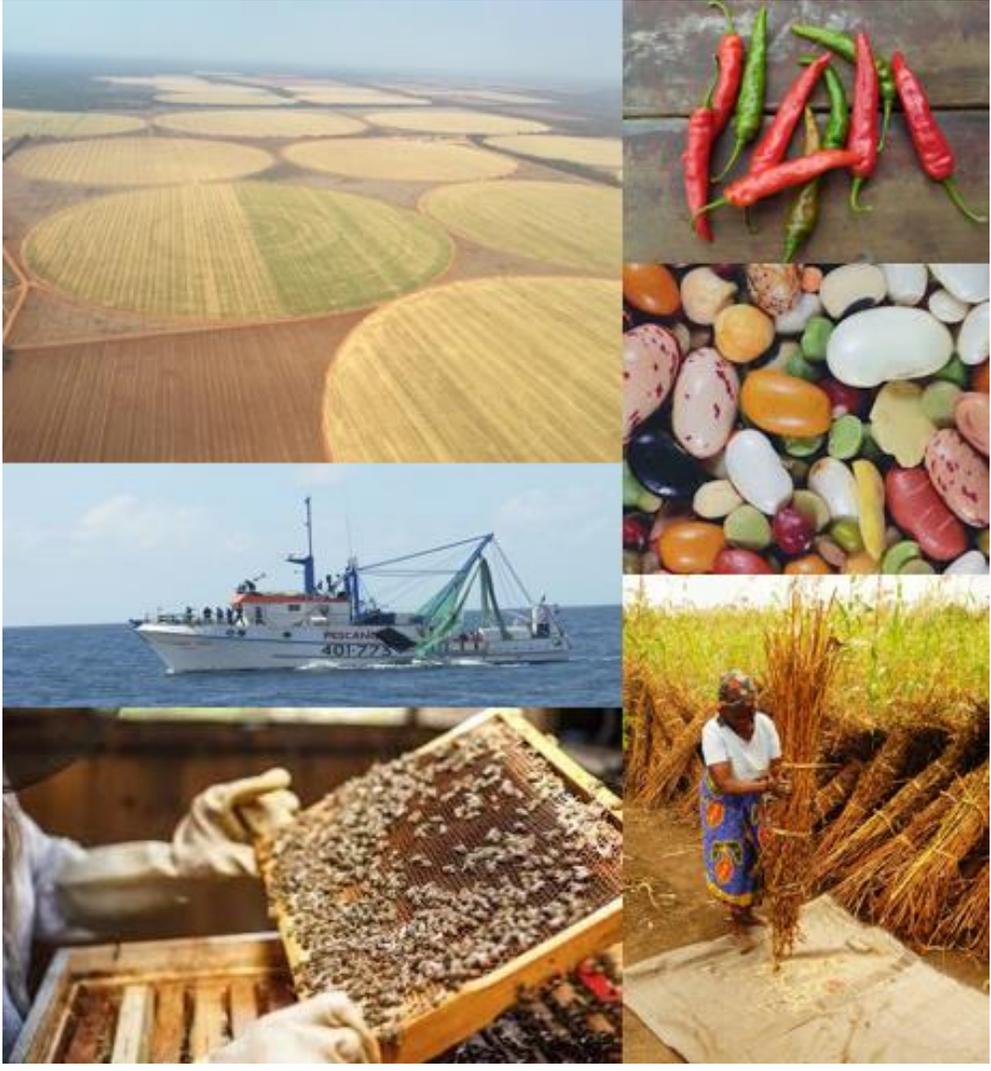

Strengthening Regional Agriculture Exports from APEI+ Countries to Mauritius and Seychelles



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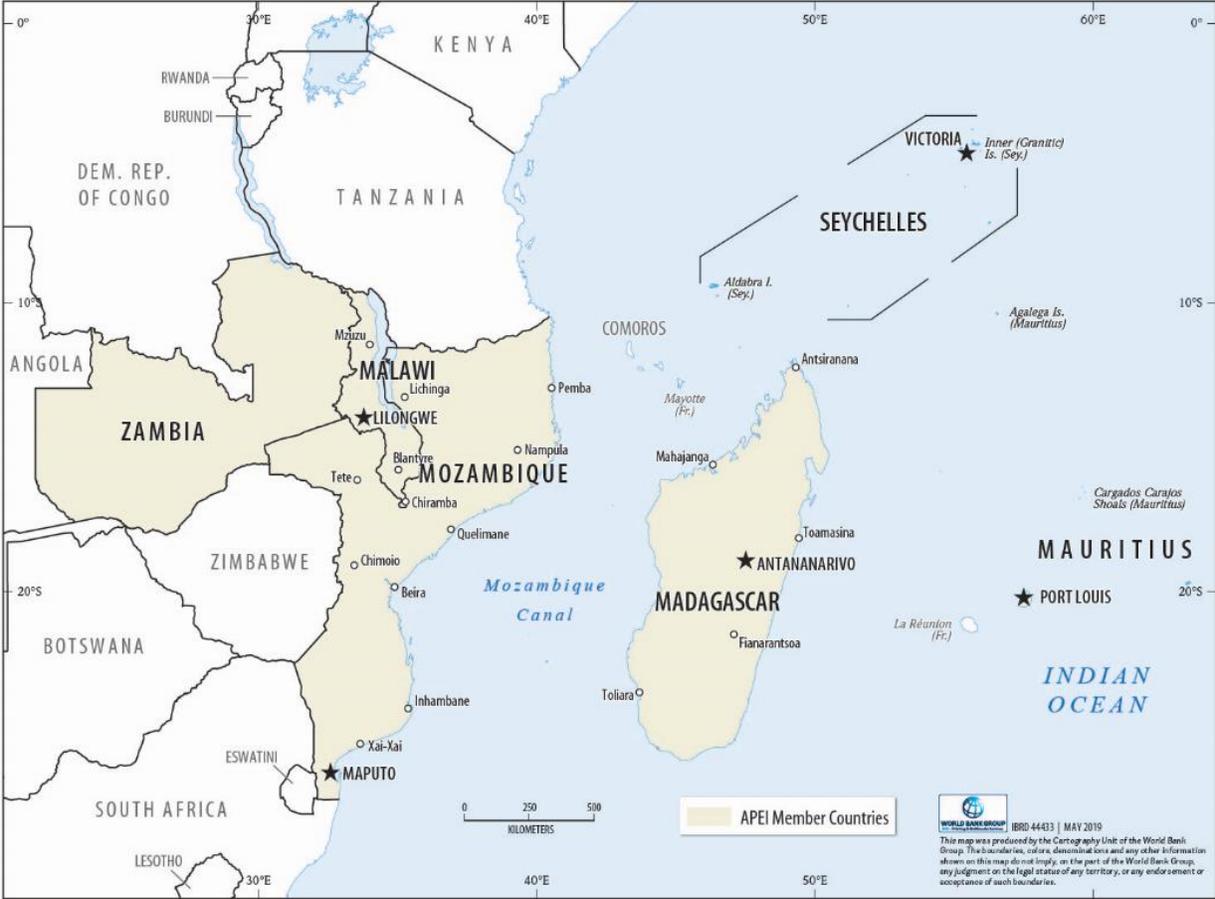
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APEI+ Map



Synopsis

- **At a high-level meeting in October 2017, APEI member countries and Madagascar (APEI+) identified enhanced regional agricultural trade as a key priority.** Trade between the mainland countries and Madagascar as exporters and Mauritius and Seychelles as importers was identified as areas where tangible benefits from regional integration could be realized given the latter countries' dependence on imported food and raw materials. Apart from cotton lint, for which the mainland APEI countries are already large suppliers to Mauritius, nearly all agriculture exports from APEI+ countries to the island nations are exports from Madagascar to Mauritius. Commodities widely exported by Malawi, Mozambique, and Zambia to have generally not found a market in Mauritius or Seychelles to this point. Addressing constraints for such trade to materialize was identified as a promising avenue to open new opportunities for regional integration and inclusive growth in the producing countries, while at the same time reducing food prices and input costs in the importing countries. The matter was referred to the World Bank for further analysis which is presented in this report.
- **Potential for increased agricultural exports from APEI+ countries to Mauritius and Seychelles does exist but is smaller than headline numbers suggest.** Mauritius' and Seychelles' total agricultural imports are close to US\$1.5 billion per year but only US\$300 million of these imports are matched by export potential in APEI+ countries of which US\$50 million are already being realized.
- **Approximately US\$100 million in untapped potential is hampered by high regional transport cost and unlikely to materialize soon.** These are commodities with low value per weight such as sugar, maize, and oil-cake, which makes freight cost a key defining factor of competitiveness. Currently, such commodities are mostly imported by Mauritius in bulk from South America at significantly lower freight cost than what is available within the region. However, improvements in regional trade connectivity could have a substantial impact in unlocking this trade potential in the longer term. Even under current conditions, there might also be a small niche market in Mauritius for high value non-GM soy meal from APEI+ countries for animal feed., Seychelles presently buys container-size loads on non-GM soymeal from India and may be potential for APEI+ countries to enter this market provided new SPS risk assessments are performed. Stock feed ingredients and other dry commodities generally have low SPS risk.
- **An additional US\$35 million of untapped trade potential is in products with high SPS risks, which pose a serious, though not insurmountable obstacle to regional trade.** Significant inroads were made between Madagascar and Mauritius with SPS risk assessments for high-value seafood products, fresh vegetables, and other commodities in the early 2000s. Very few risk assessments have been done between the island nations and mainland APEI countries. Cooperation on future risk assessments, including joint-assessments and data sharing could therefore be a way to open new markets and accelerate regional integration for priority commodities if accompanied by measures to facilitate market information and business-to-business linkages.
- **Among the remaining US\$110 million in untapped potential are products such as pulses, nuts and seeds, honey, and dried chili pepper that are less affected by high transport costs and SPS risks.¹** More than a new source of imported food, these commodities have potential as material for value-

¹ An additional US\$5 million in untapped trade potential is scattered across several very small niche products that were not classified in terms of transport cost and SPS risk for the purposes of this report.

added processing in the island nations. Policy uncertainty and small market size were frequently cited as additional problems undermining potential importers' and exporters' confidence in exploring intra-APEI+ agriculture trade opportunities. Firms interviewed in the context of this report also frequently pointed to the difficulties in establishing reliable business contacts in APEI+ partner countries. Dissemination of market information on these product groups to potential suppliers in APEI+ countries is therefore expected to yield sizeable benefits in terms of unlocking agricultural trade potential in the short term. In addition, there remains potential to scale-up established areas of intra-APEI+ trade in products such as cotton, vanilla, and other spices.

List of Abbreviations

AFB	American foulbrood (a bacteria-related bee disease)
AMB	Agricultural Marketing Board (of Mauritius)
APEI	Accelerated Program of Economic Integration
APEI+	APEI countries plus Madagascar
BRC	British Retail Consortium (food safety metasystem)
cif	Cargo, insurance, and freight
COMESA	Common Market for Eastern and Southern Africa
COMACO	Community Markets for Conservation (Zambian private company)
COMTRADE	UN Comtrade database
DPO	Development policy operation
DRC	Democratic Republic of Congo
ETG	Export Trading Group
EU	European Union
FAO	Food and Agriculture Organization (of the United Nations)
FMD	Foot and mouth disease
fob	Free on board
FRA	Food Reserve Agency (of Zambia)
FTA	Free trade agreement
GDP	Gross domestic product
GM	Genetically modified
GMO	Genetically modified organism
HACCP	Hazard analysis and critical control point
HS	Harmonized System (of trade classification)
IIAM	Mozambique Institute of Agricultural Research
IOC	Indian Ocean Commission
ISO	International Standards Organization
LFL	Livestock Feed Ltd. (Mauritian private company)
MDG	Madagascar
MOZ	Mozambique
MUR	Mauritius
MWI	Malawi
NBA	National Biosecurity Agency (of Seychelles)
NGO	Non-governmental agency
SAA	Seychelles Agriculture Agency
SADC	Southern Africa Development Community
SOPA	Soybean Processors Association of India
SPS	Sanitary and phytosanitary
STC	Seychelles Trading Company
STOI	<i>Société Trading de l'Océan Indien</i> (Malagasy private company)
SYC	Seychelles
UAE	United Arab Emirates
UN	United Nations
USDA	United States Department of Agriculture
WBG	World Bank Group

WFP World Food Programme (of the United Nations)
WTO World Trade Organization
ZMB Zambia

Acknowledgements

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Executive Summary

What this report is about

At a high-level meeting in October 2017, APEI member countries and Madagascar (APEI+) identified enhanced regional agricultural trade as a key priority. Exports from mainland countries and Madagascar that are rich in agriculture resources to Mauritius and Seychelles that have little land area so are structurally dependent on imported food staples and agriculture raw materials was identified as an area where tangible benefits from regional integration could be realized. Other than cotton lint, for which mainland APEI countries are large suppliers to Mauritius, there have been very few agriculture exports from APEI+ countries to the island nations except from Madagascar to Mauritius. Commodities widely exported by Malawi, Mozambique, and Zambia have generally not found a market in Mauritius or Seychelles to this point. Addressing constraints for such trade to materialize was identified as a promising avenue to open new opportunities for regional integration and inclusive growth in the producing countries, while at the same time reducing food prices and input costs in the importing countries. The matter was referred to the World Bank for further analysis which is presented in this report.

To better understand the opportunities for increased agriculture trade between APEI+ countries this report addresses two interrelated questions:

- [What is the potential for increased agriculture imports by Mauritius and Seychelles from other APEI+ countries?](#)
- [What is holding back regional agriculture trade potential and how can constraints be addressed?](#)

For this analysis of trade potential, Mauritius and Seychelles are treated as importer nations while the mainland APEI countries and Madagascar are treated as exporters. As small island nations, both Mauritius and Seychelles have limited potential in crop production and rely heavily on food imports that could, in principle, be met by mainland APEI countries and Madagascar where land is not such a constraint. The island nations do, of course, have their own agriculture sectors that are important for supplying local consumers and many other reasons. Apart from exports of animal feed made in Mauritius of imported ingredients to neighboring Indian Ocean countries including Seychelles and Madagascar, however, the main markets for food products from Mauritius (mostly sugar and fish) and Seychelles (fish) are well developed and outside the APEI+ region so are not a focus of this study. Similarly, there are already well-established areas of agriculture trade between Zambia, Malawi, and Mozambique that are not covered in detail here.

The first step of analysis was a review of UN COMTRADE trade data to identify products with intra-regional trade potential. Such products are defined as agricultural commodities (HS chapter 1-24 & 52) that are exported by APEI+ countries and imported by Mauritius and Seychelles. Untapped potential is identified where such potential does not translate into actual trade flows. Specifically, trade potential of a given product is defined as the minimum between global exports by APEI+ partners and global imports by Mauritius and Seychelles. This is equivalent of trade that could take place in a hypothetical situation where Mauritius and Seychelles source all their imports from the other APEI+ countries up to their supply potential. Untapped potential is the trade potential less existing imports by Mauritius and Seychelles from APEI+ countries. This analysis defined a master list of all products (at HS6 digit level of detail) with a trade potential upwards of US\$100,000 per year for further analysis.

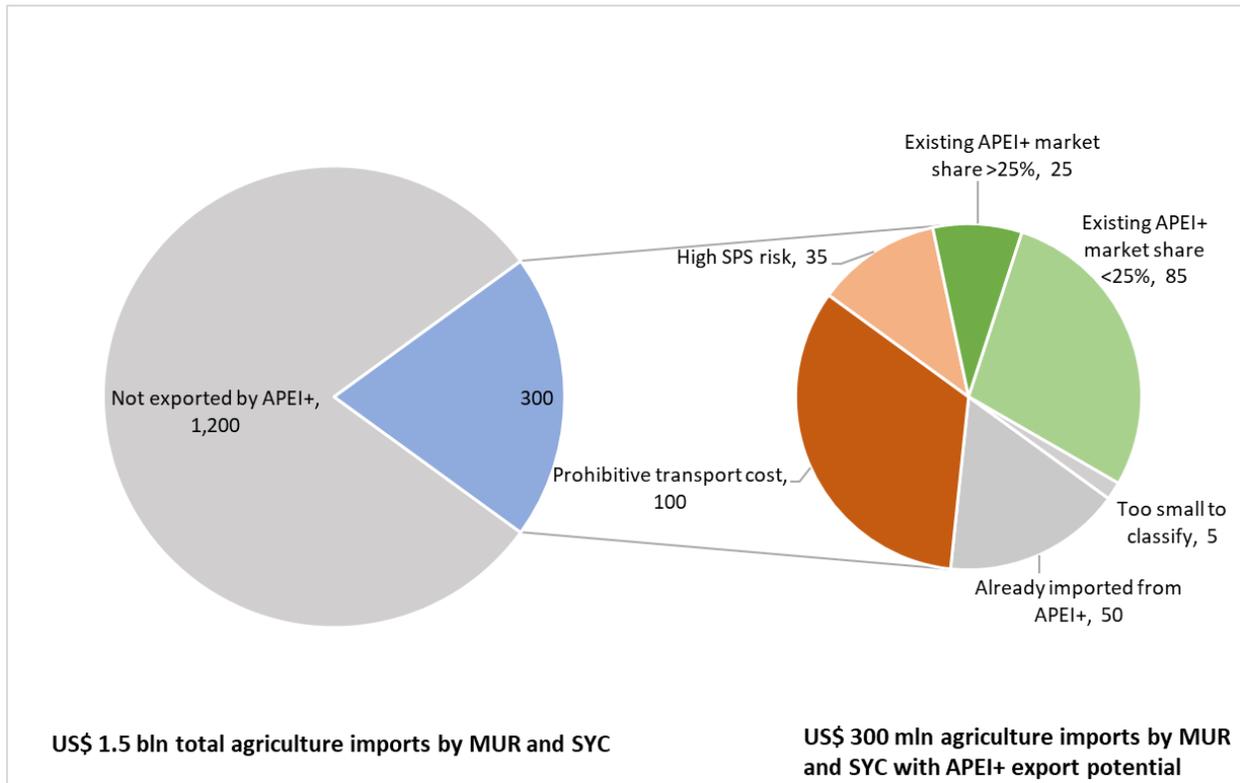
Consultations with agribusiness firms, exporter associations, sanitary and phytosanitary officials, logistics companies, and others throughout the APEI+ region established detailed information on market conditions and binding constraints. A first round of consultations was undertaken in February and March 2018 in Mauritius and Seychelles to identify broad areas of trade potential and what would be required for APEI+ exporters to compete. This was followed in April and May 2018 by consultations in each of the mainland countries and Madagascar that focused on understanding the supply potential, current export relations, and interests in developing or expanding trade relations with Mauritius and Seychelles.

Based on this information, the research identified commodity groups where constraints are less binding and where spreading market information to interested firms could lead to new trade linkages. Challenges around sanitary and phytosanitary (SPS) concerns of the island nations and transport connectivity with the mainland and Madagascar emerged as the two most important cross-cutting constraints to APEI+ regional trade. As such, preference was given to dry and/or processed commodities including products from suppliers with demonstrated capacity to meet EU or other advanced market food safety requirements. Regarding connectivity, preference was given to commodities that can be shipped using low backload rates from inland locations and are high enough in value to compensate for higher freight cost within the region. Where relevant, trade preferences resulting from APEI+ countries' membership in COMESA and SADC were also considered. A further refinement was to focus on commodities with high development potential for smallholders. Given the focus on new trade opportunities, well established commodities that are already traded in sizable quantities within the region were not selected for detailed coverage.

For each priority commodity group, the report provides a discussion of trade opportunities and market trends. This information is intended both to inform regional policy discussion about measures to realize agricultural trade potential, and to make private sector players aware of opportunities for trade and investment in these sectors.

Potential for increased agriculture imports by Mauritius and Seychelles from other APEI+ countries

Potential for increased agricultural imports by Mauritius and Seychelles from APEI+ partners exists but is smaller than headline numbers suggest. Given their high import dependence and large tourism sectors, Mauritius' and Seychelles' total agricultural imports are close to US\$1.5 billion per year. However, at the detailed product level, only approximately US\$300 million of these imports are currently matched by export potential in APEI+ countries, and US\$50 million of this is already being realized. Of the remaining US\$250 million, approximately US\$100 million is in products with very low value per weight (mostly sugar, maize, and oil cake), which is unlikely to be price competitive if freight costs within the region continue to exceed that from major producer countries, mostly in South America. An additional US\$35 million is in products with high SPS risks, posing a serious, though not insurmountable obstacle to the development of regional trade. This leaves a remainder of approximately US\$115 million in products with immediate untapped potential. Out of this, US\$25 million is in products such as cotton and vanilla for which APEI+ countries (mostly Madagascar) already have a sizeable market share (greater than 25 percent) that could be scaled up, while US\$85 million is in products where intra-APEI+ trade is currently small or nonexistent (less than 25 percent). The remaining US\$5 million in untapped trade potential is scattered across small niche products (greater than US\$100,000 per annum) that are too small to classify and were not further analyzed for this report. This is illustrated in Chart 1.

Chart 1: MUR and SYC agriculture imports and APEI+ trade potential

Source: Authors calculation, based on data from UN COMTRADE, Mauritius customs authority, and Ahmed et al (2017)

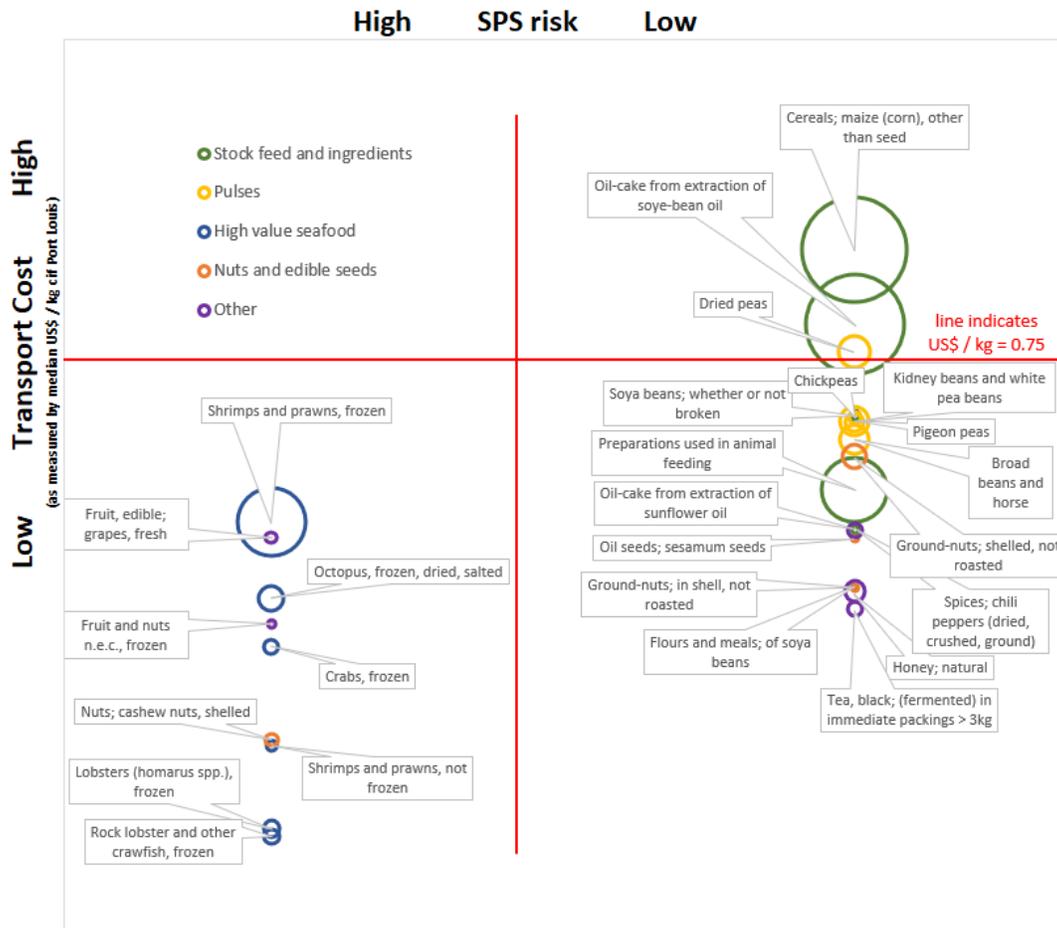
Further qualitative analysis confirms short term potential in a number of commodity groups and products within the ‘low transport cost, low SPS risk’ category. Products in this category for which APEI+ producers are already well established in the island country’s markets, but further potential remains, include cotton, vanilla, and other spices. These were not analyzed further for the purpose of this report, which focuses on new opportunities. Rather, emphasis in the category of commodities with low SPS risk, low transport cost was given to [pulses](#), [nuts and seeds](#), and high value products including [honey](#), [dried chili peppers](#), and [tea](#).

For commodities with high SPS risk, success of Mozambique and Madagascar in exporting high-end seafood products shows that food safety challenges are not insurmountable. Frozen [seafood](#) products from Mozambique and Madagascar are therefore likely to be a good area for increased trade. Potential in [fresh fruits and vegetables](#), on the other hand, is more challenging despite the success of Zambia and Madagascar in supplying European countries and other markets with demanding SPS requirements. Because of their isolation, plant health risks are of major concern to the island nations and require new risk assessments before products can be allowed in. SPS risk assessments between Mauritius and Madagascar for low- and high-risk commodities in the early 2000s helped open several millions of dollars of trade annually between these countries and would be a good area for cooperation between the other APEI+ countries as well.

