevant to farmers' needs are available, an institutional mechanism to promote dialogue between farmers and information providers could be established to earn farmers' trust in integrating information into farming activities. The Forecast Application for Risk Management (FARM) in Agriculture School, established in Asia, is a good practice for adoption in the Pacific SIDS.

The Monsoon Forums, along with FARM schools, will provide constant feedback on the climate risk information and application process for the continuous refinement and improvement of climate risk management.



INTEGRATION OF CLIMATE RISK MANAGEMENT PRACTICES

Table 2 presents the outcomes of a rapid analysis of current capacities in integrating climate risk management practices in six selected countries of the Pacific. The majority of the Pacific countries analysed in the study have poor capacities to integrate climate risk management practices. For example, all six countries (Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu) ranked poor in indicators, such as participatory climate risk assessment, assessment of climate risk information needs and having an institutionalized feedback mechanism. Only Fiji and Vanuatu performed satisfactorily in climate data management and information generation. Overall, there is room for improvement among all Pacific countries to harness their potential to integrate climate risk management into their development policies, plans and programmes. Capacity development should permeate at all levels, involving a multi-stakeholder and multi-sector approach.

Table 2 Current capacity in selected Pacific small island developing States on climate risk management

<i>Climate risk management elements</i>	<i>Fiji</i>	<i>Papua New Guinea</i>	<i>Samoa</i>	<i>Solomon Islands</i>	<i>Tonga</i>	<i>Vanuatu</i>
1. Participatory climate risk assessment	1	1	1	1	1	1
2. Assessment of climate risk information needs	1	1	1	1	1	1
3. Institutional mechanism for continuous agricultural meteorology dialogues	1	2	1	1	1	1
4. Climate data management and information generation	3	2	2	2	2	3
5. Capacity to tailor climate risk information	2	1	1	1	1	2
6. Climate information integration into decision contexts	2	1	1	1	1	1
7. Institutionalized feedback mechanism	1	1	1	1	1	1

Source: Based on RIMES expert analysis

Scoring: 0- very minimal to non-existent; 1- poor; 2- needs improvement; 3- satisfactory; 4- very good; 5- excellent



THE WAY FORWARD

In light of the alarming disaster losses in the Asia-Pacific region, mainstreaming DRR and climate risk management is essential to reduce disaster losses and to support poverty reduction and sustainable development efforts. The stakes are high for the vulnerable economies in the subregion. South-South cooperation can be used to develop successful adaptation strategies for resilient agriculture, at the national, subnational and community levels in the Pacific SIDS. Leveraging the lessons learned from Monsoon Forums and Climate Field Schools in many countries in Asia would be a valuable move towards institutionalizing a climate risk management approach in the agriculture sector in the Pacific SIDS.

There is scope for the integration of DRR and CCA into the agriculture sector of Pacific countries. While some institutional mechanisms may exist, limited progress has been made at the operational level. The information presented in Table 2 shows the need for policies that establish an integrated climate risk management mechanism and considerable capacity building to put climate risk management into practice. Revisiting and implementing the recommendations from the capacity-building workshop (ESCAP, 2016), *Building Climate Resilient Agriculture in Pacific SIDS*, can be the first step to move forward.