Trade potential in the ‘high transport cost’ (low value to weight) category is unlikely to realize at significant scale unless regional freight costs are brought down considerably, and reliability is improved. This category is somewhat inflated by the large quantities of sugar imported by Mauritius in past years, which have been influenced by a complex array of tariffs and production subsidies. Maize and soybean

meal and soybean cake that are used mostly as [stock feed ingredients](#) have the greatest potential in this category. Chart 2 places priority commodities along the dimensions of SPS risk and transport cost with bubble size proportional to trade potential for each product.

Chart 2: Priority Commodities by Transport Cost and SPS Risk



Source: Authors' calculation based on data from COMTRADE and Mauritius Revenue Authority.

Notes: High / low transport costs are products with a median landed cif value in Port Louis of below / above US\$0.75 per kg (presented on the vertical axis in inverted logarithmic scale). Low / high SPS risk is based on a binary classification developed by Ahmed et al (2017). This classification does not cover HS category 03 (Seafood), which was classified by the authors as high SPS risk. Bubble size is proportional to trade potential for a given product.

Pulses

Mozambique, Malawi, and Madagascar are large exporters of pulses (see Table 1). More than 91 percent of pulse exports from Mozambique and 75 percent of pulse exports from Malawi have been to India. The weakness of relying so heavily on this one market was exposed in 2017 when India introduced import quotas on pigeon peas and other pulses to protect its own farmers leading to a significant price collapse in both Mozambique and Malawi. By comparison, just 29 percent of Madagascar's pulse exports have been to India giving this country the most diverse export base for pulses of the main APEI+ exporters. The main internationally traded pulses are dry beans, dry broad beans, dry peas, chickpeas, cowpeas, pigeon peas, and lentils. Pulses can be consumed whole or split, ground in to flours or separated into fractions such as protein, fiber, and starch. They can also be processed and canned.

Although Mauritius and Seychelles are small markets for pulses compared with massive production in the mainland countries and Madagascar, this could be a good area for trade expansion. Per capita, Mauritius and Seychelles are large pulse consumers and growth in the Mauritian food processing industry can fuel further demand for pigeon peas, dry beans, and other types of pulses exported by APEI+ countries. The market in Seychelles revolves mainly around one type of lentil grown in Turkey with a unique flavor but are other opportunities APEI+ countries displace dry bean and pigeon pea imports from elsewhere. SPS requirements are relatively straightforward with pulses and the value to weight ratios for these commodities are higher than for bulk grains and oil-cake used for stock feed.

Table 1: Imports and exports of different types of Pulses (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Pigeon peas						
071390 - n.e.c. in heading no. 0713 (pigeon peas)	2,059.5	158.6	619.4	37,324.0	67,536.2	52.7
Dried peas						
071310 - Dried peas	2,554.4	10.6	1,036.8	1,807.6	1,677.2	80.9
071320 - Chickpeas (garbanzos)	497.8	33.9	76.9	401.4	34.6	3.6
Dried beans and broad beans						
071331 - Black gram (<i>Vigna mungo</i>) and mung beans	42.8	39.3	2,645.0	1,809.8	10,794.0	268.8
071333 - Kidney beans, including white pea beans	992.1	13.7	9,674.3	688.4	426.3	85.1
071339 - n.e.c. of 0713.30 (other dry beans)	244.0	65.5	18,377.9	1,536.4	1,429.6	217.1
071350 - Broad beans and horse beans	2,299.2	2.5	2,111.7	27.6	28.5	0.1
Lentils						
071340 - Lentils	2,942.2	616.5	60.0	725.4	516.8	0.2
0713 - Total dried legumes; shelled (4-digit level)	11,649.1	941.2	36,167.9	45,573.1	82,878.1	786.5

Source: UNCOMTRADE data (annual average values, 2012-17).

Pigeon peas are, by far, the largest pulse export for Malawi and Mozambique accounting for 82 percent and 84 percent of total pulse exports from these countries respectively. Pigeon peas also account for a large share of pulse imports by Mauritius and Seychelles but are not the leading product. For Mauritius, lentils, dried peas, and broad beans or lima beans are the three most important pulse imports in that order. For Seychelles, lentils are the most important pulse import followed by pigeon peas. Of the main APEI+ exporters, Madagascar trades the most diverse range of pulses with most exports falling in the category of dried beans and broad beans. In this category, Madagascar exports red kidney beans, red speckled kidney beans, white lima beans, white pea beans, and blackeye peas among others.

The future competitiveness of APEI+ countries in supplying regional and global markets depends on the ability to grow a variety of pulses and switch between pulse crops according to market demand. No other export market is as large as India or able to absorb just one type of pulse as Malawi and Mozambique had become accustomed with pigeon peas. All global pulse producers suffered from the introduction of import quotas by India, but in Madagascar the experience with pulses has been more positive because of producing many different pulses for different export markets. Provided farmers have access to the right kind of seed, it is not difficult to switch from one pulse to another and the same networks that were used to promote production and assembly of pigeon peas in Malawi and Mozambique could easily be used for other pulses.

Nuts and edible seeds

Groundnuts, sesame, and cashew are important smallholder export crops in the mainland countries and Madagascar and offer further potential for increased trade with the island nations. Annual average import and export values are summarized in Table 32 which provides an overview of potential for trade

complementarity between APEI+ countries in these commodities. As shown, Mozambique is a large exporter of all commodities in this group, particularly sesame and cashew. Malawi is a large exporter of shelled groundnuts and, to a lesser extent, sesame. Madagascar is a moderately large exporter of shelled groundnuts and in-shell cashew. These commodities are exported to many international buyers at globally competitive prices. Zambia is a much smaller exporter of the selected commodities compared with other APEI+ countries but is still a large producer of groundnuts with considerable potential for increased growth and value addition.

The analysis thus suggests a good potential for increased exports from the mainland APEI countries and Madagascar to the island nations. APEI+ countries are proven exporters of groundnuts, cashew, and sesame at globally competitive prices. While total market size in Mauritius and Seychelles is dwarfed by production volumes in the other countries, especially Mozambique, nuts and edible seeds are well-suited to value-added processing and can be used to manufacture different foods and confectionery products for domestic sale and re-export to Indian Ocean neighbors.

Table 2: Imports and exports of selected Nuts and Edible Seeds (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Groundnuts						
120210 - Ground-nuts; in shell, not roasted	214.0	18.5	161.5	74.1	2,319.6	214.7
120220 - Ground-nuts; shelled, not roasted	1,532.8	9.9	1,749.1	20,416.4	9,719.0	426.1
Sesame						
120740 - Oil seeds; sesamum seeds	199.8	9.3	2.1	492.4	67,041.4	0.0
Cashew						
80131 - Nuts; cashew nuts, in shell	50.0	24.4	3,558.6	26.9	38,331.4	30.4
80132 - Nuts; cashew nuts, shelled	428.2	137.0	462.3	0.3	33,001.9	0.0

Source: UNCOMTRADE data (annual average values, 2012-17).

Other high value products: Honey, Chili Peppers, Tea

A few other high-value products also have potential for increased exports from the mainland APEI countries and Madagascar to Mauritius and Seychelles. These commodities include products with strong links to smallholder producers like natural honey and chili peppers and estate crops like tea that are already exported to the EU and elsewhere at globally competitive prices. To date, very little trade across these commodities takes place with Mauritius or Seychelles except for a small amount of gourmet honey exported from Madagascar. Black tea with a 30 percent preferential margin in Mauritius over non-SADC / non-COMESA suppliers offers especially good potential for blending with local tea and re-export from both Mauritius and Seychelles.

Table 3: Imports and exports of other selected commodities (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Selected commodities						
40900 - Honey; natural	1,053.1	122.4	94.7	66.5	0.4	2,110.6
90420 - Spices; chili peppers (dried, crushed, ground)	630.1	47.6	139.6	2,518.6	550.7	42.1
90240 - Tea, black; (fermented) in immediate packings > 3kg	346.2	252.0	56.0	76,597.6	4,749.7	45.9

Source: UNCOMTRADE data (annual average values, 2012-17).

Seafood

Mauritius and Seychelles rely on imports of prawns, lobster, crab, and other specialty types of seafood.

Both countries are large exporters of tuna and other fish but are not big producers of crustaceans or mollusks. With the growth of tourism and rising incomes in both countries, demand for these higher-end foods has been increasing. Crustaceans including prawns, lobster, and crab, and mollusks including octopus, cuttlefish, and squid are large exports for Mozambique and Madagascar suggesting a good potential for trade complementarity between these APEI+ countries (see Chart 16). Although the market for high-value seafood in Mauritius and Seychelles is small, frozen prawns, lobster, crab, octopus, and squid are very high value to weight ratio products.

Most crustacean and mollusk imports by the island nations are traded on price whereas exporters in Mozambique and Madagascar export very high-quality products that command premium prices in the world market. High-end markets for top quality seafood products do exist in Mauritius and Seychelles that could potentially absorb a few containers of supply from Mozambique and Madagascar each year. Large exporters in these countries say they could easily divert a few mixed containers to the island nations that would otherwise go to Europe. These sales will only ever be a tiny part of the overall business, but exporters said would still be worthwhile for increasing brand recognition of their product. For smaller exporters of artisanal-caught seafood products, however, the Mauritius and Seychelles markets may be too small to be of much interest given limited resources for targeting multiple markets and strong prices available in Europe and Asia.

Table 4: Imports and exports of different types of (a) crustaceans and (b) mollusks (US\$ '000)

(a) Crustaceans

HS Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
306 - Crustaceans (all types and forms)	13,289.1	2,541.4	110,799.5	0.1	54,609.3	2.0
Shrimps and prawns						
30613 - Shrimps and prawns, frozen	8,974.6	1,573.1	91,755.9	0.0	42,101.6	0.0
30623 - Shrimps and prawns, not frozen	846.6	62.0	279.0	0.0	142.3	0.9
Lobster						
30611 - Rock lobsters and other sea crawfish, frozen	661.5	55.3	4,738.0	-	4,717.4	-
30612 - Lobsters (homarus spp.), frozen	1,895.6	606.8	59.0	0.0	729.1	0.0
30621 - Rock lobster and other sea crawfish, not frozen	42.5	16.2	656.3	-	1,356.0	0.6
Crab						
30614 - Crabs, frozen	506.5	152.5	4,167.3	0.0	1,247.0	0.1

(b) Mollusks

HS Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
307 - Mollusks (all types and forms)	5,022.8	873.4	8,664.3	0.0	2,524.7	5,315.3
Cuttle fish and octopus						
30749 - Cuttle fish and squid, frozen, dried, salted	1,981.9	357.7	262.7	-	166.2	0.0
30759 - Octopus, frozen, dried, salted	1,672.0	64.1	5,104.8	-	661.4	0.0

Source: UNCOMTRADE data (annual average values, 2012-17).

Fruits and vegetables

Supermarket companies, wholesalers, food distributors and others met in Mauritius and Seychelles expressed a strong interest in developing new sources of supply for fresh fruits and vegetables. Compared with dry and processed commodities, SPS risks are much higher with fresh products and call

for good pest control. Logistics including product grading, packaging, and cool chain management are also a significant challenge to the trade of fresh products. These concerns do not preclude new areas of trade from developing but do present a significant challenge. The Seychelles Trading Company for instance reported that fresh strawberries imported from Kenya and Ethiopia have been a growth area since the addition of direct flights from Nairobi and Addis Ababa. Without any direct flights between the mainland APEI countries and Mauritius or Seychelles, however, such trade linkages are much less likely to take off with Malawi, Mozambique, or Zambia. Madagascar, on the other hand, does enjoy direct flights to Mauritius and good connections to Seychelles and is already exporting various fruits and vegetables to Europe. In Seychelles, many fresh fruits carry significant tariffs from which SADC and COMESA partners are exempt, creating sizeable preferential margins for APEI+ exporters.

Other than fresh fruits and vegetables, opportunities to trade processed products also exist. These commodities have lower SPS risk and are less prone to spoil when transport delays arise. Madagascar produces many types of tropical fruit that are amenable to value added processing and there are some processors that have achieved HACCP and other critical food safety accreditations to export to the European market.

Stock feed ingredients

As small island nations, both Mauritius and Seychelles are structurally dependent on imported feed and feed ingredients for livestock production. There is simply not enough land to grow the cereal grains and oilseeds that poultry and other commercially-raised livestock in these countries require. The potential for increased trade of stock feed and feed ingredients, however, is limited compared to its large size in total trade figures. While Zambia is a large exporter of maize, soybean cake, and made stock feed, and Mauritius and Seychelles are large importers, these commodities have low value to weight ratios that make it difficult to compete with global suppliers who enjoy better connectivity and who ship dozens of containers or full vessel loads at a time. Made stock feed has the highest value to weight ratio but Mauritius is a large exporter of made feed itself and enjoys much lower transport cost and well-established business links in Seychelles, Madagascar, and other potential Indian Ocean outlets. Moreover, even though inexpensive backload freight makes it possible for Zambia and Malawi to send truckloads of commodity to a port location for a reasonably competitive price, import parity prices for soybean cake and other feed-related commodities in landlocked Zimbabwe and interior parts of South Africa make these closer by markets more attractive. Madagascar has vast potential to grow stock feed ingredients but is presently a net importer of all commodities in this group.

On this basis, the best prospects for increased exports of stock feed ingredients to the island nations likely involve exporting relatively small consignments of non-GMO soybean oilcake and soybean meal. Stock feed makers in Mauritius and Seychelles all said there is strong and growing demand for non-GM foods in their countries. Non-GM soybean cake sells for around US\$30-40 more per ton than conventional cake which helps to offset some of the higher transport costs associated with importing from landlocked countries in Africa. India also exports non-GM cake and has been the main supplier to Seychelles, yet by using inexpensive backload freight, analysis shows that Zambia and Malawi are likely able to deliver non-GM cake to Victoria or Port Louis for roughly the same price as India.

Table 5: Imports and exports of stock feed and stock feed ingredients (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Made feed						
230990 - Preparations used in animal feeding	6,075.4	3,638.6	68.3	2.5	317.5	15,840.1
Whole grains and meal						
100590 - Cereals; maize (corn), other than seed	23,718.5	380.7	452.6	1,980.7	4,398.7	139,062.3
120100 - Soya beans	209.1	96.3	11.7	6,764.5	1,142.5	11,100.6
120810 - Flours and meals; of soya beans	17.5	156.9	0.8	237.5	56.0	11,908.1
Bran						
230210 - Bran of maize (corn)	18.8	0.4	0.2	686.5	1,223.7	7,043.2
230230 - Bran of wheat	0.6	47.0	-	2,647.9	17,112.0	661.6
Oil-cake						
230400 - Oil-cake from extraction of soya-bean oil	22,604.3	0.1	0.1	4,710.8	32.8	16,770.2
230610 - Oil-cake from extraction of cotton seed oils	39.9	0.1	26.8	3,029.2	973.7	4,661.3
230630 - Oil-cake from extraction of sunflower seed oils	229.8	0.0	0.0	100.5	51.3	261.6

Source: UNCOMTRADE data (annual average values, 2012-17).

Constraints to regional agriculture trade and policy recommendations

Table 6 summarizes findings on constraints and opportunities to regional agriculture trade by product groups. Most constraints fall under the general headings of transport related issues and Sanitary and Phytosanitary (SPS) requirement. An indicative color coding corresponds to the severity of constraints in each category for a given product group from light (green) to moderate (yellow) to severe (red).

Table 6: Main constraints and opportunities to regional agricultural trade by product group

	Transport	SPS	Other
Pulses	Pulses have a higher value to weight ratio than stock feed ingredients so are better able to cover the costs of overland transport. Pulses are traded dry, so speed to market is less of an issue. At current import levels Mauritius has little need or ability to absorb full bulk vessel loads of any pulse, thereby putting African exporters shipping in containers on a more even footing from a transport point of view. Pulses typically arrive in bags which is ideal for exporters in mainland Africa to take advantage of inexpensive backload freight rates which often occurs in bags rather than containers.	The main SPS risk requirements for pulses, involve fumigation and basic hygiene so are not difficult to meet. Malawi has already exported some pigeon peas to Mauritius and SPS risks are all very similar for these commodities.	The main obstacle traders saw in diversifying pulse exports is limited availability of quality seed. Not only does the lack of reliable seed limit total production, but this also gives rise to problems with variations in size, shape, and color that result in price reductions in international markets.
Nuts and edible seeds	Nuts and edible seeds have a higher value to weight ratio than stock feed ingredients and thus are better able to cover the costs of overland transport, though reductions in regional transport cost could still go a long way in aiding the competitiveness of APEI+ suppliers in the island countries markets. They are also traded dry, so speed to market is less of an issue. The small market size for nuts and edible seeds may even be regarded as an advantage for APEI+ exporters in that trade does not happen on the scale of full vessel loads but rather by container.	While not otherwise considered a high SPS risk commodity, groundnuts involve a particularly high food safety risk related to aflatoxin. Progress is being made in raising farmer and consumers awareness of this risk and what is needed to manage aflatoxin effectively. Other than aflatoxins, nuts and seeds are traded dry so present little risk to plant health and pest risks can be managed with fumigation.	There appears to be a lack of awareness among suppliers that are used to trade large quantities to global markets of nearby opportunities in Mauritius and Seychelles, and some consider the upfront cost in tapping these relatively small markets as not worthwhile giving the expected trade volumes.

	Transport	SPS	Other
Other high value products (honey, chilies, tea)	While specific requirements for individual products vary, transport costs are generally less of an issue for high value products and individual products identified in this category do not critically depend on speed to market due to their non-perishable nature.	While some of the products in this group require SPS risk assessment as a pre-requisite for new trade areas to open, requirements are generally manageable. For this to happen private investors need to engage with each other and request their SPS authorities to prepare a risk assessment, which involved some up-front cost on their end.	A fundamental constraint is the lack of business connections between mainland exporters and potential buyers in Mauritius and Seychelles. Tea and chili peppers, for instance, should be relatively easy to export from Malawi to Seychelles or Mauritius for blending with local tea and manufacturing of chili sauces for export once a match is established between buyer and supplier.
Seafood	Transport costs are generally less of an issue for high value products. However, seafood trade depends critically on the maintenance of a cold chain the ability to pack mixed containers puts larger and more diversified exporters at an advantage over small firms.	While seafood products generally have stringent SPS requirements related to food safety and exporter certification, the fact that produce is traded frozen significantly reduces SPS risk. Large exporters in Mozambique and Madagascar sell mainly to Europe and have full HACCP accreditation. Some small firms exporting artisanal products have also been able to achieve HACCP accreditation.	There is a lack of awareness among suppliers that are used to trade large quantities to global markets of nearby opportunities in Mauritius and Seychelles, and some consider the upfront cost in tapping these relatively small markets as not worthwhile giving the expected trade volumes. This is especially true for small exporters of artisanal seafood products which said they prefer to focus their efforts on large markets with greater potential to expand.

	Transport	SPS	Other
Fresh fruits and vegetables	<p>Logistics including product grading, packaging, and cool chain management are significant challenges to the trade of fresh products. High-value horticulture products are mostly transported by air, and without direct flights between the mainland APEI countries and Mauritius or Seychelles exports would have to be routed through competitor countries such as South Africa, Kenya, and Ethiopia that benefit from direct airlinks.</p> <p>Madagascar, on the other hand, which is already exporting various fresh fruits and vegetables to Europe, does enjoy direct flights to Mauritius and good connections to Seychelles so is in a stronger position to open new areas of horticulture trade with the island nations.</p>	<p>Importation of fresh fruits and vegetables can involve significant SPS risks. While inroads were made between Mauritius and Madagascar with SPS risk assessments needed for admissibility of seafood products, potatoes, onions, and other high-risk commodities in the early 2000s, there have been very few risk assessments between the island nations and mainland APEI countries. Because of the small market size, the upfront cost to individual producers in getting the responsible authorities to do the assessment and implementing the required risk mitigations may be prohibitive.</p>	<p>There is limited awareness among suppliers of nearby opportunities in Mauritius and Seychelles. The upfront cost in tapping these relatively small markets may be difficult for firms with established markets in Europe.</p>
Stock feed ingredients	<p>Stock feed ingredients are currently mostly imported in bulk from South America and given the low weight / value ratio of stock feed and its ingredients and strong competition in the global markets, high regional freight costs are likely to remain prohibitive in the medium term. A potential exception is for limited quantities of non-GMO products shipped in containers where APEI+ might be able to achieve a price markup sufficient to cover higher transport cost.</p>	<p>New SPS risk assessments would be required for product admissibility, but declaration conditions for these products are reasonably straightforward to meet. Cereals grains, cereal brans, and oil-cake must generally be free from or originate from areas that are free from certain plant viruses and disease and be fumigated against quarantined pests. Made feed and feed ingredients must also originate from areas without recent outbreaks of foot and mouth disease (FMD) or outbreaks of anthrax which can be a challenge but is manageable for commercial exporters with good product traceability.</p>	<p>Frequent and sudden export bans and other trade restrictions on maize and unprocessed soybeans in Malawi and Zambia complicate the trade prospects in this category. Due to structural surpluses of soybean meal and soybean cake, however, these commodities are very unlikely to be subject to export restrictions.</p>

High regional transport costs and unreliable connectivity, especially in sea freight, emerged as significant constraints for enhanced agricultural trade between Mauritius, Seychelles and APEI+ partners for products with low value / volume rates or short shelf life. The importance of connectivity extends beyond the agricultural sector and is also noted, for instance, by Mauritian garment producers who are increasingly setting up facilities for labor intensive manufacturing in neighboring Madagascar. While beyond the focus of this study, a regional analysis of drivers of shipping cost as well as potential for new air links with a view to develop cost-effective private sector driven solutions would be highly desirable and constitutes an urgent priority for the consideration of APEI+ countries. A pipeline regional World Bank project to improve inland and shipping connectivity through the Nacala corridor (linking Zambia and Malawi to the Mozambique port of Nacala) provides an appropriate platform for such activities. Further improvements in trade facilitation within the region could also support reductions in trading costs and times. Some Mauritian importers interviewed for the report emphasized the importance of having trusted (Mauritian) freight forwarders on the ground in producer countries, and further private sector investment in this area could also yield benefits in connectivity.

In the medium term, regional coordination on SPS issues could help unlock agricultural trade potential if combined with measure to support business-to-business linkages. This would require a combination of capacity building among producers, and information exchange between plant protection and veterinary agencies in APEI+ countries. As a first step, product notes prepared in the context of this project contain detailed information on SPS requirements in the Mauritian market for the consideration of APEI+ producers. Information exchange between veterinary and plant protection offices in Mauritius, Seychelles, and APEI+ producer countries should be initiated for priority commodities. These include high value seafood and honey on the veterinary side and pulses, groundnuts, chili peppers, tea, and fresh fruits and vegetables on the plant side. The Mauritius Plant Protection office typically engages with counterparts on the mainland upon the specific request of a potential importer for a specific product. By identifying priority commodities and proactively facilitating such a dialogue, trade potential in these commodities could be unlocked by reducing the upfront costs of market entry for producers from APEI+ countries who might otherwise be deterred by relatively small market size.

While there are technical solutions to manage aflatoxin risks, what is needed most are clear market signals to reward investments up and down the value chain in improved on-farm practices and post-harvest handling. Emerging contract farming arrangements for export groundnuts in Zambia provide one model for transmitting these signals. New contract farming arrangements between buyers in the island nations and large exporters such as ETG, MozGrain, Farmers World, NASFAM, and others with detailed specifications for aflatoxin limits would be a good way to promote the expansion of these agreements. Dialogue on these lines including cooperation on risk assessments for a list of priority commodities identified by private investors, therefore, would be a good area for continued cooperation through the APEI framework.

Dialogue between APEI+ countries on regional seed trade would also be very helpful. Timely access to the right varieties of seed is especially important to unlocking the potential for trade of pulses, not only between APEI countries but with other world buyers. All APEI+ countries are party to the SADC Regional Seed Agreement and all APEI+ countries except for Mozambique are party to the nearly identical COMESA Regional Seed Agreement. Both agreements aim to speed the procedures for new variety acceptance and to improve confidence in seed certification. While progress is being made at the SADC and COMESA levels in implementing these agreements, overall progress across these regional communities has been slow. Accelerating the pace of regional integration is why APEI countries came together in the first place and

closer cooperation on seed trade would be a practical and highly beneficial area where this agenda could be taken forward.

The risk of export bans for maize and other food staples was frequently cited by importers and exporters as a constraint to increasing intra-APEI+ agriculture trade opportunities. While African governments have made many pronouncements on the importance of open borders for food staples, export bans and other policies that severely limit food staple exports persist particularly in Zambia and Malawi. Financial instruments could be developed to insure against the risk of export bans, but a monetary settlement would be of limited benefit to importers who need the commodity to keep their livestock alive. Government-to-government commitments can be of further assistance but may still not a strong enough basis for private trade linkages to develop. For these reasons, the best potential for increased trade of staple commodities likely revolve around non-GMO soybean cake and soybean meal for which Malawi and Zambia are in heavy surplus and actively looking to promote exports.

By making market information available to potential exporters and promoting business-to-business (B2B) linkages, upfront cost for market entry could be further reduced. This would also alleviate the reluctance of APEI+ traders to engage with Mauritius and Seychelles despite their relatively small market size. Detailed market information, including contacts of potential buyers in Mauritius and Seychelles, has therefore been compiled for this report and will be made available to the relevant business communities in APEI+ countries. Regional cooperation in supporting B2B matchmaking by export promotion agencies, chambers of commerce and other entities through trade missions and other types of dialogue could provide further support.

Knowledge gaps and directions for future research

While this report focuses on products with established trade potential, future investment in agribusiness may lead to new sources of export supply from mainland countries if investment constraints are unlocked. Agriculture trade opportunities are dynamic and can change quickly because of seasonal weather patterns or more slowly through public and private investment in smallholder outgrower programs, regional transport corridors, SPS capacity, seed supply, and/or simply because of building awareness of new trade opportunities among private investors. A more detailed assessment of emerging production capacity in producer countries could help identify future opportunities that have not yet translated into significant exports but exhibit growth potential.

The report has demonstrated the importance of granular sector level information in assessing regional agriculture trade potential. Such information is not widely available in the sub-region. While the analytical focus was on opportunities for increased exports from the mainland APEI countries and Madagascar to Mauritius and Seychelles, the data also pointed to several opportunities for increased trade between the APEI countries and with Zimbabwe, South Africa, Tanzania, and others that should be explored. A similar analytical approach could thus be extended to cover trade opportunities between all APEI+ members, or even beyond in the broader context of regional trade blocks such as SADC and COMESA.

Further opportunities for regional trade may also derive from regional value chains for processing of agricultural products. Thanks to its favorable business climate and skilled workforce, Mauritius is well positioned to develop capital-intensive processing industries that could add value to agricultural production from the APEI+ region before exporting to the African and world markets. A more in-depth study of potential and opportunities in this field would add significant value to the findings of the current report.

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1. Introduction

1.1. Background

1. **Mauritius, Seychelles, Malawi, Mozambique, and Zambia came together in 2012 to deepen their trade integration through an initiative known as the Accelerated Program for Economic Integration (APEI).** Deeper regional integration is a key policy objective for many countries in Africa with recognized potential to contribute to food security, generate inclusive growth, and reduce poverty.² The APEI has been supported by the World Bank in various ways, including through a Development Policy Operation (DPO) in 2016 that provided budget support to Mauritius and Seychelles in response to policy changes directly aimed at three pillars of the APEI program: eliminate barriers to trade in goods; promote trade in services; and improve trade facilitation. Malawi, Mozambique, and Zambia participated in preparation of the DPO but were not able to conclude the operation due to problems with public debt and other macroeconomic risks.

2. **At a high-level meeting in October 2017 around the World Bank/IMF Annual Meetings, APEI members reaffirmed their commitment to working together to achieve their shared regional integration objectives.** Given that only two countries were able to conclude the regional DPO and ongoing macroeconomic risks in mainland countries, however, APEI members also called on the World Bank for very practical types of assistance focused on helping new trade and business linkages to emerge. Madagascar attended the October 2017 meeting and expressed its own commitment to regional integration objectives and interest in joining the APEI group of countries.

3. **In these discussions, support for increased agriculture trade between the mainland countries and island nations was identified by APEI+ countries (current members + Madagascar) as a specific and highly relevant area where tangible benefits from regional integration could be realized.** Mauritius and Seychelles are both dependent on imported food and agriculture raw materials that are grown in abundance in other APEI countries. If the impediments to procurement of such products from within the region could be identified and addressed, it is possible that regional suppliers would be competitive with more distant global suppliers. This would open new opportunities, generating jobs, incomes, and inclusive growth in the producing countries, and help reduce food prices and input costs in the consuming countries.

1.2. Objectives

4. **To better understand the opportunities for increased agriculture trade between APEI+ countries this study addresses two interrelated questions.**

- (i) What is the potential for increased agriculture imports by Mauritius and Seychelles from other APEI+ countries?
- (ii) What is holding back this potential, and to what extent and how can such constraints be addressed to unlock regional agricultural trade?

1.3. Analytical approach

5. **For this analysis of trade potential, Mauritius and Seychelles are treated as importer nations while the mainland APEI countries and Madagascar are treated as exporters.** As small island nations, both Mauritius and Seychelles have limited potential in crop production and rely heavily on food imports

² World Bank (2012, 2012a).

that could, in principle, be met by mainland APEI+ countries where land is not such a constraint. The island nations do, of course, have their own agriculture sectors that are important for many reasons. Apart from animal feed made in Mauritius of imported ingredients that is exported to Seychelles and Madagascar, however, the main markets for food products from Mauritius (mostly sugar and fish) and Seychelles (fish) are well developed and outside the APEI+ region so are not a focus of this study. Similarly, there are already well-established areas of agriculture trade between Zambia, Malawi, and Mozambique that are not covered in detail here.

6. **The first step of analysis was a detailed review of UN COMTRADE trade data to identify products with intra-regional trade potential.** Such products are defined as agricultural commodities (HS chapter 1-24 & 52) that are exported by APEI+ countries and imported by Mauritius and Seychelles. Untapped potential is identified where such potential does not translate into actual trade flows. Specifically, trade potential of a given product is defined as the minimum between global exports by APEI+ partners and global imports by Mauritius and Seychelles. This is equivalent of trade that could take place in a hypothetical situation where Mauritius and Seychelles source all their imports from the mainland countries up to their supply potential. Untapped potential is the trade potential less existing imports by Mauritius and Seychelles from APEI+ countries. From this analysis, a master list was established of all products (at HS6 digit level of detail) with a trade potential upwards of US\$100,000 per year (Annex 1). An analysis of the list is presented in the first section of Chapter 2.

7. **Parallel consultations with agribusiness firms, exporter associations, sanitary and phytosanitary officials, logistics companies, and others throughout the APEI+ region established detailed information on market conditions and binding constraints.** A first round of consultations in Mauritius and Seychelles to identify broad areas of trade potential and what would be required for APEI+ exporters to compete was undertaken in February and March 2018. This was followed in April and May 2018 by consultations in each of the mainland countries and Madagascar that focused on understanding the supply potential, current export relations, and interests in developing or expanding trade relations with Mauritius and Seychelles. The country specific findings from these consultations are presented in Annex 2. Cross-cutting issues are extracted and summarized in the second half of Chapter 2.

8. **In a second stage, the research identified commodity groups where existing constraints are less binding and where spreading market information to interested firms has potential to create new trade opportunities.** From the analysis presented in Chapter 2, SPS issues and transport connectivity emerged as the most important cross-cutting constraints to APEI+ regional trade. Therefore, preference was given to dry and/or processed commodities including products from suppliers with demonstrated capacity to meet EU or other advanced market food safety requirements. Regarding connectivity, preference was given to commodities that can be shipped using low backload rates from inland locations and are high enough in value to compensate for higher freight cost within the region. Where relevant, trade preferences resulting from APEI+ countries' membership in COMESA and SADC were also considered. A further refinement was to focus on commodities with high development potential for smallholders. Well established commodities that are already traded in large quantities within the region were not selected for further coverage as the focus is on providing market information on new opportunities.

9. **For each priority commodity and commodity group the report provides a detailed discussion of trade opportunities and market trends.** This information is intended both to inform regional policy discussion about measures to realize agricultural trade potential, and to make private sector players aware of opportunities for trade and investment in these sectors. This information is presented in Chapter

3. The latter is further supported through the development of detailed product notes, annexed to this report, for dissemination to producers in APEI+ countries.

10. **Unless specified otherwise, all trade values expressed in this report are annual average US\$ values for the period 2012-2017.** Significantly, UN COMTRADE data do not capture small-scale cross border trade data that are often very important in the African context particularly for agriculture. At some land borders, unrecorded cross-border trade can rival or even surpass recorded formal transactions. Thus, while information on trade between the mainland and island countries can be expected to be accurate, figures on intra-mainland APEI country trade may be understated. The report takes a broad definition of agriculture products to include raw agriculture commodities, but also processed food products, seafood, as well as cotton and cotton products (HS chapter 52). For convenience, these are referred to as agriculture products throughout the report.

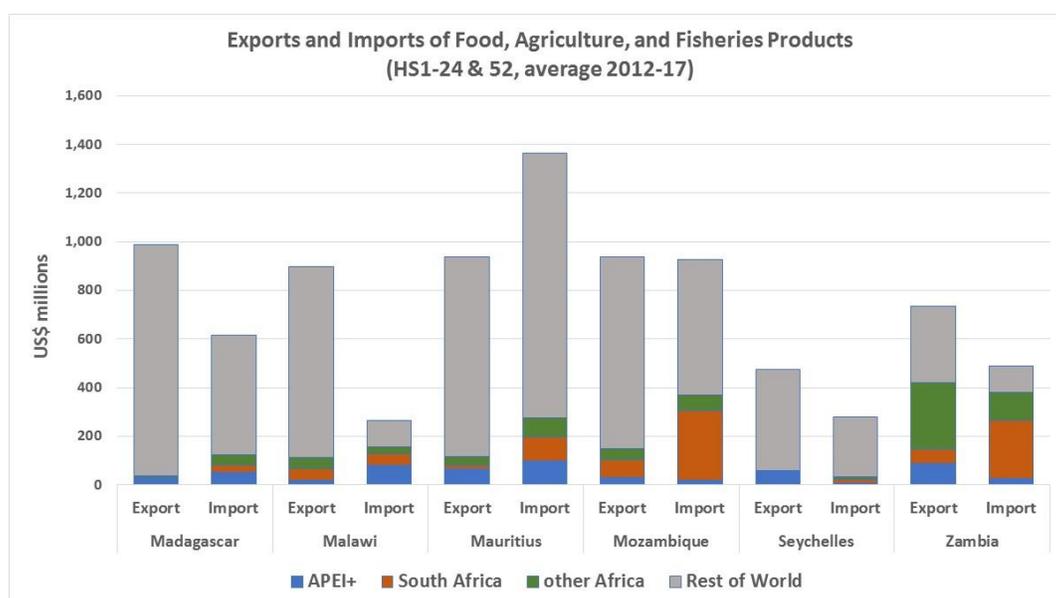
11. **This report is presented in four chapters.** Following the current introduction, Chapter 2 looks at agriculture trade potential, market conditions, and market constraints from a broad perspective. Chapter 3 looks in detail at the trade prospects for a shortlist of selected commodities and commodity groups. The selected commodity groups are (i) stock feed and stock feed ingredients; (ii) pulses; (iii) high value seafood; (iv) nuts and edible seeds; and (v) other high value products. The main text concludes in Chapter 4 with a summary of crosscutting conclusions. Detailed background on agriculture production trends, current trade patterns, agri-processing, and other factors that underpin the opportunities for regional trade is provided in Annex 2 for each the six APEI+ countries.

2. Agriculture Trade Potential, Market Conditions and Constraints

2.1. APEI+ agriculture trade potential

12. **The APEI+ region is a net exporter of agriculture products, but only a small fraction is traded regionally.** Total agriculture exports averaged US\$5 billion per year over the period 2012-17. Among the largest commodity groups were exports of tobacco from Malawi (US\$598 million), Mozambique (US\$293 million) and Zambia (US\$255 million); tea and coffee from Madagascar (US\$584 million); fish and fish products from Seychelles (US\$459 million) and Mauritius (US\$409 million); and sugar from Mauritius (US\$333 million), Mozambique (US\$133 million) and Zambia (US\$74 million). Imports of agriculture products averaged US\$3.6 billion per year over the same period, with cereals, fish, and animal products accounting for the largest shares. However, only US\$290 million is traded among the APEI+ group of countries, and most of this is accounted for by well-established regional value chains related to fish products (US\$63 million), tobacco (US\$52 million), and cotton / textiles (US\$45 million).

Chart 3: APEI+ Agri-Food Imports and Exports, 2012-2017 (US\$ millions)



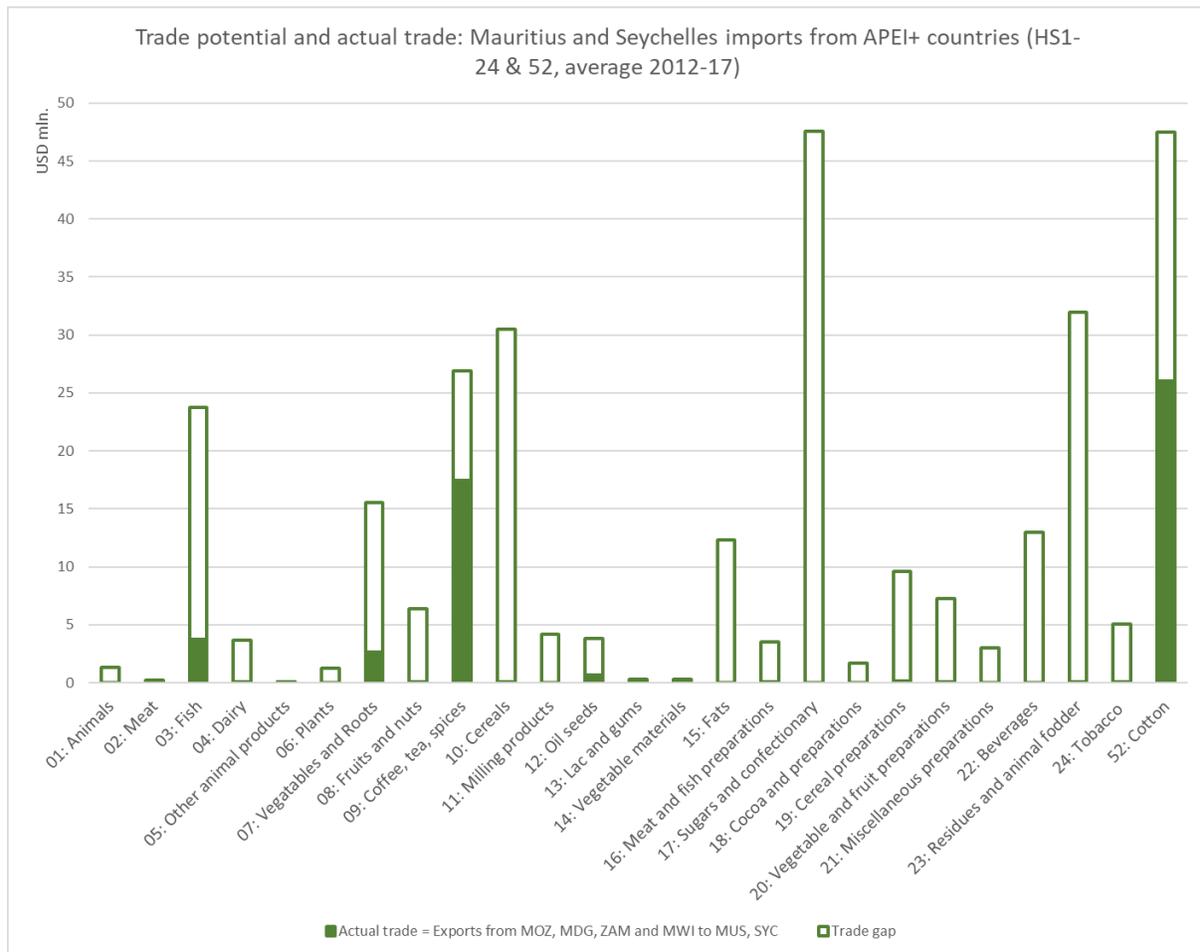
Source: UN COMTRADE data (annual average values, 2012-17).

13. **Despite large volumes at the aggregate level, trade potential for Mauritius and Seychelles to import from mainland APEI+ countries is only about US\$300 million, US\$250 million of which remains untapped.** Mauritius imports around US\$1.2 billion in agriculture products per year and Seychelles US\$266 million. However, many of the products imported are not supplied by APEI+ countries. As shown in Chart 4, the total trade potential for agriculture imports from APEI+ countries is around US\$300 million per year, out of which only US\$50 million is currently realized. These figures are based on a calculation at the detailed (HS 6 digit) product level comparing global imports of a given product by Mauritius and Seychelles with global exports by Zambia, Malawi, Madagascar, and Mozambique. Trade potential is defined as the minimum of the two values or, in other words, a hypothetical situation where Mauritius and Seychelles would source all their imports from APEI+ countries up to the point where their export potential is exhausted.

14. **Some of the largest trade potential is in products that are either already well established or subject to declining trends.** Large potential for sugar imports of US\$47 million is linked to Mauritian firms

importing sugar from the world market for industrial use while Mauritian sugar is being exported to the world market. This situation is a result of sugar sector subsidies and has recently been in flux with an unclear future trajectory as discussed further in the background section on Mauritius (Box 1 in Annex 2). The second largest category, (HS52: 'Cotton'), is already well established with significant trade between Mauritius and Madagascar and is thus not covered further in this report. Most intra-APEI trade potential in category 09 ('Coffee, tea and spices') is in vanilla, which is traded from Madagascar to Mauritius in large quantities. However, untapped trade potential in categories such as 23 ('Residues and animal fodder'), 03 ('Seafood'), 07 ('Vegetables'), 10 ('Cereals') is also sizeable and will be further discussed in the following sections of the report. The master list (Annex 1) also shows potential in specific products such as chilies or honey that are scattered across smaller categories.

Chart 4: APEI+ Indicative Trade Potential



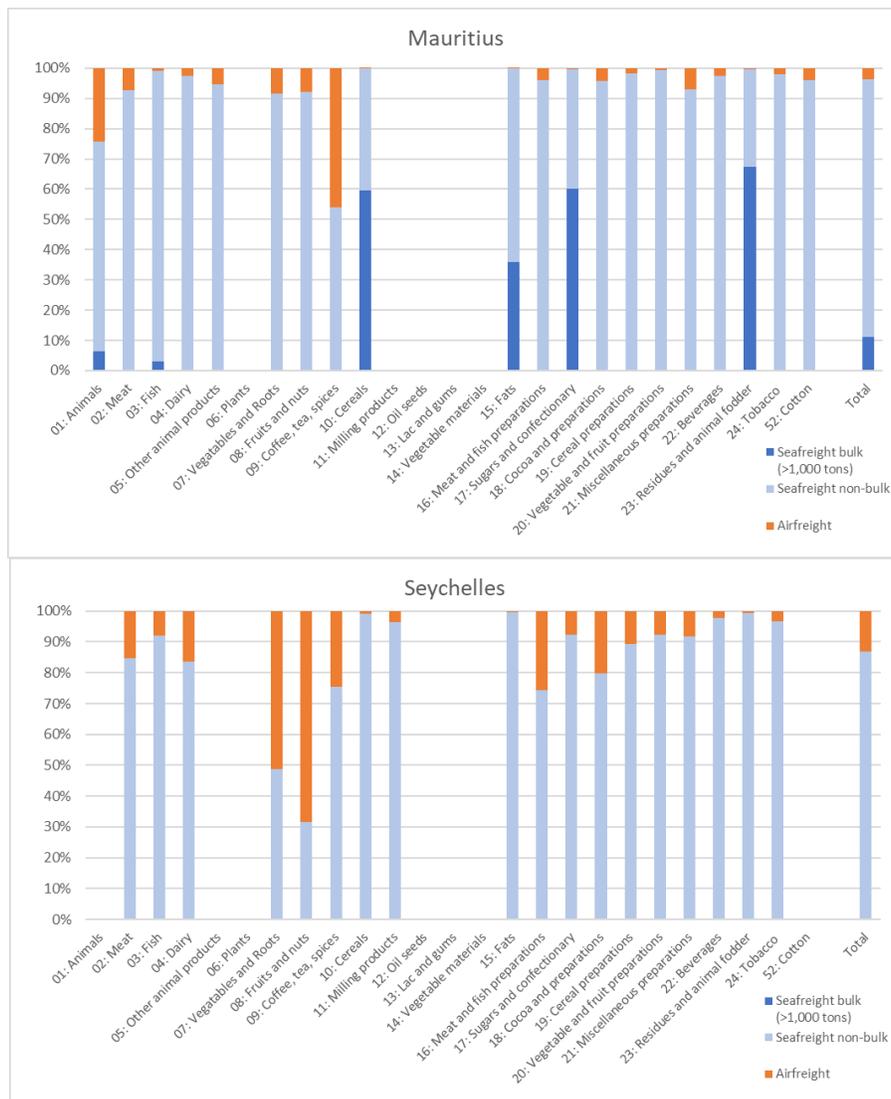
Source: Authors' calculation based on data from UN COMTRADE (annual average values, 2012-17).

2.2. Crosscutting market conditions and constraints

2.2.1. Freight connectivity

15. **Sea freight is the dominant mode of transportation for Mauritius’ and Seychelles’ agricultural trade.** On average, 96 percent of Mauritius’ and 87 percent of Seychelles’ agricultural imports enter by sea.³ For Mauritius, the only notable exceptions are for imports of live animals (mostly live chicks for breeding purposes) and in the product category ‘Coffee, tea and spices’ (mostly vanilla from Madagascar) where air freight accounts for 24 and 46 percent respectively. In the case of Seychelles, air transport is slightly more common, including for fresh vegetables (51 percent) and fruits (68 percent).

Chart 5: Imports of agricultural products by mode of transport and product group



Source: Authors’ calculation based on data from 2012-17 (Mauritius) and 2014-17 (Seychelles) from the two countries’ respective customs authorities. Any shipment > 1,000 tons is considered bulk. Very small product categories (<1 percent of total imports) are omitted for visual clarity.

³ Authors’ calculation based on data from 2012-17 (Mauritius) and 2014-17 (Seychelles) from the two countries’ respective customs authorities.

16. **Bulk cargo plays an important role for some commodity groups in Mauritius, but not in Seychelles.** Large quantities of imports in the categories 'Residues and animal feed' (68 percent, mostly oil-cake), sugar (60 percent) and cereals (60 percent, mostly wheat, maize, and rice) are imported in bulk. With bulk shipping rates at an all-time low, the ability to ship in bulk provides significant cost savings to large importers. The inability to supply mass quantities and/or the absence of appropriate bulk handling facilities can effectively preclude potential suppliers from large segments of the market. As shown in Table 7, Mauritius barely imports in bulk from APEI countries (the 1.4% shown is for large shipments of fish from Seychelles). With grains and oil-cake the commodities are loaded loose in the cargo hold of specialized vessels. Due to its small market size, Seychelles does not have dry bulk handling facilities and all agricultural imports by sea are made in smaller consignments, mostly in containers.

Table 7: Imports of agricultural products by mode of transport and origin

	Mauritius			Seychelles		
	Airfreight	Seafreight bulk (>1,000 tons)	Seafreight non-bulk	Airfreight	Seafreight bulk (>1,000 tons)	Seafreight non-bulk
APEI	11.2%	1.4%	87.4%	26.3%	0.0%	73.7%
Other Africa	5.0%	0.5%	94.5%	3.1%	0.0%	96.9%
RoW	3.0%	14.0%	83.0%	11.1%	0.0%	88.9%
Total	3.9%	11.0%	85.1%	13.5%	0.0%	86.5%

Source: Authors' calculation based on data from both country's customs authorities.

17. **Potential buyers in Mauritius frequently cited poor shipping connectivity to APEI+ partners as a major constraint to increased intra-regional trade.** While there are some regional shipping routes as shown in Annex 3, importers consistently said that services are unreliable and expensive. Issue with unpredictable changes and cancellation in port calls due to inclement weather and port congestion in mainland countries and Madagascar were also cited as major challenges.

18. **For Seychelles, shipping connectivity is an even bigger constraint.** There are very few sea routes between mainland Africa and the Port of Victoria. Instead, most containerized goods from all parts of the world pass through Salalah or Jebel Ali where they are offloaded from large, mainline vessels to smaller feeder vessels that serve ports in the Indian Ocean. Therefore, since most freight to Seychelles is transhipped through the same assembly points, it is often easier and more cost effective for well-connected European and Asian countries to supply products to Seychelles than geographically closer-by African countries. For all routes, transit times were said to be long and delivery schedules unreliable; it is not unheard of for vessels to cancel expected stops in Seychelles at the last moment due to shortage of cargo and/or because of bad weather. Port congestion in Seychelles is also a problem with importers complaining that cargo vessels are made to wait at anchor when cruise ships are in port due to a shortage of dock space.

19. **Regional shipping costs are often higher than connections with key ports in Europe, East Asia, and South America.** As shown in Table 8, indicative cost per ton of sea freight to Port Louis and Victoria from main ports in Madagascar, Mozambique, and South Africa ranges between US\$72 and 115. Comparable rates for shipment from Rotterdam, Santos, Singapore, or Shanghai are up to 30 percent cheaper. Comparable rates from India and Southeast Asia to Mauritius and Seychelles are higher than from the east coast of Africa and Madagascar, potentially providing APEI+ exporters an advantage. In practice, however, shippers say that services with Asia are more reliable and regular than with Africa.