Annex

Current capacity in select Pacific SIDS on climate risk management

Country	Population (2016)	Portion of population dependent on agriculture	Agriculture share of GDP (2015)	Agriculture and economy
Federated States of Micronesia	104,000	< 10%	27.7%	Key economic sectors include fisheries, tourism and copra. Farming is mainly subsistence and declining in importance. Principal crops include coconuts, bananas, betel nuts, cassava and sweet potatoes. Exports include fish, garments, bananas, black pepper, sakau (kava) and betel nut. Although agriculture contributes less than 7 per cent of export revenue, it can potentially help reduce food imports.
Fiji	897,000	67%	11.2%	Key economic activities are in tourism, sugar and textiles. Exports include sugar, garments, gold, timber, fish, molasses and coconut oil; sugar accounts for a quarter of export earnings, so that sugarcane labourers are plenty. But in general, the country has a large subsistence agriculture sector.
Kiribati	114,000	15%	24.1%	Key economic sectors include fisheries, agriculture and tourism. Copra accounts for two-thirds of export income. Other export products include seaweed, pet fish and shark fins. The country's problems include shortage of skilled workers, weak infrastructure and remoteness from international markets. Limited domestic production ability suggests the need to import nearly all essential food (including rice and flour) and manufactured items. About 46% of the average annual household income of AU\$8,700 is spent on food. Most islanders engage in subsistence activities ranging from fishing to growing crops like bananas, breadfruit and papaya.
Marshall Islands	53,000	18%	16.4%	Key economic sectors are fisheries and tourism. Subsistence agriculture is common with coconuts, taro and breadfruit as crops. Industry is limited to handicrafts, tuna processing and copra, with major exports of copra cake, coconut oil, handicrafts and fish. Because of its limited natural resources, the country imports a wide variety of goods, including food and consumer goods.
Nauru	10,000	NA	3%	Key economic activities include phosphate mining, offshore banking and coconut products. Government exports phosphate but imports most necessities, including food heavily.
Palau	21000	3%	3.7%	Key economic sectors are tourism, agriculture and fishing. Exports include shellfish, tuna, copra and garments. Agriculture is mainly subsistence, with coconuts, root crops and bananas as principal crops. The country imports food and manufactured goods, among others.
Papua New Guinea	77,76000	75%	20%	Key economic activities are in agriculture, petroleum, mining, forestry, fisheries, copra and palm oil. Exports include copper ore, gold, oil, logs, palm oil, coffee, cocoa, copra, crayfish and prawns. The country has huge natural gas reserves, but agriculture continues to provide subsistence livelihood to 75 per cent of the population with minerals, timber and fish sectors largely dominated by foreign investors.

Country	Population (2016)	Portion of population dependent on agriculture	Agriculture % of GDP (2015)	Agriculture and Economy
Samoa	194,000	65%	9.2%	Key economic activities are in fisheries, tourism, textiles and manufacture of automotive parts. Exports include fish, coconut oil and cream, taro, automotive parts, garments and beer. Problems include vulnerability to storms, dependence on development aid, remittance, fishing and agriculture. About two-third of the labour force, 90 per cent of exports and most manufacturing processes are agriculture-based.
Solomon Islands	594,000	75%	28.1%	Key economic sectors include forestry, fisheries and mining. Exports include timber, fish, copra, palm oil and cocoa; The country depends largely on agriculture, fishing and forestry and imports food, manufactured goods and petroleum products heavily.
Tonga	106,000	27.5%	22.3%	Key economic sectors include agriculture, fisheries and tourism. Exports include squash, vanilla beans, yam root crops and fish. People living in rural areas rely on plantation and subsistence agriculture, with coconuts, vanilla beans and bananas as major cash crops and the processing of coconuts into copra and desiccated coconut as a significant industry. Livestock-raising has the potential to reduce currently substantial food imports.
Tuvalu	9,000	NA	25.9%	Key economic activities are fisheries and copra, the country's major exports. Problems include heavy dependence on imported food and fuel, scarce jobs, subsistence farming and fishing due to the country's small size and almost total lack of exploitable resources. Most residents make a living through exploitation of the sea, reefs, atolls and overseas remittances. Livestock raising has potential to reduce food imports.
Vanuatu	270,000	65%	26.7%	The country's economy is primarily agricultural, with about 80% of the population in subsistence to smallholder farming of coconut and other cash crops. Other economic activities include tourism, offshore financial services, fisheries and forestry. Copra accounts for more than 35% of the country's exports. Other exports include beef, cocoa, timber, kava and coffee. To date, there remains heavy dependence on small-scale agriculture for about two-third of the population, but there is potential for livestock farming.

Source: ESCAP Statistical Database based on data from the UNSD National Accounts Main Aggregates Database. Available from http://data.unescap.org/escap_stat/; www.theglobaleconomy.com; <http://data.worldbank.org/>; <http://unohrlls.org/about-sids/country-profiles/>; and www.cia.gov (accessed December 2016)

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FROM
RISK^{TO}
RESILIENCE
SERIES



This series—a product under the **Enhancing Knowledge and Capacity to Manage Disaster Risk for a Resilient Future in Asia and the Pacific Project**—is part of a larger effort within ESCAP to support its member States in building up their resilience to changes in climate conditions and to help foster sustainable development. ESCAP and partners initiated the project with support from the United Nations Development Account.