Table 8: Indicative costs of containerized freight in US\$ from various ports to Mauritius and Seychelles

		20' Container		Per ton	
		Low	High	Low	High
To Port Louis from...					
Salalah	Arabian Gulf	1,741	3,148	79.1	143.1
Rotterdam	Northern Europe	1,050	2,093	47.7	95.1
Constanta	Black Sea	2,684	4,107	122.0	186.7
Chennai	South Asia	2,228	2,655	101.3	120.7
Port Klang	SE Asia	2,490	3,143	113.2	142.9
Santos	South America	1,040	2,024	47.3	92.0
Singapore	South East Asia	806	1,400	36.6	63.6
Shanghai	East Asia	867	1,372	39.4	62.4
Toamasina	Madagascar	1,578	2,508	71.7	114.0
Nacala	Northern Mozambique	1,578	2,508	71.7	114.0
Beira	Central Mozambique	1,578	2,508	71.7	114.0
Maputo	Southern Mozambique	1,588	2,550	72.2	115.9
Durban	South Africa	1,578	2,508	71.7	114.0
Victoria	Seychelles	1,578	2,508	71.7	114.0
To Port Victoria from...					
Salalah	Arabian Gulf	1,741	3,148	79.1	143.1
Rotterdam	Northern Europe	1,050	2,093	47.7	95.1
Constanta	Black Sea	2,228	2,655	101.3	120.7
Chennai	South Asia	2,228	2,655	101.3	120.7
Port Klang	SE Asia	2,490	3,143	113.2	142.9
Santos	South America	1,040	2,024	47.3	92.0
Singapore	South East Asia	1,112	1,558	50.5	70.8
Shanghai	East Asia	1,112	1,558	50.5	70.8
Toamasina	Madagascar	1,578	2,508	71.7	114.0
Nacala	Northern Mozambique	1,578	2,508	71.7	114.0
Beira	Central Mozambique	1,578	2,508	71.7	114.0
Maputo	Southern Mozambique	1,578	2,508	71.7	114.0
Durban	South Africa	1,578	2,508	71.7	114.0
Port Louis	Mauritius	1,578	2,508	71.7	114.0

Source: <https://www.freightos.com/freight-resources/freight-rate-calculator-free-tool/>

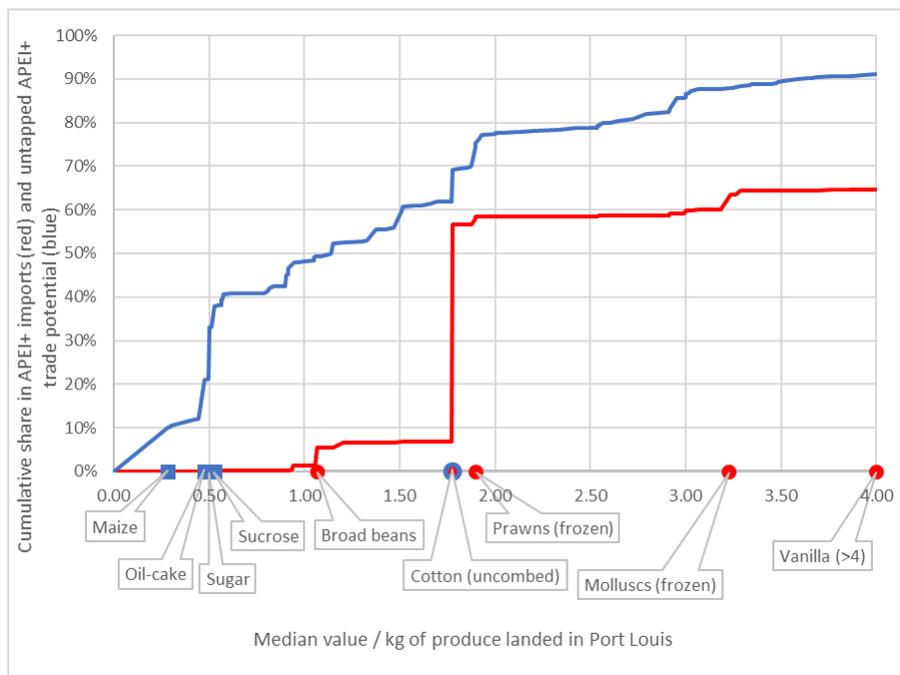
20. **There is a further widespread perception in the island nations that African inland freight is prohibitively expensive and unreliable.** This was also cited by Mauritian firms as a reason for preferring to buy stock feed ingredients and other commodities from Argentina, India, and elsewhere with good rail and port infrastructure including bulk handling facilities. While inland freight in Africa can be very expensive, heavily discounted backload rates are widely available and help Malawi and Zambia compete in regional and global markets. Compared with inbound rates from the ports, backload prices to the ports can be 60 to 70 percent less. Packing in loose containers on these routes is possible, but the cheapest backload rates are for commodities sent break bulk on flatbed trucks which requires bagging. This is the most widely available form of freight and saves on container fees for the overland portion of the journey.

21. **Groupage of freight is common, i.e. putting more than one company's products in a shared container.** This helps with small shipments but adds to the time and delay for packaging. Many companies interviewed said that grouped containers tend to be the first to get left behind in case of space issues on the vessel.

22. **Mainland APEI countries are well connected to closer-by African nations with strong import demand including Zimbabwe, the Democratic Republic of Congo (DRC), Botswana, and others.** This further reduces operators' incentives to look for more difficult export markets in the island nations within the region.

23. **Because of high freight cost, APEI+ exporters are disadvantaged in competing with international producers on high weight / low value products.** As shown below in Chart 6, there are virtually no imports from APEI+ countries in products with a unit value (US\$/kg cif upon arrival in Port Louis) below 0.75. On the other hand, over 40 percent of the observed trade gap⁴ between Mauritius and Seychelles and APEI+ countries is in products in this category, which includes maize, oil-cake, and sugar.

Chart 6: APEI+ Trade and Trade Gap vs. Unit Values of Imports



Source: Authors' calculation based on data from COMTRADE and Mauritius Revenue Authority.

Note: Blue squares show unit values for the five products with largest untapped trade potential, while red dots show the same for the five products with largest current imports from APEI+ countries. Uncombed cotton falls into both categories (large untapped potential and large existing imports).

2.2.2. Sanitary and phytosanitary requirements

24. **A second important set of trade constraints revolves around sanitary and phytosanitary (SPS) concerns.** SPS risks are especially relevant to island countries that are naturally isolated from animal and plant diseases in other countries. The Seychelles National Biosecurity Agency (NBA), the Mauritius National Plant Protection Office, and Mauritius Veterinary Services Division, each stressed the critical

⁴ Products imported by Mauritius and Seychelles and exported by APEI+ partners, as explained earlier in this report in the discussion of Chart 4.

importance of protecting their country from new plant and animal diseases that can be spread through trade. Food safety is another important aspect of international trade with importing countries having a legitimate interest in protecting consumers from food hazards.

25. **As in any country, therefore, for a new plant or animal product to gain admissibility to Mauritius or the Seychelles, national authorities must perform a full assessment of the SPS risks associated with that product.** These assessments involve an analysis of pest and disease conditions in the exporting country and of the production, packaging, and handling systems followed by the exporting firm. Depending on the outcome of the risk assessment, mitigations to eliminate or reduce identified risks to an acceptable level must then be established. Such mitigations often involve fumigation requirements for grains and cold treatments for fresh fruit. Preparing the initial risk assessment can easily take several months or more. Dry commodities and processed or frozen foods are generally regarded by SPS authorities as having lower SPS risk compared with fresh produce that can easily carry insects and disease. Accordingly, new risk assessments for dry and processed products are usually quicker and easier to complete.

26. **Very few risk assessments have been done between the island nations and mainland APEI countries.** By contrast, risk assessments by Mauritius in Madagascar in the early 2000s opened markets for a wide range of commodities. Agriculture exports from Madagascar to Mauritius are now worth around US\$30 million annually. Cooperation on future risk assessments between APEI+ countries, including joint-assessments and data sharing could be an excellent way to open new markets and accelerate regional integration.

27. **Once the SPS risk assessment is complete, the importing country must also have confidence in the integrity and capacity of the exporter's SPS certification capacity.** Physical inspections on arrival help prevent the entry of quarantine pests and disease but can only do so much and the dependability of SPS systems in mainland countries and Madagascar was identified as major concern, especially by authorities in Seychelles. According to the NBA, information exchange between the designated national enquiry points in African countries has been slow to non-existent. Seychellois officials also expressed concerns that exporting countries may not notify partner states of pest or disease outbreaks as required by their WTO obligations. Regional dialogue between APEI+ partners, therefore, can also help on this front not only by raising understanding of each other's strengths and limitations but also in building personal connections needed to avoid problems and address disputes when they arise.

28. **While it clear that national SPS offices in mainland countries and Madagascar face many challenges, these countries do successfully export many agriculture commodities on the world market.** Bearing in mind the island nations have unique concerns, APEI+ countries do export many high-risk products to Europe, Asia, and other parts of the world with demanding SPS requirements. Considerable amounts of scientific research and established mitigations, therefore, already exists that could help in opening new trade relations with Mauritius and Seychelles. Moreover, many large and medium size exporters in Zambia, Malawi, Mozambique, and Madagascar already have, or are on the way to having, Hazard Analysis and Critical Control Point (HACCP), GlobalGAP, ISO, and/or other international accreditations designed to ensure the integrity of their supply chain. These private meta-systems are not a substitute for official SPS certification but do serve to raise the confidence of importers through detailed systems for traceability and risk mitigation.

2.2.3. Business contacts and market size

29. **Private buyers in island nations consistently said they are willing to consider purchasing from APEI+ countries if the products are competitive on price, quality, timeliness of supply.** While each of these areas can be challenging, APEI+ countries do export many agriculture commodities on the global market at internationally competitive prices. Challenges with connectivity and SPS concerns exist but are not insurmountable and sometimes mainly require better understanding and contacts between buyers and sellers to address.

30. **Most business people met during the country visits, in fact, said they had never considered the possibility of agriculture trade between APEI+ countries and Mauritius or Seychelles.** Because of closer proximity, Mauritian buyers have better understanding of trade and investment opportunities with Madagascar than other APEI countries. Where Mauritian investment groups have business operations in the mainland countries, these mostly focus on serving local and regional markets rather than on exporting to Mauritius, Seychelles, or other Indian Ocean countries. Likewise, many potential exporters in Africa pointed to the problem with the small market size of Mauritius and Seychelles. Large firms are busy supplying other markets and some small companies looking to expand said it was more important to use their limited resources to target larger markets with greater growth potential. Several past exporters of potatoes and onions to Mauritius from Madagascar also said it was not worth their trouble to compete for tenders put out by the Mauritian Agriculture Marketing Board (AMB) and others when it is far easier and more lucrative to sell domestically.

31. **While these practical constraints are very real and have serious bearing on trade potential, many buyers and sellers met for this study expressed a strong interest in learning more about regional opportunities.** At first, many people met for this study were skeptical and even surprised by the topic of this study but expressed a genuine desire to learn more. This report is one step in that direction.

2.2.4. Unpredictable business environment

32. **Export restrictions are a real and serious threat to the potential development of APEI+ trade linkages.** As described in the country background Annex 2, Malawi and Zambia both have long and complicated histories of export restrictions and outright trade bans on maize, soybeans, and other staple foods. These restrictions are difficult to predict and are subject to frequent change. Exceptions are sometimes made for government to government trade deals, and occasionally for pre-negotiated commercial contracts, but the risk of export restrictions still hangs heavy over the prospects for increased regional trade and agriculture growth and expansion more generally. There is a considerable body of evidence to show how these policies lead to large price swings and deter much needed private investment by large and small traders and farmers alike (see, for example, World Bank, 2012, 2014, 2014a, 2014b, and IAPRI, 2016).⁵

2.2.5. SADC and COMESA tariff preferences

33. **All APEI+ countries are members of SADC, and all but Mozambique also belong to COMESA, which creates preferential market access opportunities for APEI+ exporters.** Mauritius already has a very open market to the rest of the world, and thus such preferences are generally small and limited to a few

⁵ For instance, IAPRI (2016) explains that despite Zambia having a large maize surplus in 2016 at a time when all other countries in the region were deficit, Zambia instituted a blanket export ban on maize due to fear of domestic shortages and rising prices ahead of the September 2016 general elections. Some exports were allowed that can also be said to have political motivation such as allowing the Zambia Cooperative Federation to export 100,000 tons to Malawi. As a parastatal entity with public debt, FRA has also tended to have easier access to export permits than commercial competitors.

specific products (Table 9). The notable exceptions are in beverages (17 percent, including high tariffs on spirits, but also water and beer) and sugar, where an 80 percent import tariff on certain sugar products for industrial use was introduced in 2018. SADC and COMESA partners are exempt from these tariffs. Seychelles maintains higher levels of tariff protection, including in sectors like Fish (19 percent), Cereal preparations (12 percent), Plants (11 percent), Fruits (10 percent), Vegetables (9 percent) and other miscellaneous preparations (9 percent) such as ice cream and ketchup. Very high tariffs on alcoholic beverages and tobacco products are used as a means of consumer protection and are therefore exempt from Seychelles' preferential market access under SADC and COMESA. It is also noteworthy that both Mauritius and Seychelles are party to an interim Economic Partnership Agreement with the EU that provides preferential market access for certain products for EU firms. Given the large market size of the EU in both countries, this effectively erodes some of the preferential margin for COMESA and SADC members.

Table 9: Unweighted average tariffs on agricultural imports

	Mauritius					Seychelles				
	MFN	EU	SADC	COMESA	MFN	EU	SADC	COMESA		
01: Animals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
02: Meat	0.0	0.0	0.0	0.0	2.8	2.5	2.5	2.5		
Seafood	0.0	0.0	0.0	0.0	19.9	4.1	2.6	0.0		
04: Dairy & Honey	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0		
05: Other animal products	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0		
06: Plants	0.0	0.0	0.0	0.0	11.4	6.9	3.3	3.3		
07: Vegetables and Roots	0.0	0.0	0.0	0.0	9.3	0.7	0.0	0.0		
08: Fruits and nuts	0.0	0.0	0.0	0.0	9.7	2.2	2.2	0.0		
09: Coffee, tea, spices	5.1	1.4	0.0	0.0	6.4	3.7	2.9	2.9		
10: Cereals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
11: Milling products	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0		
12: Oil seeds	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0		
13: Lac and gums	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
14: Vegetable materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
15: Fats	2.4	1.8	0.6	0.0	0.0	0.0	0.0	0.0		
16: Meat and fish preparations	0.0	0.0	0.0	0.0	5.0	3.0	0.0	0.0		
17: Sugars and confectionary	16.6	16.6	0.0	0.0	0.0	0.0	0.0	0.0		
18: Cocoa and preparations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
19: Cereal preparations	0.0	0.0	0.0	0.0	11.6	4.3	0.0	0.0		
20: Vegetable and fruit preparations	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2		
21: Miscellaneous preparations	0.0	0.0	0.0	0.0	9.0	5.6	2.1	1.2		
22: Beverages	16.6	13.7	0.0	0.0	22.2	22.2	22.2	21.8		
23: Residues and animal fodder	1.6	1.6	0.0	0.0	0.9	0.5	0.5	0.0		
24: Tobacco	3.5	0.0	0.0	0.0	114.2	114.2	114.2	114.2		
52: Cotton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Source: Authors' calculation based on data from UNCTAS TRAINS (for Mauritius) and WTO IDB (for Seychelles) databases.

Mauritius also provides preferential market access to IOC member countries, but these rarely exceed COMESA and SADC preferences and are not analyzed separately. Mauritius also maintains free trade agreements with Pakistan and Turkey and is in the process of negotiating with India and China, which would further erode regional trade preferences once in force.

34. Regional trade preferences create pockets of opportunity for APEI+ producers to export to Mauritius in specific products, but overall, the effect is small except for sugar. Beyond the sugar sector, where the situation is highly volatile as discussed in the Mauritius background section, valuable preferences for APEI+ countries exist for individual products in 'Beverages', 'Milling products' and 'Coffee, Tea, Spices' as well as 'Animal Food' (these products are discussed in more detail in the following section and identified in the master list in Annex 1).

35. **Seychelles offers relevant preferential margins for APEI+ exporters across a wider set of products.** These fall into categories such as ‘Fruits and nuts’, ‘Vegetables and Roots’, ‘Plants’, and ‘Miscellaneous preparations’. Preferential margins shown in ‘Seafood’ are misleading in the sense that high imports are driven by fish landed in Seychelles from European vessels that is ultimately re-exported.

Table 10: Value of preferential margin in potential APEI+ imports and total imports

	Mauritius				Seychelles			
	... potential APEI imports		... total imports		... potential APEI imports		... total imports	
	SADC	SADC + COMESA	SADC	SADC + COMESA	SADC	SADC + COMESA	SADC	SADC + COMESA
01: Animals	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
02: Meat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
03: Seafood	0.0%	0.0%	0.0%	0.0%	2.1%	11.6%	2.6%	3.7%
04: Dairy & Honey	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%
05: Other animal products	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
06: Plants	0.0%	0.0%	0.0%	0.0%	5.4%	5.4%	5.8%	5.8%
07: Vegetables and Roots	0.0%	0.0%	0.0%	0.0%	8.4%	8.4%	7.5%	7.5%
08: Fruits and nuts	0.0%	0.0%	0.0%	0.0%	9.8%	10.2%	9.5%	9.6%
09: Coffee, tea, spices	5.0%	5.0%	4.6%	4.6%	1.9%	1.9%	2.3%	2.3%
10: Cereals	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
11: Milling products	7.5%	7.5%	1.7%	1.7%	0.0%	0.0%	0.0%	0.0%
12: Oil seeds	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
13: Lac and gums	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
14: Vegetable materials	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15: Fats	1.0%	1.1%	1.2%	2.9%	0.0%	0.0%	0.0%	0.0%
16: Meat and fish preparations	0.0%	0.0%	0.0%	0.0%	4.5%	4.5%	5.6%	5.6%
17: Sugars and confectionary	44.2%	44.2%	43.7%	43.7%	0.0%	0.0%	0.0%	0.0%
18: Cocoa and preparations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
19: Cereal preparations	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	5.1%	5.1%
20: Vegetable and fruit preparations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
21: Miscellaneous preparations	0.0%	0.0%	0.0%	0.0%	3.3%	6.4%	8.9%	10.7%
22: Beverages	13.0%	13.0%	15.6%	15.6%	0.0%	0.7%	0.0%	0.1%
23: Residues and animal fodder	2.2%	2.2%	3.1%	3.1%	0.0%	0.0%	0.3%	1.4%
24: Tobacco	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
52: Cotton	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Authors’ calculation from UN COMTRADE (import values), UNCTAD TRAINS (Mauritius tariffs), and WTO IDB (Seychelles tariffs). **Notes:** The preferential margin is calculated at the HS 6-digit level as the difference between the MFN tariff rate and either the SADC preferential rate (column SADC) or the minimum of the SADC and COMESA rates (SADC + COMESA). The former is the relevant metric for Mozambique, which is only a member of SADC, while the latter is relevant for all other APEI+ country that belong to both trading blocks. The preferential margin (PM) is adjusted for preference erosion due to preferences granted to the EU using the following formula:

$$PM = MshareEU * (TMFN-TSADC) + (1-MshareEU)*(TEU - TSADC)$$

Where MshareEU is the EU’s share in total imports of the product in question and T stands for the tariff rate applicable to the respective trading partner group identified by the suffix.

The value of the trade potential is calculated and expressed as a share of either the total trade potential for a given product, or total imports thereof. The former metric shows the value of the preference granted for products imported by Mauritius and Seychelles for which APEI+ countries have export capacity, while the latter looks at all imported products regardless of whether APEI+ countries currently export them.

36. **In conclusion, despite their relatively small size overall, trade preferences are important to consider when assessing regional trade opportunities as they might give exporters from in the region a**

competitive boost for specific product. This is considered at the product level in the following sections of the report.

2.3. Priority commodities for further analysis

37. **Most existing APEI+ trade is in commodities with relatively high value / weight (low transport cost) and low SPS risk.** As a result, there is a lot of untapped potential (40 percent) in products with high transport cost, but this is not likely to materialize unless freight costs are brought down significantly. As illustrated in

38. Chart 7, 93 percent of existing APEI+ agricultural trade is in products with relatively high value / weight (low transport cost) and low SPS risk with the remainder – mostly seafood products – in the low transport cost / high SPS risk category. However, low transport cost and SPS risk appear to be a necessary, but insufficient condition for APEI+ trade potential to materialize, as there is also significant untapped trade potential (45 percent) in this category.

Chart 7: Current and untapped APEI+ trade by transport cost and SPS risk

Transport cost	Current APEI+ trade		Untapped APEI+ trade potential	
	SPS risk			
	low	high	low	high
low	92.5%	7.3%	45%	14%
high	0.2%	0.0%	40%	1%

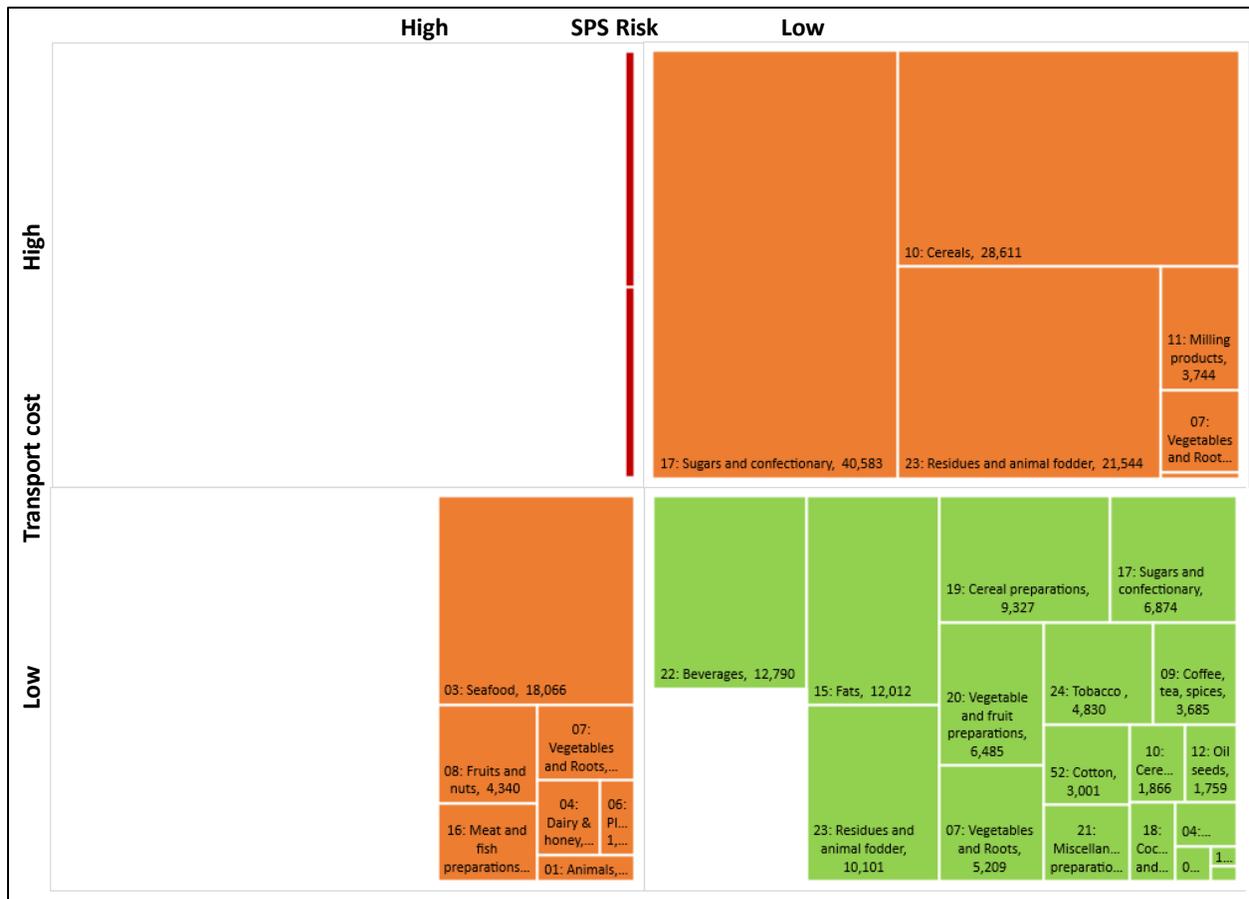
Source: Authors' calculation based on data from COMTRADE and Mauritius Revenue Authority.

Notes: High / low transport costs are products with a median landed cif value in Port Louis of below / above US\$0.75 per kg. Classification of low / high SPS risk is based on the classification developed by Ahmed et al (2017). This classification does not cover HS category 03 (Seafood), which was classified by the authors as high SPS risk.

39. **Based on the above, a selection of commodity groups for further analysis in the next chapter of the report is made.** Selection considers the severity of the respective constraints discussed above for a given commodity group – most importantly transport connectivity and SPS – as well as the interest of stakeholders interviewed for this report. As a key objective of this report is to provide market information on products with existing potential, priority is given to commodity groups that appear feasible under current conditions, i.e. treating the above discussed constraints and market conditions as a given. However, where appropriate within a given commodity group, future potential is also explored should some of these constraints be successfully addressed. Well established commodities such as cotton, tuna and vanilla that are already traded in large quantities within the region are not further analyzed as the focus is on new opportunities for APEI+ trade.

40. **Applying these criteria to the master list of products with established trade potential yields the overview presented in**

41. **Chart 8.** The full list is available is shown in Annex 1. A further refining criterion was to focus on commodities with high development potential for smallholders.

Chart 8: Classification of commodity groups by SPS risk and transport cost

Source: Authors' calculation based on data from COMTRADE and Mauritius Revenue Authority.

Notes: High / low transport costs are products with a median landed cif value in Port Louis of below / above US\$0.75 per kg. Low / high SPS risk is a binary classification developed by Ahmed et al (2017). This classification does not cover HS category 03 (Seafood), which was classified by the authors as high SPS risk. The classification is made at the more detailed HS 6-digit product level, and it is therefore possible for any given HS 2-digit product category to appear in different segments of the graph. Products with significant existing APEI+ trade (>25 percent of total imports) are excluded.

42. **Sugar is the commodity group with the largest untapped trade potential of ~US\$41 million per year but this is unlikely to last.** The recent introduction of an 80 percent tariff on sugar, from which SADC and COMESA partners are exempt, has created some opportunities for regional trade which according to industry experts has yielded some trade with SADC and COMESA partners in recent months. However, sugar imports overall are declining rapidly. As discussed in the background section on Mauritius, these imports to Mauritius, which is a large sugar producer and exporter, are linked to price subsidies, and the Mauritian government is currently considering reforms to this system as these imports create a high fiscal cost. Sugar is therefore not further considered in this report.

43. **Cereals (US\$30 million) and residues for animal fodder (US\$30 million) have large untapped APEI + trade potential, but most of this is unlikely to materialize given its high transport cost.** These commodity groups are analyzed jointly as large shares of cereal imports are linked to the animal feed industry in Mauritius. Higher value-added types of animal feed, which account for roughly one third of total potential, might already be successfully traded in the region, and SADC and COMESA partners benefit

from a 10 percent preferential margin for these products in Mauritius. While trade costs remain a serious problem for almost all cereals and lower value-added residues that are used as inputs by the animal food industry, the report looks at the value chain to analyze its regional trade potential. Smallholder potential for such products could be large if an effective way of bundling can be established.

44. **As the focus of the report is on agriculture in raw or processed form, beverages are not further analyzed.** However, the significant trade potential (US\$13 million) namely in water and beer seems well positioned for future growth given its low SPS risk, less severe transport cost issue, and preferential market access in Mauritius.

45. **Total untapped trade potential for vegetables is US\$12 million but depending on the product, this is distributed across different risk categories in**

46. **Chart 8.** While most fresh vegetables face high SPS risk, certain dried vegetables (mostly garden peas) fall into the category of low value / weight products for which freight costs are likely prohibitive for APEI+ trade at current rates. However, there are several vegetables (~US\$5 million) that have both low SPS risk and higher value / weight. These are mostly dried pulses such as chickpeas, white beans, and lentils. Smallholder potential for these products is large in producer countries. This commodity group was therefore selected for further analysis in this report.

47. **For seafood, SPS risks are high, but successful trade proves that it can be managed.** While the whole of this product category, accounting for US\$18 million in trade potential, exhibits high SPS risk, experience from companies interviewed for this report suggests that such risk can be managed by well-run exporters. The commodity group was therefore selected for further analysis in this report, with a focus on high end seafood in high demand by the tourism industry.

48. **Anecdotal evidence and a product level analysis of the data revealed a few more individual products for further analysis.** These include honey with a trade potential of US\$1.2 million and high value per weight and manageable SPS risk. Dried and ground chilies with a trade potential of US\$ 0.7 million, high value per weight, manageable SPS risk, and a preferential margin of 10 percent for ground produce in Mauritius. Black tea with a 30 percent preferential margin in Mauritius. And table grapes as an example of a fresh fruit where investment in SPS risk management might have high yields in terms of unlocking regional trade.

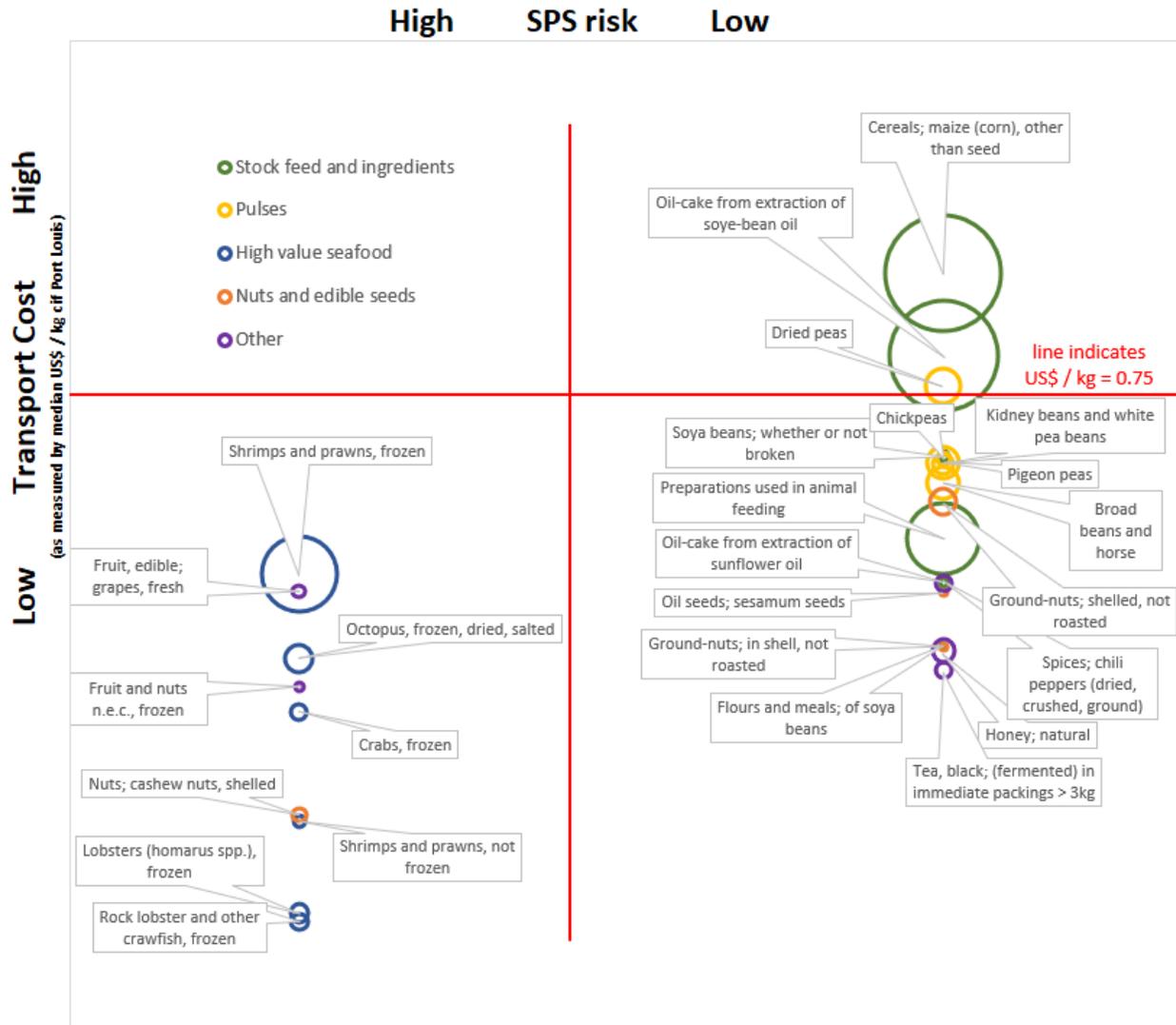
49. **The list of priority commodity groups and commodities selected for detailed treatment is summarized in**

50. **Table 11 and Chart 9.** Table 11 links priority commodities to APEI+ partner countries that export them. Chart 9 places priority commodities along the dimensions of SPS risk and transport cost.

Table 11: List of Priority Commodities by Exporter

	Madagascar	Malawi	Mozambique	Zambia
Stock feed & ingredients				
Made feed				X
Maize				X
Soybeans		X		X
Soybean cake		X		X
Pulses				
Pigeon peas		X	X	
White beans	X	X		
Dry beans and peas	X	X	X	
Lentils		X	X	
Seafood				
Prawns	X		X	
Lobster	X		X	
Crab	X		X	
Octopus	X		X	
Nuts and seeds				
Groundnuts	X	X	X	
Sesame		X	X	
Cashew	X		X	
Other commodities				
Honey				X
Chili peppers/sauce		X	X	
Tea		X	X	
Table grapes				X

Chart 9: Priority Commodities by Transport Cost and SPS Risk



Source: Authors' calculation based on data from COMTRADE and Mauritius Revenue Authority.

Notes: High / low transport costs are products with a median landed cif value in Port Louis of below / above US\$0.75 per kg (presented on the vertical axis in inverted logarithmic scale). Low / high SPS risk is based on a binary classification developed by Ahmed et al (2017). This classification does not cover HS category 03 (Seafood), which was classified by the authors as high SPS risk. Bubble size is proportional to trade potential for a given product.

3. Analysis of commodity groups and individual products

3.1. Stock feed and stock feed ingredients

51. **Within agriculture, the poultry industry has exhibited rapid growth in many southern African and Indian Ocean countries over the last decade.** Feed accounts for 65–70 percent of broiler production costs and the surge in poultry production presents opportunities for industrialization and trade in animal feed products across the region (Samboko, Zulu-Mbata, and Chapato, 2018). Maize and soybeans are the major components in stock feed and are important smallholder crops in Madagascar, Malawi, Mozambique, and Zambia.

52. **As small island nations, both Mauritius and Seychelles are structurally dependent on imported feed and feed ingredients for livestock production.** There is simply not enough land to grow the cereal grains and oilseeds that poultry and other commercially-raised livestock in these countries require. As described in the country background section, there have been several large investments in poultry production in Mauritius that are fueling demand for imported feed ingredients. Mauritius is now also a large exporter of manufactured feed to regional neighbors. Livestock production in Seychelles is much smaller than in Mauritius but has experienced a resurgence to the point where the country is now nearly self-sufficient in eggs and raises around 500,000 broiler chickens annually. In both countries, cattle production and dairying are mainly as “backyard enterprises”. Pig production in the island nations also tends to be small with only a handful of commercial units managing more than 30 breeding sows each.

53. **The formulation of poultry and other types of animal feed is a complex business that requires many ingredients.** Bearing in mind that nutritional requirements vary by type of livestock and age, maize and other cereal grains broadly make up 60-70 percent of the diet of poultry and provide the main source of energy in most animal diets. Wheat and other cereal brans that are less dense and richer in nutrition than grains are another important component of many feeds. Beyond the nutrients that can be supplied by grains and bran alone, commercial poultry require a diet of about 20 percent protein. For some livestock, the protein requirements are even higher. To get this much protein into the diet, high-fat oilseed meals and/or low-fat solvent extracted oilseed cakes must be added to the feed. Additionally, all types of livestock are sensitive to the balance of vitamins, minerals, and amino acids thus calling for the addition for macro- and micro-nutrients to make up for shortfalls and otherwise correct imbalances.

54. **Table 12 looks at the annual average import values of made feed and feed ingredients by Mauritius and Seychelles and export values of these commodities by the mainland APEI countries and Madagascar.** As shown, the total market for feed and feed ingredients in Mauritius and Seychelles is around US\$53 million and US\$4.4 million respectively. Table 12 also shows that mainland APEI+ countries, especially Zambia, are large exporters of these commodities suggesting a potential for trade complementarity. Currently, most imports by Mauritius are from Argentina and other South American countries while, for Seychelles, most imports are from India. Cotton seed cake is an important export of Zambia, Malawi, and Mozambique but is mainly fed to bovine animals (i.e. dairy cows and beef cattle) so is the least imported type of oilseed cake by the island nations. Also, as shown in the table, Seychelles mainly imports higher-fat soybean meal whereas Mauritius imports low-fat soybean cake.

Table 12: Imports and exports of stock feed and stock feed ingredients (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Made feed						
230990 - Preparations used in animal feeding	6,075.4	3,638.6	68.3	2.5	317.5	15,840.1
Whole grains and meal						
100590 - Cereals; maize (corn), other than seed	23,718.5	380.7	452.6	1,980.7	4,398.7	139,062.3
120100 - Soya beans	209.1	96.3	11.7	6,764.5	1,142.5	11,100.6
120810 - Flours and meals; of soya beans	17.5	156.9	0.8	237.5	56.0	11,908.1
Bran						
230210 - Bran of maize (corn)	18.8	0.4	0.2	686.5	1,223.7	7,043.2
230230 - Bran of wheat	0.6	47.0	-	2,647.9	17,112.0	661.6
Oil-cake						
230400 - Oil-cake from extraction of soya-bean oil	22,604.3	0.1	0.1	4,710.8	32.8	16,770.2
230610 - Oil-cake from extraction of cotton seed oils	39.9	0.1	26.8	3,029.2	973.7	4,661.3
230630 - Oil-cake from extraction of sunflower seed oils	229.8	0.0	0.0	100.5	51.3	261.6
TOTAL	52,935.9	4,370.9	575.1	20,204.3	25,310.6	207,514.7

Source: UNCOMTRADE data (annual average values, 2012-17).

55. **Table 13 looks more closely at the complementarity of imports and exports of APEI+ countries for this group of commodities by considering each country's trade balance.** In this table, commodities for which a mainland APEI country or Madagascar has a large trade surplus and for which at least one of the island nations has a large trade deficit have been highlighted. As with all such tables in this report, potential exporters are shaded in beige and importers in blue. Opportunities for trade between the mainland countries including possible exports from the island nations, such as the potential for stock feed exports from Mauritius, have also been highlighted where these exist. Naturally, many other factors shape trade potential but the availability of exportable surpluses and import demand is the first fundamental requirement for stronger trade linkages in the short-run.

Table 13: Balance of trade for stock feed and stock feed ingredients (US\$ '000)

HS6 Description	Trade Balance (X-M)					
	MRU	SYC	MAD	MAL	MOZ	ZMB
Made feed						
230990 - Preparations used in animal feeding	3,060	(2,830)	(18,904)	(2,113)	(3,388)	4,110
Whole grains and meal						
100590 - Cereals; maize (corn), other than seed	(16,335)	(379)	(2,589)	(25,090)	(23,961)	138,465
110220 - Cereal flour; of maize (corn)	(16)	(51)	(368)	(270)	(4,680)	162
120100 - Soya beans	(202)	(96)	(21)	4,682	(629)	10,452
120810 - Flours and meals; of soya beans	(14)	(157)	(11)	(4,036)	(206)	11,777
Bran						
230210 - Bran of maize (corn)	(19)	9	(13)	684	797	7,034
230230 - Bran of wheat	1,388	(47)	(29)	2,648	17,098	634
Oil-cake						
230400 - Oil-cake from extraction of soya-bean oil	(22,405)	(0)	(7,650)	4,463	(8,472)	13,837
230610 - Oil-cake from extraction of cotton seed oils	(40)	(0)	27	3,029	974	4,658
230630 - Oil-cake from extraction of sunflower seed oils	(230)	(0)	(54)	89	(188)	255

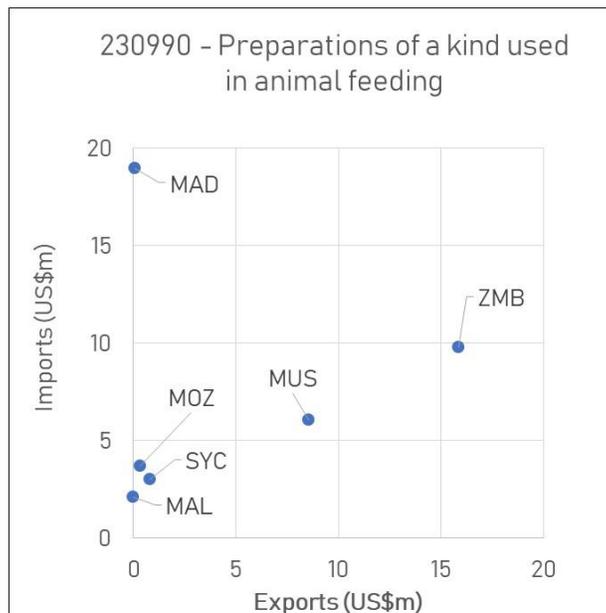
Source: Calculated from UNCOMTRADE data (annual average values, 2012-17).

56. **As shown by these data, Mauritius is a large importer of feed ingredients and large exporter of made feed.** Mauritius is also a large exporter of wheat bran which is a byproduct of its milling industry.⁶ All other APEI+ countries are large importers of feed except for Zambia. Additionally, Zambia is a large net exporter of maize, soybeans, soybean meal, soybean cake, and sunflower cake as indicated by the shadings. Zambia also exports maize bran and wheat bran, maize flour, and cotton seed cake but these are not highlighted for trade complementary because of only being in limited demand in the island nations. Over the period covered, Malawi has been a large exporter of soybeans and soybean cake and moderately large exporter of sunflower cake. Seychelles is a strong net importer of prepared feed, maize, soybeans, and high-fat soybean meal.

3.1.1. Made feed

57. **Chart 10 shows the relative scale of imports and exports of made feed by APEI+ countries.** As described above, Zambia is the region's largest feed exporter followed by Mauritius. Both countries also import feed but are net exporters overall. Seychelles exports small amounts of feed to Australia, Sri Lanka, and Hong Kong but is a strong importer on balance.

Chart 10: Trade complementarity in animal feed preparations



Source: UNCOMTRADE data (annual average values, 2012-17).

58. **The stock feed industry in Mauritius is dominated by two large companies.** Livestock Feed Ltd. (LFL) is part of the Eclasia Group. It is the largest feed producer in Mauritius and manufactures around 110,000 tons of feed annually for local use and export. Through its parent company, LFL is vertically integrated with investments in day-old chick production, broiler farming, and poultry distribution and retail. Additionally, LFL operates three feed plants in Madagascar that are largely supplied with ingredients imported by Eclasia through Mauritius. To reduce the import dependency of its Madagascar operations, LFL is actively promoting maize and soybean production in that country. LFL's main export markets for feed are Madagascar, Seychelles, Reunion, and Comoros. Exports have also gone to Zambia, Mozambique,

⁶ Mauritius imports US\$48.5 million of wheat annually, nearly all of which is from France (57 percent of total value) and Australia (42 percent of total value). Between 2012-2017, Zambia supplied an average of US\$2,000 of wheat to Mauritius.

and Zimbabwe. Meaders Feeds Ltd. is the second largest feed producer in Mauritius and produces around 85,000 tons of feed for the domestic and regional markets annually. Most exports by Meaders are to Seychelles, Comoros, Mayotte, Reunion, Madagascar, and Mozambique. Meaders recently opened a subsidiary in Seychelles to manage its operations there. Like LFL, Meaders is vertically integrated with its leading shareholders having large investments in chick production, egg production, and poultry distribution.

59. **Ferox Feed is the only commercial feed producer in Seychelles.** Reestablished in 2013, Ferox Feed produces around 6,000 tons of feed per year made from imported maize, high-fat soybean meal, and wheat bran. According to Ferox management, the total demand for made feed in Seychelles is around 10,800 tons annually excluding feed made by independent farmers, meaning Ferox supplies about 55 percent of the total commercial market. Meaders and LFL supply the balance of commercially produced feed in Seychelles with around 30 percent and 15 percent market share respectively. Other than commercially manufactured feed, some farmers in Seychelles import feed ingredients to blend their own feed. Discussions with farmers engaged in this activity and analysis of customs data suggests total independent production may be on the order of 4,200 tons per year. Independent farmers also import a limited amount of made feed from suppliers in South Africa, UAE, and India.

60. **There are several large firms producing animal feed in Zambia.** Key firms include Novatek Animal Feeds which is part of the Zambeef Group of Companies, National Milling Corporation, Tiger Animal Feeds, Nutrifeds, Pembe Milling, Simba Milling, Olympic Milling, and Emmans Feed Enterprises. Most of these firms are owned by primary producers of broilers. They were originally set up to supply their own breeder operations but have evolved to supply other parts of the domestic and regional export market (Samboko, Zulu-Mbata, and Chapato, 2018). Novatek is ISO 9001 (quality management) and ISO 22000 (food safety management) certified which is a strong advantage in penetrating the export market as its feed standards are internationally recognized. Livestock feed is now the 10th most valuable agriculture export for Zambia overall.

61. **Table 14 shows the total value of feed trade of APEI+ countries by export market and import partner.** As shown, more than 82 percent of feed exports by Mauritius are to other APEI+ countries with 47 percent of total feed exports going to Madagascar and 32 percent to Seychelles. The data also show that Mauritius supplies about 85 percent of total feed imports by Seychelles and 21 percent of feed imports by Madagascar. For Zambia, a very different picture of APEI+ regional integration emerges whereby 96 percent of feed exports have been to Zimbabwe where Zambia enjoys an advantage in low transport costs. Zambia has not exported feed to any other APEI+ country other than Malawi where transport costs are also low. Beyond what is shown by the formal data, feed producers in Zambia say there are several million dollars of unrecorded exports to the Democratic Republic of Congo (DRC) most of which is walked across the border by small traders at Kasumbalesa. Novatek, for instance, opened a depot at Kasumbalesa in 2015 to supply this market and other feed companies also have distributors in this border location.

Table 14: Import and export of animal feed preparations by trade partner**230990 - Preparations used in animal feeding (US\$ '000)**

Island nations		Mainland and Madagascar									
Mauritius Exports	Seychelles Imports	Madagascar Imports		Malawi Imports		Zambia Exports					
APEI+ Total	7,137	APEI+ Total	3,326	APEI+ Total	4,060	APEI+ Total	201	APEI+ Total	149	APEI+ Total	201
Madagascar	4,060	Madagascar		Malawi		Madagascar		Madagascar		Madagascar	
Malawi	6	Malawi		Mauritius	4,060	Mauritius		Malawi		Malawi	201
Mozambique	149	Mauritius	3,326	Mozambique		Mozambique		Mauritius	149	Mauritius	
Seychelles	2,771	Mozambique		Seychelles		Seychelles		Seychelles		Mozambique	
Zambia	151	Zambia		Zambia		Zambia	201	Zambia		Seychelles	
Total non-APEI+	1,550	Total non-APEI+	602	Total non-APEI+	15,643	Total non-APEI+	2,673	Total non-APEI+	4,575	Total non-APEI+	15,639
Zimbabwe	480	United Arab Emi	131	France	10,883	South Africa	2,595	South Africa	4,048	Zimbabwe	15,284
Uganda	454	India	104	Unspecified	3,471	India	27	Portugal	224	Tanzania	171
Saudi Arabia	390	South Africa	101	South Africa	189	Australia	16	Spain	97	Namibia	92
Oman	172	Singapore	82	Netherlands	142	Austria	6	Brazil	77	Malaysia	63
		China	24	Thailand	115	Netherlands	6	France	19	Botswana	13
RoW	54	RoW	160	RoW	843	RoW	23	RoW	110	RoW	16
Total World	8,687	Total World	3,928	Total World	19,703	Total World	2,874	Total World	4,724	Total World	15,840
APEI+ share	82.2%	APEI+ share	84.7%	APEI+ share	20.6%	APEI+ share	7.0%	APEI+ share	3.2%	APEI+ share	1.3%

Source: UNCOMTRADE data (annual average values, 2012-17).

62. **Because of limited connectivity between Zambia and Indian Ocean markets compared with Mauritius, it may be difficult for Zambia to supply made feed to Seychelles and Madagascar.** Zambia has the advantage of abundant raw materials, but Mauritius can import these ingredients on the world market and is in a strong position to supply Indian Ocean countries with feed. For Zambia, increased exports to Malawi and/or to northern Mozambique is much more likely. Northern Mozambique is an increasingly important region for growing feed ingredients but does not yet have large industrial feed manufacturing. Rather, most commercial feed production in Mozambique takes place in the south of the country with manufacturers in Maputo saying it is cheaper to import feed ingredients from South Africa and other global suppliers than from domestic producers in the north. From 2012-17, Mozambique exported an average of US\$318,000 of made feed annually of which 95 percent was to Eswatini which is near Maputo.

3.1.2. Feed ingredients

63. **Feed manufacturers in Mauritius import maize and soybean cake in large, bulk shipments.** Most of these supplies come from South America either by charter vessel or in loose-packed containers that can be tipped out without un-bagging. LFL said that it imports around 25,000 to 30,000 tons of maize and 5,000 to 10,000 tons of soybean oil-cake by chartered vessel four to five times a year. According to managers, importing in bulk saves up to US\$75/ton compared with containerized freight. These large shipments, however, also tie up a large amount of capital that can easily be on the order of US\$7 million to US\$8.5 million for the commodities alone excluding vessel costs. At least some of these commodities are re-exported by LFL to Madagascar where there are limited bulk handling facilities, so they must be containerized before transshipment. For its part, Meaders mostly imports in loose-packed containers rather than in bulk. Managers reported they use around 50 x 20-foot containers of maize and 12 x 20-foot containers of soybean cake weekly with deliveries roughly every month. There are no bulk handling facilities for grains in Seychelles and all feed and feed ingredient imported to this country must be containerized. Ferox has sometimes imported bagged commodities but, like buyers in Mauritius, says it prefers loose packed containers that are easier to unload.

64. **By contrast, most exports of maize and soybean cake from APEI+ countries are dispatched in 50kg bags.** Zambia and Malawi's competitiveness in regional markets derives in large part from the availability of inexpensive backload freight. Packing in loose containers on these routes is possible, but the cheapest backload rates are for commodities sent as break bulk on flatbed trucks which requires

bagging. This is the most widely available form of freight and saves on container fees for the overland portion of the journey. Un-bagging of grains and oil-cake when stuffing a container for sea passage is possible and is likely cheaper in continental Africa than in the island nations but adds to total cost and is a disadvantage to APEI+ countries compared with competitors who are better able to transport a loose product all the way from the farm to terminal market.

65. **On the other hand, an important advantage of mainland APEI countries and Madagascar is that these countries exclusively produce non-genetically modified (non-GM) crops.** As described in the country background annexes, Zambia and Malawi are strict non-GM countries and do not allow the importation or production of any GM commodities. Madagascar allows GM foods and GM commodities that are broken or crushed to prevent planting (i.e. GM maize flour or GM soybean cake). Mozambique currently also does not allow the production of GM crops but does allow GM imports for food and is testing the production of GM maize. While there are not currently restrictions on the importation of GM commodities to Mauritius or Seychelles (other than labeling requirements on GM foods in Mauritius), feed manufacturers, poultry producers, and retail stores in these countries pointed to strong demand for non-GM foods and said they are working hard to develop non-GM product lines. South Africa similarly allows GM imports and, in this market, non-GM soybean cake from Zambia and Malawi attracts a premium of around US\$20-30 per ton. Assuming similar premiums in Mauritius and Seychelles, this would help offset at least some of the transport costs. In global markets, however, India is also a large producer of non-GM soy and maize and is currently the largest supplier of these products to Seychelles. Argentina and Paraguay are the main suppliers of feed ingredients to Mauritius and mainly grow GM crops.

66. **A possible advantage in the trade of feed ingredients is that there are relatively few plant health risks associated with these commodities.** Cereals grains, cereal brans, and oil-cake must generally be free from or originate from areas that are free from certain plant viruses and disease and be fumigated with methyl bromide or an approved alternative against quarantined pests. Compared with phytosanitary requirements for fresh commodities, these conditions are relatively straightforward and easy to meet. Several of the quarantine conditions for cereal grains to Mauritius are for plant viruses and bacteria found mainly in the Americas.⁷ On the other hand, maize is of the same family as sugarcane so there are very tight controls on this crop in Mauritius even though the grain is shipped dry.

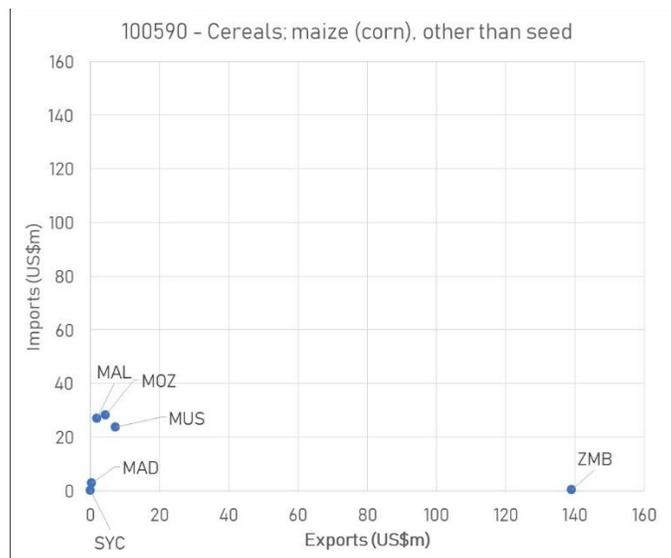
67. **Made feed and feed ingredients must also originate from areas without recent outbreaks of foot and mouth disease (FMD) or outbreaks of anthrax.** In Mauritius, products incorporated in feed must have been harvested from areas without an outbreak of FMD for 12 months and where there have been no cases of anthrax for five years. In March 2019, certain parts of Zambia, including places in Eastern Province that are important for maize and soybeans, reported FMD. There were also reports in 2016 of anthrax in a district of Eastern Province that is important for maize and soy. Malawi has also had recent outbreaks of Anthrax and FMD. These risks do not preclude made feed and feed ingredients from being exported to the island nations but do require systems that ensure the commodities originate from disease free areas. India has also had recent outbreaks of FMD and anthrax but still exports successfully to Seychelles.

⁷ For instance, bacterial wilt of maize (*Pantoea stewartii*) and Goss's bacterial wilt and leaf blight (*Clavibacter michiganensis subsp. nebraskensis*).

Maize

68. **Zambia is the only net maize exporter in the APEI+ group of countries.** As shown in Chart 11, Mozambique, Malawi, and Madagascar have, at times, also exported maize but are strong net buyers overall. Maize exports from Madagascar have mainly been to France (US\$434,000 annually) so is likely sweet or baby corn marketed by a horticulture export company rather than grain. Exports from Malawi have mainly been to Kenya (US\$1.2 million annually) while Mozambique has mainly exported to Zimbabwe (US\$2.3 million annually) and Malawi (US\$1.7 million annually). Over the period covered, Mauritius exported around US\$7.3 million of maize to Zimbabwe and, in this case, would be re-exported maize bought from elsewhere.

Chart 11: Trade complementarity in maize



Source: UNCOMTRADE data (annual average values, 2012-17).

69. **Table 15 takes a closer look at the main directions of maize trade by APEI+ countries according to whether each is a net importer or exporters.** Despite periodic export bans that make relying on Zambian maize risky, these data show that Zambia exported more than US\$139 million of maize annually from 2012-2017 on average. These exports are more than twice the total import value of all other APEI+ countries combined and almost six times greater than total maize imports by Mauritius. Most of Zambia's maize exports have been to Zimbabwe (69 percent of total value) and Malawi (18 percent of total value) much of which was traded through government-to-government deals involving the Zambia Food Reserve Agency (FRA) rather than private exporters. Zambia has also exported maize to northern Mozambique and a small amount to Madagascar. Beyond the values captured by official statistics, Zambia exports at least 100,000 tons of maize meal to the Democratic Republic of Congo through informal channels that are easily worth an additional US\$28 million annually. Table 15 also shows that Mauritius mainly imports from Argentina (79.7 percent) and Paraguay (20 percent) while Seychelles largely imports from India (85.2 percent) with only small amounts coming from elsewhere.

Table 15: Imports and exports of maize other than seed by trade partner**100590 - Cereals; maize (corn), other than seed (US\$ '000)**

Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Imports		Malawi Imports		Mozambique Imports		Zambia Exports	
APEI+ Total	16	APEI+ Total	9	APEI+ Total	256	APEI+ Total	26,867	APEI+ Total	1,826	APEI+ Total	27,061
Madagascar	16	Madagascar		Malawi	19	Madagascar		Madagascar		Madagascar	136
Malawi		Malawi		Mauritius		Mauritius		Malawi	36	Malawi	25,205
Mozambique		Mauritius	9	Mozambique	100	Mozambique	1,662	Mauritius	70	Mauritius	
Seychelles		Mozambique		Seychelles	1	Seychelles		Seychelles		Mozambique	1,720
Zambia		Zambia		Zambia	136	Zambia	25,205	Zambia	1,720	Seychelles	
Total non-APEI+	23,703	Total non-APEI+	308	Total non-APEI+	2,785	Total non-APEI+	204	Total non-APEI+	26,534	Total non-APEI+	112,001
Argentina	18,905	India	270	South Africa	2,371	Mexico	116	South Africa	19,699	Zimbabwe	96,024
Paraguay	4,744	United Arab Emi	12	United States	199	South Africa	60	United Arab Emi	2,481	Kenya	4,593
South Africa	39	Pakistan	11	Ukraine	121	Tanzania	28	Mexico	1,221	Tanzania	4,160
India	8	Uganda	10	France	82	United Arab Emi		Singapore	643	South Africa	3,406
Poland	3	South Africa	2	RoW	12	RoW		United States	558	Namibia	2,408
RoW	3	RoW	4	RoW	12	RoW		RoW	1,933	RoW	1,409
Total World	23,718	Total World	317	Total World	3,041	Total World	27,071	Total World	28,360	Total World	139,062
APEI+ share	0.1%	APEI+ share	2.8%	APEI+ share	8.4%	APEI+ share	99.2%	APEI+ share	6.4%	APEI+ share	19.5%

Source: UNCOMTRADE data (annual average values, 2012-17).

70. **It is not an accident that most of Zambia's maize exports go to its continental neighbors.** In 2016, the import parity price in Zimbabwe reached US\$330/ton and US\$310/ton in Malawi (Sambko, Zulu-Mbata, and Chapoto, 2018). In the island nations, 2016 import parity prices were around US\$192/ton to US\$206/ton in Mauritius and US\$272/ton to US\$307/ton in Seychelles. Although the 2016 season was affected by an El Niño event that led to maize shortages in much of southern Africa, the same high costs of overland transport that make it difficult for Zambia and other landlocked countries to compete in the island nations consistently provide natural protection in closer-by continental markets. As described, frontload freight from a port location to Zimbabwe or Malawi is 60-70 percent more expensive than backload freight from Zambia. In these circumstances, if countries that are closer to the sea than Zambia chose to import from elsewhere they would have to pay frontload rates.

71. **It is also relevant to note that Zambia and other continental countries almost exclusively grow white maize while Mauritius and Seychelles prefer yellow.** Maize is the main staple food in mainland APEI countries and consumers have a strong preference for white maize and will normally only eat yellow maize under duress (except for yellow sweet corn that is different from staple grain). Apart from beta-carotene, white maize has the same nutritional value as yellow maize and is perfectly acceptable for human food and for stock feed. The main difference between white and yellow maize in stock feed is that white maize results in pale colored meat and eggs that may be unappealing to consumers accustomed to products from chickens fed on yellow corn. The color difference can be made up for during manufacturing by adding xanthophyll, a natural plant pigment, to feed made from white maize. This is a simple step and involves only modest additional cost.

Soybeans

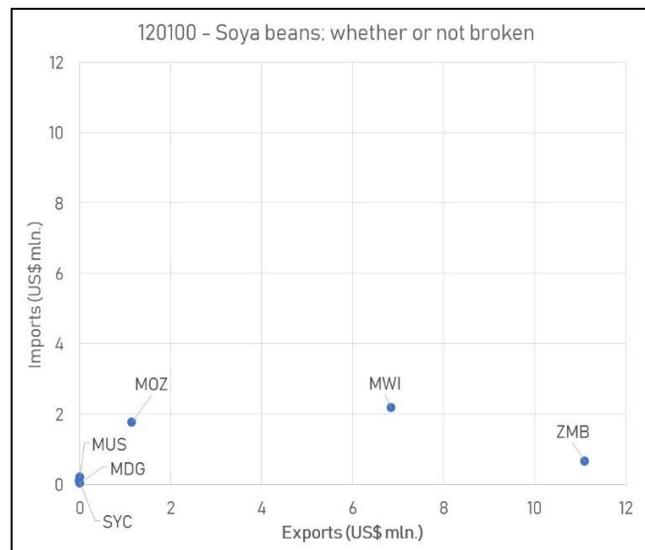
72. **Until recently, Zambia and Malawi have been large soybean exporters.** Driven by strong demand for edible oil and private investments in soybean processing, soybean production in both countries has grown strongly over the past decade. Soybean production has also increased significantly along the Nacala Corridor in northern Mozambique. Apart from one commercial feed mill in Nampula, processing capacity in northern Mozambique is limited and there have been some soybean exports from this region. Overall, Mozambique is deficit in soybeans and with most demand for oil in the south it is cheaper for plants around Maputo to import the raw material they need from South Africa and elsewhere. Madagascar also has strong and growing demand for edible oil and poultry feed but has only limited capacity for processing

soybeans and production there has remained relatively flat. Mauritius and Seychelles are small users of unprocessed soybeans and only import around US\$209,000 and US\$96,000 of soybeans respectively.

73. **The rise in soybean production in Zambia, Malawi and Mozambique has been driven by the demand for edible oil.** Like most of southern Africa, these APEI countries are structurally deficit in edible oil providing a ready-market for all local production. In recent years, three technologically-advanced solvent extraction plants have been installed in Zambia (two in Lusaka and one in Ndola) each with around 1,000 tons processing capacity per day. These plants are excellent for oil extraction and yield low-fat soybean oilcake that is ideal for use in stock feed. Excluding older ram and screw press operations, total soybean processing capacity in Zambia is now more than 800,000 tons per year against 300,000 to 350,000 tons total annual soybean production. Similarly, two modern solvent extraction plants were recently installed in Malawi with combined annual capacity of 400,000 tons per year against total soybean production of around 200,000 tons a year. These plants mainly derive their profits from oil sales and, even at full capacity, Malawi and Zambia would still be deficit in edible oil. Already at current production, however, the countries are only able to absorb around 30-40 percent of total cake meaning that processors are actively looking to develop export markets.

74. **Given surplus processing capacity, private investors in both countries have been pressuring their governments to restrict the export of unprocessed soybeans to ensure a steady supply of raw materials to their plants.** During data collection, an export ban on soybeans was in place in Zambia (ostensibly to protect domestic food security in edible oil) and processors in Malawi were lobbying their government for similar restrictions. Chart 12 provides an overview of annual average soybean imports and exports by APEI+ countries from 2012-2017.

Chart 12: Trade complementarity in soybeans



Source: UNCOMTRADE data (annual average values, 2012-17).

75. **Table 16 shows main directions of unprocessed soybean trade by APEI+ countries for the period 2012-2017 which is before export restrictions were introduced in Zambia.** As with maize, these data show that most exports by Zambia and Malawi were to Zimbabwe and other regional neighbors where low-price backload freight is available.

Table 16: Imports and exports of soya beans by trade partner**120100 - Soya beans; whether or not broken (US\$ '000)**

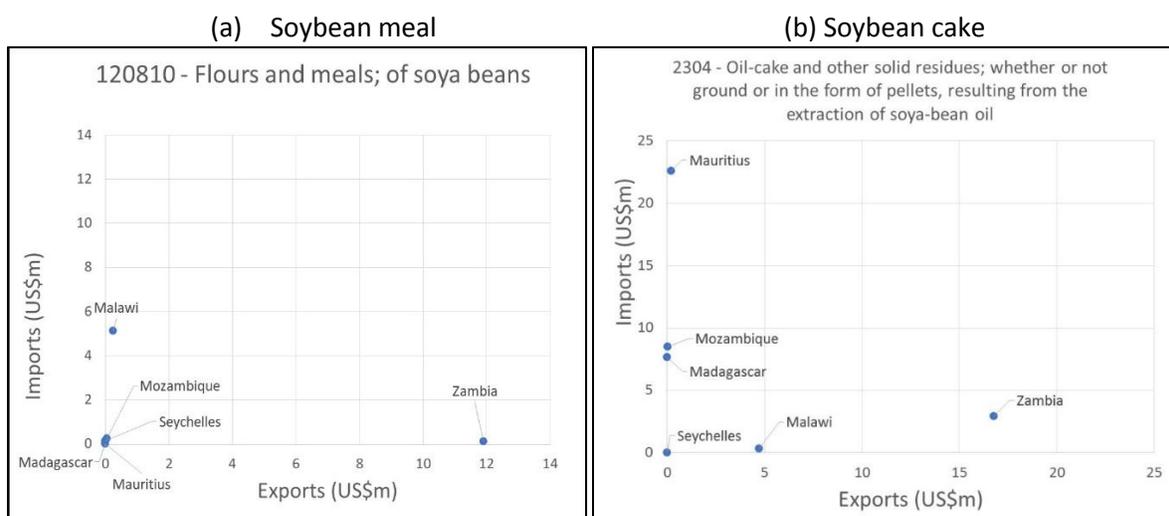
Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Imports		Malawi Exports		Mozambique Imports		Zambia Exports	
APEI+ Total	11	APEI+ Total		APEI+ Total		APEI+ Total	458	APEI+ Total	9	APEI+ Total	52
Madagascar	11	Madagascar		Malawi		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius		Mauritius		Malawi	9	Malawi	52
Mozambique		Mauritius		Mozambique		Mozambique	9	Mauritius		Mauritius	
Seychelles		Mozambique		Seychelles		Seychelles		Seychelles		Mozambique	
Zambia		Zambia		Zambia		Zambia	449	Zambia		Seychelles	
Total non-APEI+	198	Total non-APEI+	80	Total non-APEI+	33	Total non-APEI+	6,307	Total non-APEI+	1,752	Total non-APEI+	11,048
Canada	148	India	78	South Africa	33	Zimbabwe	3,221	South Africa	1,357	Zimbabwe	5,539
Brazil	22	United Arab Emi	1	China		South Africa	986	Brazil	109	South Africa	4,647
China	15	Malaysia	0	Italy		Botswana	719	Zimbabwe	100	Botswana	705
Malaysia	10	Singapore		Unspecified		India	590	United States	91	Tanzania	93
Singapore	1	China		France		Nepal	441	Ethiopia(excludi	84	Rwanda	63
RoW	2	RoW				RoW	349	RoW	11	RoW	1
Total World	209	Total World	80	Total World	33	Total World	6,764	Total World	1,762	Total World	11,101
APEI+ share	5.5%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	6.8%	APEI+ share	0.5%	APEI+ share	0.5%

Source: UNCOMTRADE data (annual average values, 2012-17).

76. In considering these data, it is interesting to note that 42 and 14 percent of Zambia's and Malawi's soybean exports were to South Africa respectively. Unlike Zimbabwe, South Africa does not restrict GM imports and the fact that at least some buyers in this market chose to buy Zambian and Malawi soybeans when (like Mauritius and Seychelles) they could buy from any other world market speaks to the competitiveness of this product. Processors and stock feed manufacturers in both countries said that the soybeans and soybean cake from Malawi and Zambia have an excellent reputation, not just because of being GM free, but also because of superior protein and fat characteristics.

Soybean oil-cake and soybean meal

77. Soybean oilcake and soybean meal likely offer the best opportunities for increased trade between mainland APEI+ countries and the island nations in this category of product. As described, maize and soybeans not only face stiff global competition in regional markets but are vulnerable to export restrictions. For soybean meal and soybean cake, processors are actively looking to develop new export markets. Mauritius mainly imports low fat soybean cake while Seychelles has so far mainly imported high fat soybean meal. Chart 13 shows the trade complementarity for soybean meal and soybean cake among APEI+ countries.

Chart 13: Trade complementarity in (a) soybean meal and (b) soybean cake


Source: UNCOMTRADE data (annual average values, 2012-17).

78. **Table 17 takes a closer look at the imports and exports of high-fat soybean meal by APEI+ countries.** Despite having a shorter shelf life than low-fat cake, this is the main soy product imported by Seychelles. As shown, most soybean meal imports to Seychelles are from India which grows non-GM soybeans meaning the meal is also non-GM. Of the APEI+ countries, only Zambia is a net exporter with 58 percent of exports going to Zimbabwe and 37 percent to Tanzania. Backload freight is available on both routes including to Dar es Salaam from where there are vessels that transit to Port Victoria. At around US\$375/ton fob Lusaka, soybean meal is a higher value commodity than maize so is better able to absorb the costs of transport including cost of container stuffing. The current fob price in India quoted by the Soybean Processors Association of India (SOPA) is US\$445/ton (SOPA website, 22 April 2019) leaving Zambia about US\$70/ton to cover overland transport and container stuffing in Dar es Salaam. Moreover, sea freight from Chennai to Seychelles is around US\$101-120 per ton compared with US\$72-114/ton from southern Africa providing Zambia a further competitive opportunity (see Table 8).

Table 17: Imports and exports of soybean meal by trade partner
120810 - Flours and meals; of soya beans (US\$ '000)

Island nations		Mainland and Madagascar									
Mauritius Imports	Seychelles Imports	Madagascar Imports	Malawi Imports	Mozambique Imports	Zambia Exports						
APEI+ Total	APEI+ Total	3	APEI+ Total	66	APEI+ Total	4	APEI+ Total	17			
Madagascar	Madagascar	Malawi	Madagascar	Madagascar	Madagascar	Madagascar	Madagascar				
Malawi	Malawi	Mauritius	Mauritius	Malawi	4	Malawi	17				
Mozambique	Mauritius	3	Mozambique	49	Mauritius	Mozambique	Mauritius				
Seychelles	Mozambique	Seychelles	Seychelles	Seychelles	Seychelles	Mozambique	Mozambique				
Zambia	Zambia	Zambia	Zambia	17	Zambia	Seychelles	Seychelles				
Total non-APEI+	Total non-APEI+	128	Total non-APEI+	12	Total non-APEI+	4,142	Total non-APEI+	258			
Canada	12	India	123	France	4	United States	2,544	United States	156	Zimbabwe	6,939
China	2	South Africa	5	South Africa	3	Italy	659	South Africa	102	Tanzania	4,398
South Africa	2	United Arab Emi		Unspecified	2	South Africa	642	Portugal		South Africa	469
Thailand	1	Singapore		China	2	Belgium	140			Kenya	72
United Arab Emi		Malaysia		Austria		Unspecified	113			Namibia	13
RoW		RoW		RoW		RoW	45				
Total World	17	Total World	131	Total World	12	Total World	4,207	Total World	262	Total World	11,908
APEI+ share	0.0%	APEI+ share	2.1%	APEI+ share	0.0%	APEI+ share	1.6%	APEI+ share	1.6%	APEI+ share	0.1%

Source: UN COMTRADE data (annual average values, 2012-17).

79. **Next Table 18 looks at the trade of low-fat soybean cake.** As shown, this is a major import for Mauritius and significant export for both Zambia and Malawi alike. Madagascar and Mozambique are also large importers of soybean cake. As described above, Mauritius imports almost entirely from Argentina. Madagascar imports non-GM cake from India and GM cake from Brazil, Argentina, and elsewhere.⁸

Table 18: Imports and exports of low-fat soybean cake by trade partner

230400 - Oil-cake and other solid residues; whether or not ground or in the form of pellets, resulting from the extraction of soya-bean oil (US\$ '000)

Island nations		Mainland and Madagascar							
Mauritius Imports	Seychelles Imports	Madagascar Imports		Malawi Exports		Zambia Exports			
APEI+ Total	APEI+ Total	APEI+ Total	163	APEI+ Total	717	APEI+ Total	609	APEI+ Total	40
Madagascar	Madagascar	Malawi		Madagascar		Madagascar		Madagascar	
Malawi	Malawi	Mauritius	163	Mauritius		Mauritius	598	Malawi	29
Mozambique	Mauritius	Mozambique		Mozambique	598	Mauritius		Mauritius	
Seychelles	Mozambique	Seychelles		Seychelles		Seychelles		Mozambique	11
Zambia	Zambia	Zambia		Zambia	119	Zambia	11	Seychelles	
Total non-APEI+	22,557	Total non-APEI+	7,235	Total non-APEI+	3,994	Total non-APEI+	7,901	Total non-APEI+	16,549
Argentina	21,665	Sri Lanka		India	2,600	Zimbabwe	2,093	South Africa	7,016
Paraguay	274	South Africa		Brazil	1,905	Tanzania	1,067	India	451
France	239			Argentina	1,874	South Africa	498	Argentina	379
India	222			China	401	Kenya	284	Zimbabwe	27
South Africa	89			Pakistan	296	RoW	52	Singapore	21
RoW	68			RoW	157	RoW	52	RoW	7
Total World	22,557	Total World	7,398	Total World	4,711	Total World	8,510	Total World	16,589
APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	2.2%	APEI+ share	15.2%	APEI+ share	7.2%
				APEI+ share	0.2%	APEI+ share	7.2%	APEI+ share	0.2%

Source: UNCOMTRADE data (annual average values, 2012-17).

80. **To gauge the competitiveness of Zambian oilcake in regional markets, Zambian brokers say that low fat, non-GM soy cake packed in 50kg bags sells for around US\$380/ton at the factory gate in Lusaka.**⁹ Transport on a flatbed truck using backload rates to Gauteng, South Africa is US\$70/ton giving a landed price in a major consuming area of US\$450/ton. Onward freight from Gauteng to Durban Harbor was reported to be US\$30/ton. The cost of stuffing a container is also around US\$30/ton giving a total price of US\$510/ton fob Durban. Global prices for soy cake are quoted cif Rotterdam and are currently around US\$460/ton for Argentine cake on a minimum order of 12,500 tons. To the extent this price is transferrable to the port of Durban, offloading costs in Durban and inland transport give a landed price of around US\$520/ton in Gauteng which is US\$70/ton more than the price of Zambian cake delivered to the same location. For exports to Zimbabwe, which is closer to Lusaka and further from Durban, price differentials on transport will be even greater making Zambian cake that much more competitive as indicated by high volume of recorded exports to this market.

81. **Zambian brokers report that the cost of backload freight from Lusaka to Beira is even lower than to Durban at only US\$70/ton.** Adding transport to Beira to the price of soybean cake in Lusaka (US\$380/ton) and container stuffing costs (US\$30/ton) gives a fob price of US\$480/ton in Beira. Sea freight from Beira to Port Louis is around US\$80/ton suggesting the landed prices for Zambian cake in Mauritius may be around US\$560/ton. While these are rough estimates only, given the world reference price for soy cake of US\$460/ton cif Rotterdam, it is likely that large Mauritian users can import cake to Port Louis for less than \$560/ton, especially if using chartered vessels and bulk handling facilities at both ends of the chain. Nevertheless, the ability of Zambia (and Malawi) to supply smaller quantities of containerized cake

⁸ Although Madagascar is a non-GM agriculture producer, it does allow GM imports that cannot be planted.

⁹ In Malawi, processors said the current price is US\$400/ton at the factory gate in Lilongwe. This is slightly higher than the price of high-fat meal.

(that do not tie up so much finance), together with the non-GM status of these products may be enough to make importation of APEI soybean cake commercially attractive.

3.1.3 Conclusions – stock feed and feed ingredients

82. **Taken together, the analysis shows mixed potential for increased trade of stock feed and feed ingredients.** Although Zambia is a large exporter of maize, soybean cake, and made stock feed, and SPS risks for these commodities are relatively low and easy to manage, these commodities also have low value to weight ratios that make it difficult to compete with global suppliers in Latin America and elsewhere with better connectivity and who ship dozens of containers or full vessel loads at a time. Of the commodities in this group, made stock feed has the highest value to weight ratio but Mauritius is a large exporter of made feed itself and enjoys much lower transport cost and well-established business links in Seychelles, Madagascar, and other potential Indian Ocean outlets. Even though inexpensive backload freight makes it possible for Zambia and Malawi to send truckloads of commodity to a port location for a reasonably competitive price, import parity prices for soybean cake and other feed-related commodities in landlocked Zimbabwe and interior parts of South Africa are likely to be as high or higher than in the island nations making these closer by markets much more attractive. Persistent export bans and other trade restrictions on maize in Malawi and Zambia further complicate the trade prospects for this crop. Northern Mozambique is surplus in maize and regularly exports but mostly sells to Zimbabwe and Malawi where import parity prices are most attractive. Madagascar has vast agriculture export potential but is presently a net importer of all commodities in this group.

83. **On this basis, the best prospects for increased exports from the mainland APEI countries to the island nations likely involve exporting relatively small consignments of non-GMO soybean oilcake and soybean meal.** Stock feed makers in Mauritius and Seychelles all said there is strong and growing demand for non-GM foods in their countries. Non-GM soybean cake sells for around US\$30-40 more per ton than conventional cake which helps to offset some of the higher transport costs associated with importing from landlocked countries in Africa. India also exports non-GM cake and has been the main supplier to Seychelles, yet by using inexpensive backload freight, Zambia and Malawi are likely able to deliver non-GM cake to Victoria or Port Louis for roughly the same price. Zambia and Malawi also have the advantage of being able to supply product in flexible amounts from a single container to dozens of containers at a time which ties up less capital for importers compared with buying an entire vessel load.

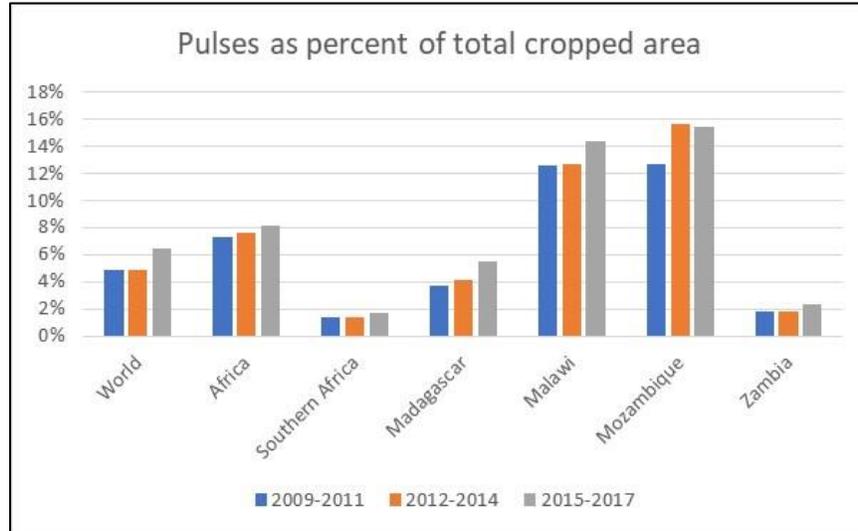
3.2. Pulses

84. **Pulses are the dried and shelled edible seeds that grow in the pods of legumes.** Pulses come in many shapes and colors. The main internationally traded pulses are dry beans, dry broad beans, dry peas, chickpeas, cowpeas, pigeon peas, and lentils. For each type, there may be green, yellow, red, brown, white, speckled, and spotted varieties. Pulses can be consumed whole or split, ground in to flours or separated into fractions such as protein, fiber, and starch. They can also be processed and canned.

85. **Pulses are well suited to environmental conditions in southern Africa and offer many advantages to smallholder farmers.** They are easy to grow but not suited to mechanization and are generally forgiving of climate stress. As part of the legume family, pulses are nitrogen-fixing so help to preserve soil fertility and reduce the need for chemical fertilizers. Used in crop rotation, pulses help reduce losses caused by pests and diseases. Moreover, pulses are rich in nutrition and can be stored for several months or longer. These factors together make pulses a good choice for small farmers both as a cash crop and for household food security (Snapp, Rahmanian, and Batello, 2018; FAO, 2019). Chart 14 shows that pulses are an especially important part of agriculture in Malawi, Mozambique, and Madagascar. As a share of total cropped area, significantly more land is given to pulses in Malawi and

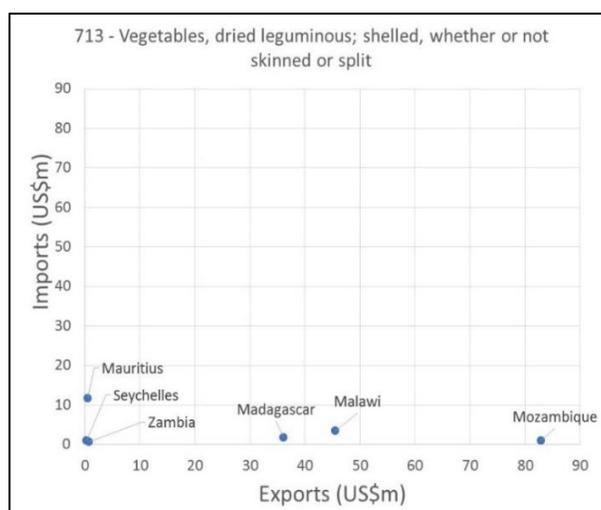
Mozambique than in southern Africa, Africa, or the world overall. Relatively less land is given to pulses in Madagascar and Zambia though these countries are still ahead of the southern Africa average with a sizeable increase in area given to pulses over the period covered especially in Madagascar.

Chart 14: Average share of total cropped area given to pulses



Source: Calculated from FAOSTAT (accessed May 2, 2019).

86. **Chart 15 provides an overview trade complementarity for pulses between APEI+ countries.** As shown, Mozambique, Malawi, and Madagascar are large net exporters of pulses. Zambia is also a net pulse exporter but on a much smaller scale and, for certain types of pulses including dried peas and lentils is a net importer (see Table 21). At just US\$11.6 million total pulse imports by Mauritius and US\$642,000 imports by Seychelles, the island nations are small markets compared with total exports by Madagascar, Malawi, and Mozambique. Still, with strong cultural ties to India, the island nations are large consumers of pulses for their size. Worldwide, annual pulse imports are around \$1.39 per capita while Mauritius imports US\$9.21 of pulses per capita and Seychelles imports US\$9.82 per capita. India is the world's largest consumer (and producer) of pulses and imports around US\$2.35 of pulses per capita each year.

Chart 15: Trade complementarity in pulses

Source: UNCOMTRADE data (annual average values, 2012-17).

87. **Table 19 looks in more detail at pulse imports and exports of APEI+ countries by trade partner.** This table shows that 91 percent of pulse exports from Mozambique have been to India. As discussed below, the weakness of relying so heavily on this one market was exposed in 2017 when India introduced import quotas on pigeon peas and other pulses to protect its own farmers leading to a significant price collapse in Mozambique. Malawi has exported 75 percent of its pulses to India so is marginally less dependent on this one market compared to Mozambique but was still severely affected the change in Indian trade policy. By comparison, just 29 percent of Madagascar's pulse exports have been to India giving this country the most diverse export base for pulses of the main APEI+ exporters. Of further note, 7.1 percent of Madagascar's pulse exports were to Mauritius. Malawi has exported a small amount of pulses to Mauritius while Mozambique has not exported to Mauritius or Seychelles.

Table 19: Imports and exports of all types of pulses by trade partner**713 - Vegetables, dried leguminous; shelled, whether or not skinned or split (US\$ '000)**

Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Exports		Mozambique Exports		Zambia Exports	
Madagascar	2,567	Madagascar		Malawi		Madagascar	15	Madagascar	67	Madagascar	
Malawi	72	Malawi		Mauritius	2,567	Mauritius	72	Malawi	1,303	Malawi	15
Mozambique		Mauritius	2	Mozambique		Mozambique	48	Mauritius		Mauritius	
Seychelles	4	Mozambique		Seychelles		Seychelles		Seychelles		Mozambique	
Zambia		Zambia		Zambia		Zambia	104	Zambia	104	Seychelles	
Total non-APEI+	9,006	Total non-APEI+	932	Total non-APEI+	33,601	Total non-APEI+	44,019	Total non-APEI+	81,405	Total non-APEI+	771
Australia	4,582	Turkey	531	India	10,567	India	33,308	India	75,262	Zimbabwe	554
Canada	1,719	United Arab Emii	214	France	6,383	Zimbabwe	2,610	United Arab Emii	2,689	Angola	95
China	604	Singapore	87	Portugal	2,149	South Africa	2,251	South Africa	1,012	Swaziland	74
Myanmar	404	India	63	Pakistan	1,858	United Arab Emii	1,924	Zimbabwe	781	South Africa	24
India	281	United Kingdom	9	United Arab Emii	1,779	United Kingdom	1,462	Swaziland	518	Namibia	8
RoW	1,416	RoW	27	RoW	10,863	RoW	2,463	RoW	1,143	RoW	16
Total World	11,649	Total World	934	Total World	36,168	Total World	44,257	Total World	82,878	Total World	787
APEI+ share	22.7%	APEI+ share	0.2%	APEI+ share	7.1%	APEI+ share	0.5%	APEI+ share	1.8%	APEI+ share	1.9%

Source: UNCOMTRADE data (annual average values, 2012-17).

88. **In the long-run, the potential for increased exports of pulses to Mauritius is not limited by the size of the Mauritian domestic market.** Like the Mauritius stock feed industry grew from first supplying domestic users to become a regional export, potential exists for packaging and canning of pulses for export to neighboring Indian Ocean countries and beyond. From 2012-2017, Mauritius exported an

average US\$990,000 of vegetable preparations including US\$327,000 of canned beans made from imported raw material. Of canned bean exports, 98 percent went to Nigeria. Over the same period, Mauritius exported a further US\$584,000 of dry pulses that it imported from elsewhere for cleaning and consumer packaging in Mauritius. Of these dry pulse exports, 70 percent went to France, 13 percent to Zimbabwe, and 12 percent to the United Kingdom.

89. **Beyond the advantages of pulses for small producers, pulses also have several advantages from a trade perspective.** First, as dry commodities, pulses travel well and have relatively few SPS risks. Compared with cereal grains and oil cake, pulses also have a higher value to weight ratio so are better able to cover the costs of overland transport. Also, pulses are mostly traded by container load rather than by full vessel. At current import levels, in fact, Mauritius has little need or ability to absorb full vessel loads of any pulse or combination of pulses thereby putting African exporters on a more even footing from a transport point of view. Importers in the island nations further say that pulses typically arrive in bags which is ideal for exporters in mainland Africa to take advantage of inexpensive backload freight.

90. **There are presently several firms importing pulses to Mauritius both for dry packaging and for canning.** New Maurifoods Ltd. is part of the Eclasia Group and is a leading manufacturer of canned beans and vegetables. Managers say that production of canned beans has been growing by 20-30 percent in recent years. Sunny Food Canners is another large food manufacturer and is engaged in canning of butter beans, white beans, chickpeas, kidney beans, lentils, and other dry legumes that it imports from Madagascar, Australia, Canada, China, and elsewhere. Industry participants say that canned beans account for around five percent of the total bean market and dried beans 95 percent. Of canned pulses, red beans were said constitute 80 percent of market share. Other firms that import pulses for dry packaging include the Agriculture Marketing Board (AMB), JM Veerapen Ltd., Mahajan Overseas Ltd., and Super U, a retail supermarket.

91. **As with other parts of the food sector in Seychelles, most imports of pulses are handled by the STC and five or so other wholesalers that supply local supermarkets and the hospitality industry.** Many of these importers (including STC) also have their own retail business. Red split lentils are a favorite food of the local population and are the main type of pulse imported to Seychelles. More than 85 percent of lentils imported to Seychelles are red split lentils from Turkey that are said to have a unique taste and highly desirable texture. While APEI+ countries could grow red split lentils, provided they have access to the right seed, soil and climate conditions may still not give the same taste and texture as Turkish lentils so could be difficult to penetrate this specific market. Overall, 57 percent of all pulse imports by Seychelles are red split lentils from Turkey.

92. **Table 20 looks at the annual average import values of different types of pulses by Mauritius and Seychelles together with export values for the mainland APEI countries and Madagascar.** As shown pigeon peas are, by far, the largest pulse export for Malawi and Mozambique accounting for 82 percent and 84 percent of total pulse exports from these countries respectively. Pigeon peas also account for a large share of pulse imports by Mauritius and Seychelles but are not the leading product. For Mauritius, lentils, dried peas, and broad beans or lima beans are the three most important pulse imports in that order. For Seychelles, lentils are the most important followed by pigeon peas. Of the main APEI+ exporters, Madagascar trades the most diverse range of pulses with most exports falling in the category of dried beans and broad beans. In this category, Madagascar exports red kidney beans, red speckled kidney beans, white lima beans, white pea beans, and blackeye peas among others.

Table 20: Imports and exports of different types of pulses (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Pigeon peas						
071390 - n.e.c. in heading no. 0713 (pigeon peas)	2,059.5	158.6	619.4	37,324.0	67,536.2	52.7
Dried peas						
071310 - Dried peas	2,554.4	10.6	1,036.8	1,807.6	1,677.2	80.9
071320 - Chickpeas (garbanzos)	497.8	33.9	76.9	401.4	34.6	3.6
Dried beans and broad beans						
071331 - Black gram (<i>Vigna mungo</i>) and mung beans	42.8	39.3	2,645.0	1,809.8	10,794.0	268.8
071333 - Kidney beans, including white pea beans	992.1	13.7	9,674.3	688.4	426.3	85.1
071339 - n.e.c. of 0713.30 (other dry beans)	244.0	65.5	18,377.9	1,536.4	1,429.6	217.1
071350 - Broad beans and horse beans	2,299.2	2.5	2,111.7	27.6	28.5	0.1
Lentils						
071340 - Lentils	2,942.2	616.5	60.0	725.4	516.8	0.2
0713 - Total dried legumes; shelled (4-digit level)	11,649.1	941.2	36,167.9	45,573.1	82,878.1	786.5

Source: UNCOMTRADE data (annual average values, 2012-17).

93. **Table 13 looks more closely at the complementarity of imports and exports of APEI+ countries in pulses.** As for the analysis of stock feed and feed ingredients, commodities for which a mainland APEI country or Madagascar has a large trade surplus and for which at least one of the island nations has a large trade deficit have been highlighted. Potential exporters are shaded in beige and importers in blue. Opportunities for trade between the mainland countries have also been highlighted. As shown, the greatest opportunities for increased trade likely revolve around pigeon peas, dried peas, chickpeas, kidney beans, broad beans (i.e. lima beans) and, perhaps, lentils. SPS risks are all very similar for these commodities and is not difficult for farmers to switch from growing one type of pulse to another if they have the right seed.

Table 21: Balance of trade for different types of pulses (US\$ '000)

HS Description	Trade Balance (x-m)					
	MRU	SYC	MAD	MAL	MOZ	ZMB
Pigeon peas						
071390 - n.e.c. in heading no. 0713 (pigeon peas)	(2,040)	(159)	450	37,789	67,580	(47)
Dried peas						
071310 - Dried peas	(2,441)	(2)	(200)	(137)	1,552	(141)
071320 - Chickpeas (garbanzos)	(493)	(8)	41	400	(20)	(0)
Dried beans and broad beans						
071331 - Black gram (<i>Vigna mungo</i>) and mung beans	(23)	(39)	2,645	1,116	10,774	257
071333 - Kidney beans, including white pea beans	(901)	(10)	9,875	529	43	78
071339 - n.e.c. of 0713.30 (other dry beans)	(3)	(66)	19,247	1,342	1,194	(56)
071350 - Broad beans and horse beans	(2,299)	(3)	2,112	(18)	27	0
Lentils						
071340 - Lentils	(2,850)	(617)	19	721	500	(25)

Source: Calculated from UNCOMTRADE data (annual average values, 2012-17).

3.2.1. Pigeon peas

94. **Pigeon peas are grown almost entirely by smallholders and, until recently, have been a major export for both Mozambique and Malawi.** From 2012-2017, Mozambique exported an average of US\$67.5 million of pigeon peas annually with 97 percent of these exports going to India. Over the same period, Malawi exported US\$37.3 million pigeon peas annually with 86 percent going to India (see Table 22). For Mozambique, these pigeon pea exports were equal to 7.8 percent of all agri-food exports. For Malawi, pigeon peas contributed 4.4 percent of total agri-food exports. Madagascar is also a sizeable exporter of pigeon peas with about 17 percent of total exports going to India. Over the period covered,

in Mozambique and Malawi. A joint World Food Programme and International Growth Center policy note (WFP/IEG, 2018), for instance, reports that the loss of the Indian market for pigeon peas led farm gate prices in Mozambique to fall from as much as MZN 50/kg (US\$0.83) in 2016 to only MZN 5/kg (US\$0.08) in 2017. In 2017, Mozambique's quota was set at just 120,000 tons. This was increased to 150,000 tons in 2018 but traders say they had previously supplied two to three times as much so now have large unsold stocks sitting on hand. Moreover, ETG had invested in processing facilities for splitting of pigeon peas that it says will no longer be viable with quota limitations.

98. **The situation is even more difficult in Malawi, which did not receive any pigeon pea quota from India meaning there is almost no market for its product.** Traders in Lilongwe and Blantyre say that pigeon peas do sometimes cross to Mozambique for re-export as a Mozambican product, but these opportunities are extremely limited to the point where prices in Malawi are now even lower than in Mozambique. To cope with the change in Indian trade policy, the WFP/IGC (2018) paper recommended promoting local consumption of pigeon peas and identification of new export markets.

99. **Bearing in mind that Mauritius is only a tiny market compared with India, it does offer some potential as a new export destination for pigeon peas and other pulses.** Not only is Mauritius a large consumer of pulses per capita, but there is a well-established processing industry with capacity to hull, split, and package or can pigeon peas and other pulses for re-export to regional markets and beyond. As shown in Table 22 most pigeon peas imported to Mauritius are from Australia. Given that pulses are naturally suited to non-mechanized production, however, Mozambique and Malawi should be in a strong position to compete on quality and price. In 2016, cif prices in Port Louis reached US\$1,828 per ton compared with US\$830/ton at the farmgate in Mozambique. Global prices were much lower in 2017 following the change in Indian trade policy and only peaked at US\$1,046 per ton in Port Louis. This drop, however, will have put just as much if not more pressure on mechanized farmers in Australia potentially strengthening the competitive position of African smallholders. Malawi has already exported some pigeon peas to Mauritius and the main SPS requirements for pulses involve fumigation and very basic hygiene so are not difficult to meet.

100. **An even better solution for Malawi and Mozambique could be to switch to growing a more diverse range of pulses.** Traders in mainland countries were remarkably successful in promoting pigeon peas from almost zero production to become a major export crop in a short period time. Provided farmers have access to the right kind of seed, it is not difficult to switch from one pulse to another and the same networks that were used to promote production and assembly of pigeon peas could easily be used for other pulses. Compared with Mozambique, Malawi already grows a more diverse range of pulses which is an advantage in developing new supply relations, especially with small market economies like Mauritius where there is limited demand for any one type of pulse.

3.2.2. Dried beans

101. **Dry beans and broad beans are the main pulses exported by Madagascar.** As shown above in Table 20, this category of pulses has generated more than US\$32.8 million of export revenue annually for Madagascar, equal to almost 91 percent of annual export revenue from pulses. Around 33 percent of these dry bean exports have gone to France, Portugal, and other EU countries. 32 percent of Madagascar's dry bean exports have gone to India, and 8 percent have gone to Mauritius. Details of imports and exports of different types of dry bean and broad beans by trade partner are provided in Table 23 (parts a to d) where data for net exporters are shaded in blue and data for importers are in beige. As shown, the main type of dry bean exported from Madagascar falls under HS code 071339 which includes black spot beans also known as blackeye peas or cowpeas. Most of these beans go to India and the EU. The main bean

exported by Madagascar to Mauritius are red and white lima beans which fall under HS classification 071350. None of these pulses are subject to Indian import quotas.

Table 23: Imports and exports of dried beans and broad beans by trade partner

(a) Black gram and mung beans

71331 - Vegetables, leguminous; beans of the species vigna mungo (l.) hepper or vigna radiata (l.) wilczek, dried, shelled, whether or not skinned or split (US\$ '000)

Island nations		Mainland and Madagascar					
Mauritius Imports	Seychelles Imports	Madagascar Exports	Malawi Exports	Mozambique Exports	Zambia Exports		
APEI+ Total	13	APEI+ Total	13	APEI+ Total	11	APEI+ Total	
Madagascar	Madagascar	Malawi	Madagascar	Madagascar	Madagascar	Madagascar	
Malawi	Malawi	Mauritius	Mauritius	Malawi	Malawi	Malawi	
Mozambique	Mauritius	Mozambique	Mozambique	Mauritius	Mauritius	Mauritius	
Seychelles	Mozambique	Seychelles	Seychelles	Seychelles	Seychelles	Mozambique	
Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Seychelles	
Total non-APEI+	30	Total non-APEI+	2,597	Total non-APEI+	1,761	Total non-APEI+	10,672
Myanmar	Singapore	India	Zimbabwe	India	India	Zimbabwe	Zimbabwe
Australia	United Arab Emira	Pakistan	South Africa	United Arab Emir	United Arab Emir	Swaziland	Swaziland
Thailand	Turkey	United Kingdom	India	South Africa	South Africa	Namibia	Namibia
United States	India	United Arab Emiri	United Arab Emiri	Swaziland	Swaziland	Netherlands	Netherlands
India	Peru	Indonesia	Botswana	Nepal	Nepal		
RoW	RoW	RoW	RoW	RoW	RoW		
Total World	43	Total World	2,610	Total World	1,762	Total World	10,683
APEI+ share	29.9%	APEI+ share	0.2%	APEI+ share	0.5%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

(b) Red and white kidney beans and white pea beans

71333 - Vegetables, leguminous; kidney beans, including white pea beans (phaseolus vulgaris), dried, shelled, whether or not skinned or split (US\$ '000)

Island nations		Mainland and Madagascar					
Mauritius Imports	Seychelles Imports	Madagascar Exports	Malawi Exports	Mozambique Exports	Zambia Exports		
APEI+ Total	251	APEI+ Total	247	APEI+ Total	19	APEI+ Total	
Madagascar	Madagascar	Malawi	Madagascar	Madagascar	Madagascar	Madagascar	
Malawi	Malawi	Mauritius	Mauritius	Malawi	Malawi	Malawi	
Mozambique	Mauritius	Mozambique	Mozambique	Mauritius	Mauritius	Mauritius	
Seychelles	Mozambique	Seychelles	Seychelles	Seychelles	Seychelles	Mozambique	
Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Seychelles	
Total non-APEI+	741	Total non-APEI+	9,427	Total non-APEI+	649	Total non-APEI+	423
China	United Arab Emira	France	India	South Africa	South Africa	Angola	Angola
Myanmar	United States	Pakistan	South Africa	Swaziland	Swaziland	Zimbabwe	Zimbabwe
United States	Thailand	Portugal	Singapore	Portugal	Portugal	South Africa	South Africa
Kenya	Italy	Spain	Pakistan	India	India	United States	United States
Argentina	Argentina	India	Zimbabwe	Zimbabwe	Zimbabwe	Namibia	Namibia
RoW	RoW	RoW	RoW	RoW	RoW		
Total World	992	Total World	9,674	Total World	668	Total World	423
APEI+ share	25.3%	APEI+ share	2.6%	APEI+ share	2.9%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

(c) Other beans including blackspot beans (blackeye peas/cowpeas)

71339 - Vegetables, leguminous; n.e.c. in item no. 0713.30, dried, shelled, whether or not skinned or split (US\$ '000)

Island nations		Mainland and Madagascar									
Mauritius Imports	Seychelles Imports	Madagascar Exports		Malawi Exports		Zambia Imports					
APEI+ Total	158	APEI+ Total	158	APEI+ Total	31	APEI+ Total	18	APEI+ Total	27		
Madagascar	158	Madagascar		Madagascar	15	Madagascar		Madagascar			
Malawi		Malawi	158	Mauritius		Malawi		Malawi	5		
Mozambique		Mauritius		Mozambique	11	Mauritius		Mauritius			
Seychelles		Mozambique		Seychelles		Seychelles		Mozambique	22		
Zambia		Seychelles		Zambia	4	Zambia	18	Seychelles			
Total non-APEI+	86	Total non-APEI+	64	Total non-APEI+	18,220	Total non-APEI+	1,484	Total non-APEI+	1,388	Total non-APEI+	246
Tanzania	27	United Arab Emirs	35	India	7,927	India	600	India	984	Zimbabwe	124
Bangladesh	10	Singapore	16	France	1,540	South Africa	414	South Africa	175	South Africa	121
India	10	India	9	United Arab Emirs	1,391	Zimbabwe	343	Swaziland	98	China	1
Argentina	7	France	1	Turkey	1,366	Malaysia	40	Portugal	58	Egypt, Arab Rep.	
Canada	7	Turkey	1	Portugal	1,175	Botswana	22	Zimbabwe	26		
RoW	25	RoW	2	RoW	4,821	RoW	64	RoW	48	RoW	
Total World	244	Total World	65	Total World	18,378	Total World	1,515	Total World	1,407	Total World	273
APEI+ share	64.6%	APEI+ share	0.5%	APEI+ share	0.9%	APEI+ share	2.0%	APEI+ share	1.3%	APEI+ share	10.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

(d) Broad beans and horse beans (red and white lima beans, speckled lima beans)

71350 - Vegetables, leguminous; broad beans (vicia faba var. major) and horse beans (vicia faba var. equina and vicia faba var. minor), dried, shelled, whether or not skinned or split (US\$ '000)

Island nations		Mainland and Madagascar									
Mauritius Imports	Seychelles Imports	Madagascar Exports		Malawi Imports		Zambia Exports					
APEI+ Total	2,053	APEI+ Total	2,053	APEI+ Total		APEI+ Total		APEI+ Total			
Madagascar	2,053	Madagascar		Madagascar		Madagascar		Madagascar			
Malawi		Malawi	2,053	Mauritius		Malawi		Malawi			
Mozambique		Mauritius		Mozambique		Mauritius		Mauritius			
Seychelles		Mozambique		Seychelles		Seychelles		Mozambique			
Zambia		Seychelles		Zambia		Zambia		Seychelles			
Total non-APEI+	247	Total non-APEI+	2	Total non-APEI+	59	Total non-APEI+	45	Total non-APEI+	28	Total non-APEI+	
United States	123	United Arab Emirs	1	India	51	United States	45	India	22	Namibia	
Myanmar	107	India	1	Qatar	3	Canada		Swaziland	7		
Canada	17	France		Belgium	1	Lebanon					
China		Egypt, Arab Rep.		France	1						
France		Sri Lanka		Bahrain	1						
		RoW		RoW	2						
Total World	2,299	Total World	3	Total World	2,112	Total World	45	Total World	28	Total World	
APEI+ share	89.3%	APEI+ share	5.9%	APEI+ share	97.2%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

102. **Bean traders in Antananarivo said that domestic markets are sometimes more profitable than exporting to Mauritius but also saw good potential for increased trade.** The Indian Ocean Trading Society (*Société Trading de l'Océan Indien*, STOI), for example, reported that it has been supplying lima beans, blackeye peas, mung beans, and white pea beans to JM Veerapen in Mauritius for many years. For about the past three years, STOI said local prices for white pea beans have been more attractive than in Mauritius but that prices for other beans still make exports attractive. To maintain its position in the Mauritian market, therefore, STOI has continued to supply a limited number of containers of white pea beans to Mauritius each year together with other beans that it says are more profitable. Looking forward, STOI said that recent exchange rate movements have made the Mauritian market more profitable so may agree to direct more white pea beans to Mauritius.

103. **The main obstacle traders saw in increasing bean exports to Mauritius was limited availability of quality seed.** Not only does the lack of reliable seed limit total production, but this also gives rise to problems with variations in size, shape, and color that result in price reductions in international markets. Madagascar is participating in the COMESA and SADC regional efforts to harmonize rules for seed trade but has made little progress with the implementation of agreed protocols and still requires a minimum of 2-3 years of domestic field trials for any new variety to be introduced. Zambia and Malawi both have advanced capacity in seed research and multiplication by African and international standards. Accelerated dialogue on the regional seed reforms could therefore be an excellent area for cooperation between APEI countries and to explore public and private investment opportunities in seed trade.

3.2.3. Conclusions – pulses

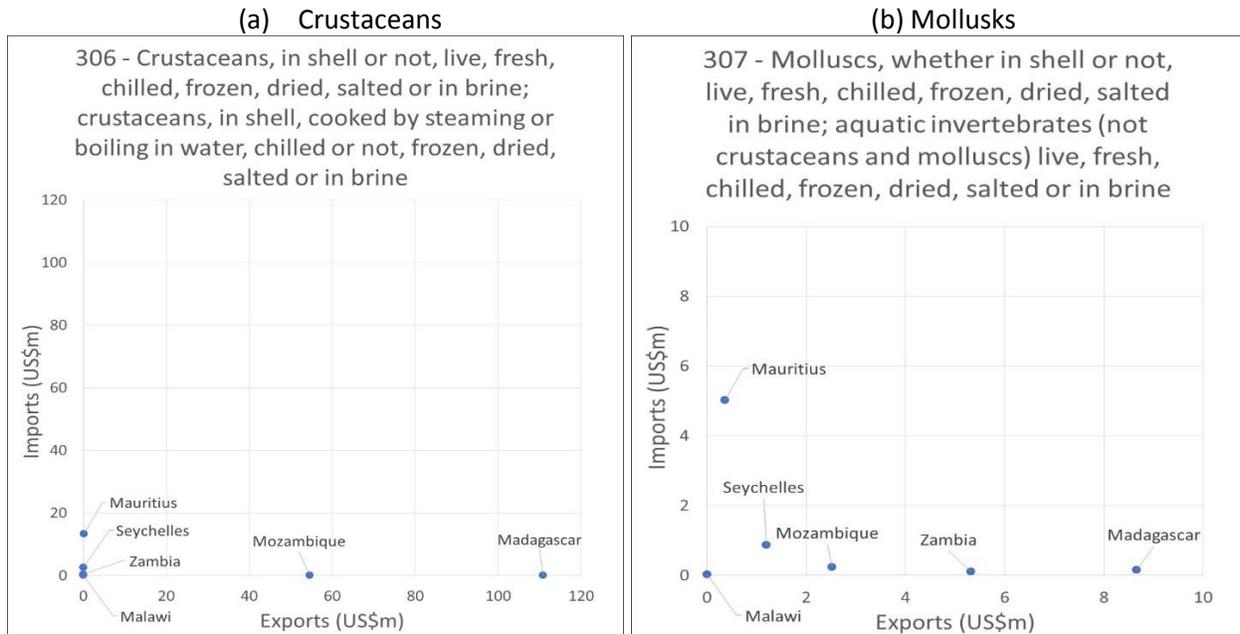
104. **Although Mauritius and Seychelles are only small markets for pulses compared with massive production in the mainland countries and Madagascar, this could be a good area for trade expansion.** Mauritius and Seychelles are both large pulse consumers for their size and growth in the Mauritian food processing industry could fuel further demand for pigeon peas, dry beans, and other types of pulses. The market in Seychelles revolves mainly around one type of lentil grown in Turkey but there are other opportunities for mainland APEI countries and Madagascar to displace dry bean and pigeon pea imports from other countries in this market. SPS requirements are relatively straightforward with pulses and the value to weight ratios for these commodities are higher than for bulk grains and oil-cake.

105. **While economies of scale matter, the competitiveness of mainland APEI countries and Madagascar in global pulse markets depends on the ability of pulse exporters to grow a variety of pulses and switch between pulse crops according to market demand.** The weakness of Malawi and Mozambique relying on one market for one specific type of pulse was exposed in dramatic fashion with the introduction of import quotas by India. All global producers suffered, but in Madagascar the experience with pulses has been more positive because of producing many different pulses for different export markets. Rather than the loss of the Indian market, traders in Madagascar said the biggest constraint to the pulse sector there is access to quality seed. Access to new varieties is also a challenge in Malawi and Mozambique and would be a good area for cooperation between APEI+ countries. All APEI+ countries are party to the SADC Regional Seed Agreement and accelerated implementation of the agreed rules for variety release and seed certification could be a direct benefit to regional pulse trade.

3.3. High-value seafood

106. **Mauritius and Seychelles rely on imports of prawns, lobster, crab, and other specialty types of seafood.** Both countries are large exporters of tuna and other fish but are not big producers of crustaceans or mollusks. With the growth of tourism and rising incomes in both countries, demand for these higher-end foods has been increasing. Crustaceans including prawns, lobster, and crab, and mollusks including octopus, cuttlefish, and squid are large exports for Mozambique and Madagascar suggesting a good potential for trade complementarity between these APEI+ countries (see Chart 16).¹⁰

¹⁰ As shown in the chart, Zambia is also a large exporter of mollusks. At the 6-digit level, these exports fall under HS code 030799 (Mollusks and other aquatic invertebrates; frozen, dried, salted or in brine (whether in shell or not), n.e.c. in heading no. 0307) and could be freshwater mollusks harvested from one of Zambia's many lakes or a misclassification. This HS heading also covers flours and meals made of mollusk shells.

Chart 16: Trade complementarity in (a) crustaceans and (b) mollusks

Source: UNCOMTRADE data (annual average values, 2012-17)

107. **Table 24 looks more closely at the imports and exports of these commodities by trade partner.** Significantly for the prospects of market access to the island nations, these data show that most crustacean and mollusk exports from Madagascar and Mozambique go to EU countries where there are strict food safety requirements. Exporters who supply these markets must have full Hazard Analysis and Critical Control Point (HACCP) certification and are regularly subjected to audit by international inspectors. National SPS systems for food safety certification are also subjected to European audit. All seafood exports from Mozambique are certified by the National Institute for Fish Inspection (INIP) which has labs in Maputo, Beira, and Quelimane that are inspected by EU authorities on a regular basis.

Table 24: Imports and exports of (a) crustaceans and (b) mollusks by trade partner**(a) Crustaceans (all types)**

306 - Crustaceans, in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or boiling in water, chilled or not, frozen, dried, salted or in brine (US\$ '000)

Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Imports		Mozambique Exports		Zambia Imports	
Madagascar	1,412	Madagascar	2	Malawi		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius	1,412	Mauritius		Malawi		Malawi	
Mozambique	10	Mauritius		Mozambique		Mozambique		Mauritius	10	Mauritius	
Seychelles	1	Mozambique		Seychelles	2	Seychelles		Seychelles		Mozambique	9
Zambia		Zambia		Zambia		Zambia		Zambia	7	Seychelles	
Total non-APEI+	11,866	Total non-APEI+	2,419	Total non-APEI+	109,385	Total non-APEI+	89	Total non-APEI+	52,616	Total non-APEI+	406
India	8,536	United Arab Emiri	890	France	85,736	South Africa	88	Portugal	21,224	South Africa	345
Bangladesh	1,043	India	685	China	10,734	India	1	China	10,155	Tanzania	25
Indonesia	520	France	173	Japan	3,940	Tanzania		Spain	9,978	Namibia	16
Singapore	415	Belgium	151	Spain	3,631	China		South Africa	4,459	India	14
United Arab Emiri	294	Netherlands	139	Portugal	3,077	Other Asia, nes		Japan	2,466	China	4
RoW	1,058	RoW	380	RoW	2,267	RoW		RoW	4,333	RoW	3
Total World	13,289	Total World	2,422	Total World	110,800	Total World	89	Total World	52,633	Total World	414
APEI+ share	10.7%	APEI+ share	0.1%	APEI+ share	1.3%	APEI+ share	0.1%	APEI+ share	0.0%	APEI+ share	2.1%

Source: UNCOMTRADE data (annual average values, 2012-17).

(b) Mollusks (all types)

307 - Molluscs, whether in shell or not, live, fresh, chilled, frozen, dried, salted in brine; aquatic invertebrates (not crustaceans and molluscs) live, fresh, chilled, frozen, dried, salted or in brine (US\$ '000)

Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Imports		Mozambique Exports		Zambia Imports	
Madagascar	1,544	Madagascar	0	Malawi		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius	1,544	Mauritius		Malawi		Malawi	
Mozambique		Mauritius		Mozambique		Mozambique		Mauritius		Mauritius	
Seychelles		Mozambique		Seychelles		Seychelles		Seychelles		Mozambique	
Zambia		Zambia		Zambia		Zambia		Zambia		Seychelles	
Total non-APEI+	3,479	Total non-APEI+	813	Total non-APEI+	7,120	Total non-APEI+	21	Total non-APEI+	2,484	Total non-APEI+	109
China	1,300	United Arab Emiri	210	France	3,233	South Africa	13	Hong Kong, Chin:	1,129	South Africa	89
India	445	China	208	Hong Kong, Chin:	2,392	Zimbabwe	7	Portugal	576	China	12
Indonesia	204	France	139	Canada	650	China		Italy	317	Namibia	7
France	183	Belgium	68	Italy	422	India		Japan	271	Thailand	1
New Zealand	172	United States	67	Portugal	253	Vietnam		Thailand	100	Spain	0
RoW	1,174	RoW	121	RoW	170	RoW		RoW	91	RoW	1
Total World	5,023	Total World	814	Total World	8,664	Total World	21	Total World	2,484	Total World	109
APEI+ share	30.7%	APEI+ share	0.1%	APEI+ share	17.8%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

108. The prospects for increased trade with the island nations in these seafood products depends primarily on the relative profitability of selling to Mauritius and Seychelles compared with larger markets where most exports currently go. A recent and very serious outbreak of white spot disease in Madagascar notwithstanding, exporters in both Madagascar and Mozambique said their main challenge is not so much SPS factors or lack of market outlets but is rather to supply large enough volumes in markets where they are already established. Prawns in Madagascar are farmed on an industrial scale mostly under contract with buyers in France. A small exporter of wild-caught artisanal products (lobsters, crab, octopus, grouper, etc.) likewise said his firm stopped exporting to Mauritius because prices are higher in Europe and Asia and because these markets have greater potential for growth.

109. Prawns in Mozambique are almost entirely wild-caught and have an excellent reputation in the world market as a premium product. Prices are correspondingly high at up to US\$25/kg fob Beira for the largest prawns to around \$12.00/kg for medium sizes and US\$3.00/kg for small against a minimum order

of 5 tons. By comparison, average cif prices in Port Louis for farmed prawns from India and Bangladesh range from US\$6.50 to US\$9.00 per kilo. Importers in Mauritius said there are a small number of buyers willing to pay premium prices for a distinctly superior product, especially during the holiday season, but cautioned that most buyers, including large hotels, are highly sensitive to price.

110. **Although Mozambican exporters said that supply constraints are a bigger challenge than lack of export markets, each firm did express a strategic interest in Mauritius and Seychelles.** Exporters all said the industry is constantly looking to raise awareness of the high quality of Mozambican prawns and other seafood products. Despite the supply constraints, they said it would not be difficult to ship two or three containers of mixed seafood products to Mauritius or Seychelles where it could be marketed to the tourist industry and high-end retailers. Given the large number of foreign visitors to Mauritius and Seychelles, they said that with branding this could be as much a way of raising the profile of their product in Europe and Asia as in the island nations themselves.

111. **There are many small firms that import prawns and other seafood products to Mauritius.** Large food importers such as The Innodis Group (which is also the major shareholder of Meaders feeds) and Panagoria Foods (which is part of Ecloxia) primarily handle branded products that are sold in supermarkets. These firms mainly deal in mass-market frozen fish sticks and fish fillets but do sometimes handle the type of higher-end products exported by Madagascar and Mozambique. More specialized seafood products including frozen and live prawns, lobster, and octopus, are also imported by around 10-12 smaller wholesalers who sell to hotels, grocery stores, and other retail outlets.

112. **The situation is very similar in Seychelles where STC and other wholesalers primarily deal with internationally branded products that are mainly traded on price.** Specialty importers such as ISPC that serve the hospitality industry, however, do also import seafood and said there is a growing market for high-quality crustaceans and mollusks. ISPC said that medium size (16-20 count per kg), head-on prawns are the main type of prawn it imports which falls squarely in the middle of the range exported by Mozambique. Prawns in this category sell for US\$16.00/kg fob Beira. ISPC said that it imports 25-30 tons of 16-20 count prawn per year plus 10-12 tons of smaller prawns, peeled prawns, and lobster. Like Mauritius, average cif prices for prawns in Seychelles range from about US\$6.50/kg to US\$9.00/kg indicating that the competitiveness of the Mozambican product depends on niche branding and targeting of high-end consumers.

113. **Table 25 summarizes the total import and exports values of different types of crustaceans and mollusks by APEI+ countries.** Of the crustaceans, frozen shrimps and prawns account for about two-thirds of import value in each country. Of the mollusks, both Mauritius and Seychelles import somewhat more cuttlefish and squid by value than octopus.

Table 25: Imports and exports of different types of (a) crustaceans and (b) mollusks (US\$ '000)**(c) Crustaceans**

HS Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
306 - Crustaceans (all types and forms)	13,289.1	2,541.4	110,799.5	0.1	54,609.3	2.0
Shrimps and prawns						
30613 - Shrimps and prawns, frozen	8,974.6	1,573.1	91,755.9	0.0	42,101.6	0.0
30623 - Shrimps and prawns, not frozen	846.6	62.0	279.0	0.0	142.3	0.9
Lobster						
30611 - Rock lobsters and other sea crawfish, frozen	661.5	55.3	4,738.0	-	4,717.4	-
30612 - Lobsters (homarus spp.), frozen	1,895.6	606.8	59.0	0.0	729.1	0.0
30621 - Rock lobster and other sea crawfish, not frozen	42.5	16.2	656.3	-	1,356.0	0.6
Crab						
30614 - Crabs, frozen	506.5	152.5	4,167.3	0.0	1,247.0	0.1

(d) Mollusks

HS Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
307 - Mollusks (all types and forms)	5,022.8	873.4	8,664.3	0.0	2,524.7	5,315.3
Cuttle fish and octopus						
30749 - Cuttle fish and squid, frozen, dried, salted	1,981.9	357.7	262.7	-	166.2	0.0
30759 - Octopus, frozen, dried, salted	1,672.0	64.1	5,104.8	-	661.4	0.0

Source: UNCOMTRADE data (annual average values, 2012-17)

114. **Table 26 looks more closely at the trade balances of APEI+ countries in crustaceans and mollusks.** As in other such tables, commodities for which a mainland APEI country or Madagascar has a large trade surplus and for which at least one of the island nations has a large trade deficit have been highlighted. Potential exporters are shaded in beige and importers in blue. While Mozambique and Madagascar are both moderately large net exporters of live lobster, this is not a major import for either Mauritius or Seychelles. Rather, frozen shrimp, frozen prawns, and frozen lobster plus cuttlefish, squid, and octopus likely offer the best scope for increased export of crustaceans and mollusks to the island nations. Malawi is only a small importer all selected products while Zambia is a moderately large importer of frozen shrimp and prawns.

Table 26: Balance of trade for different types of crustaceans and mollusks (US\$ '000)**(a) Crustaceans**

HS Description	Trade Balance (x-m)					
	MRU	SYC	MAD	MAL	MOZ	ZMB
306 - Crustaceans (all types and forms)	(13,194.7)	(2,497.9)	110,687.2	(89.3)	54,484.4	(412.5)
Shrimps and prawns						
30613 - Shrimps and prawns, frozen	(8,946.4)	(1,573.1)	91,658.9	(61.2)	42,059.9	(306.8)
30623 - Shrimps and prawns, not frozen	(846.6)	(62.0)	279.0	(15.9)	119.6	0.9
Lobster						
30611 - Rock lobsters and other sea crawfish, frozen	(661.5)	(54.2)	4,735.6	(5.6)	4,715.1	(13.8)
30612 - Lobsters (homarus spp.), frozen	(1,895.6)	(606.8)	59.0	(0.7)	728.1	(4.3)
30621 - Rock lobster and other sea crawfish, not frozen	(41.9)	(15.8)	656.3	-	1,355.4	(9.1)
Crab						
30614 - Crabs, frozen	(506.5)	(139.1)	4,154.9	(1.7)	1,238.4	(12.6)

(b) Mollusks

HS Description	Trade Balance (x-m)					
	MRU	SYC	MAD	MAL	MOZ	ZMB
307 - Mollusks (all types and forms)	(4,660.0)	326.2	8,516.2	(20.7)	2,282.2	5,205.5
Cuttle fish and octopus						
30749 - Cuttle fish and squid, frozen, dried, salted	(1,953.3)	(357.7)	237.4	(1.4)	68.5	(29.8)
30759 - Octopus, frozen, dried, salted	(1,583.7)	(62.7)	5,103.5	-	642.9	(9.4)

Source: Calculated from UNCOMTRADE data (annual average values, 2012-17).

3.3.1. Prawns and shrimp

115. **Mozambique and Madagascar both export high quality prawns that have excellent reputations in the international market.** Though often spoken of interchangeably, prawns and shrimp are a distinct species.¹¹ From a culinary perspective the two have a very similar taste where the main difference is between wild-caught and farmed with wild-caught generally having a more intense flavor. By value, Madagascar exports roughly twice as many prawns as Mozambique. Most prawns from Madagascar are farm-raised and sell for slightly less per kg compared with Mozambique prawns which are wild-caught. Prawns rank as the third most valuable agri-food export for Madagascar and seventh most valuable agri-food export for Mozambique. More than 99 percent of all prawns exported from both countries are shipped by container as frozen product. In Mozambique, most prawns are caught in shallow waters off the central coast roughly from Quelimane to Beira. Prawn farming in Madagascar is spread along the northwest coast roughly from Mahajanga to Ambanja.

116. **The trade data for frozen prawns by APEI+ trade partner are presented in Table 27.** As show most shrimp and prawns imported to Mauritius are from India and Bangladesh. For Seychelles, most imports are from India and the UAE. The UAE is not a major producer of prawns but is home to many well-established fish wholesalers who source product from around the world for onward distribution by air and sea through Dubai. Over the period covered, Seychelles imported a trace amount of prawns from

¹¹ Both prawns and shrimp are decapod crustaceans meaning they have ten legs and an exoskeleton. Prawns, however, have branching gills and pinchers on the first three pairs of legs whereas shrimp have plate-like gills and pinchers on the first two pair of legs only. Prawns also have a distinct bend in their body and release eggs into the water whereas shrimp have no distinct bend and brood eggs on the underside of their body.

Madagascar while Mauritius imported US\$678,000 of prawns from Madagascar and a small amount also from Mozambique.

Table 27: Imports and exports of frozen prawns by trade partner

30613 - Crustaceans; shrimps and prawns, frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water) (US\$ '000)

Island nations				Mainland and Madagascar			
Mauritius Imports		Seychelles Imports		Madagascar Exports		Zambia Imports	
APEI+ Total		APEI+ Total		APEI+ Total		APEI+ Total	
Madagascar	678	Madagascar	1	Malawi		Madagascar	
Malawi		Malawi		Mauritius	678	Malawi	
Mozambique	10	Mauritius		Mozambique		Mauritius	10
Seychelles		Mozambique		Seychelles	1	Seychelles	
Zambia		Zambia		Zambia		Zambia	2
Total non-APEI+	8,287	Total non-APEI+	1,466	Total non-APEI+	91,077	Total non-APEI+	40,197
India	6,213	India	460	France	80,209	South Africa	60
Bangladesh	1,043	United Arab Emi	401	Spain	3,562	India	1
Thailand	224	Netherlands	133	Portugal	3,062	Tanzania	
Indonesia	223	Belgium	132	China	1,512	China	4,514
Vietnam	169	France	110	Japan	1,491	Japan	2,357
RoW	415	RoW	230	RoW	1,241	South Africa	2,096
						RoW	2,656
Total World	8,975	Total World	1,467	Total World	91,756	Total World	61
APEI+ share	7.7%	APEI+ share	0.1%	APEI+ share	0.7%	APEI+ share	0.0%
						APEI+ share	0.0%
						APEI+ share	0.8%

Source: UNCOMTRADE data (annual average values, 2012-17).

117. **As noted, limited supply of prawns is regarded as a bigger constraint to Mozambican exports than market development.** Commercial fishers claim that over-catching and poor management of estuaries by artisanal producers has caused the industry to decline. As recently as the late 1990s, they say there were 87 large industrial vessels fishing catching up to 8,000 tons of prawns per year but are now just 37 large vessels catching only 3,500 tons per year. In addition to industrial vessels with on-board freezing capacity, there are large number of semi-industrial vessels that use ice to preserve the catch before freezing on shore. Owner-operators in the semi-industrial sector also say the catch has declined due to over-fishing. Industrial and semi-industrial producers adhere to strict hygiene and record keeping systems to meet EU food safety and other international trade requirements.

118. **By far the greatest number of prawns in Mozambique are caught by artisanal producers but cannot be exported formally.** According to government officials, there are many thousands artisanal producers who together catch around 6,000 tons of prawns per year. Very few of these producers are registered or able to meet sanitary requirements of export markets. Ice supply is limited resulting in high product losses. Much of the catch from this sector is reportedly smuggled to Zimbabwe and other neighboring countries for a fraction of the price received by formal exporters.

119. **One model for improving the artisanal sector comes from a semi-industrial producer in Beira.** To augment this firm's own catch, the company has developed a system of registration and testing of artisanal boats. Producers are provided with ice made from clean water according to EU standards and, through regular inspections and record keeping, there is full traceability back to the individual producer allowing the prawns to be exported to Europe. Other than prawns, this firm exports octopus, lobster, calamari, cuttlefish, and crab. Similar systems for collecting seafood from artisanal producers also exist in Madagascar.

3.3.2. Lobster

120. **Madagascar and Mozambique export frozen lobster under two HS headings.** Heading 030611 covers the Natal Spiny Lobster (*Palinurus delagoae*) that is found in shallow waters of the Mozambique Channel that separates Mozambique and Madagascar and is the main type lobster exported by both countries. Heading 036012 covers another type of spiny lobster (*Panulirus Homarus*) that is found in deep waters. Table 28 show that Mauritius and Seychelles primarily import deep water lobster while Madagascar and Mozambique mainly export shallow water lobster. From a culinary point of view, the two types of spiny lobster are interchangeable and sell for a similar price indicating a good potential for product substitution provided constraints around transport costs and product prices can be overcome.

Table 28: Imports and exports of frozen lobster by trade partner

(a) Shallow water spiny lobster (Natal spiny lobster)

30611 - Crustaceans; rock lobsters and other sea crawfish (palinurus spp., panulirus spp., jасus spp.), frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water) (US\$ '000)

Island nations			Mainland and Madagascar				
Mauritius Imports	Seychelles Imports		Madagascar Exports	Malawi Imports	Mozambique Exports	Zambia Imports	
APEI+ Total	156	APEI+ Total	APEI+ Total 156	APEI+ Total	APEI+ Total 5	APEI+ Total 6	
Madagascar	156	Madagascar	Malawi	Madagascar	Madagascar	Madagascar	
Malawi		Malawi	Mauritius 156	Mauritius	Malawi	Malawi	
Mozambique		Mauritius	Mozambique	Mozambique	Mauritius	Mauritius	
Seychelles		Mozambique	Seychelles	Seychelles	Seychelles	Mozambique 6	
Zambia		Zambia	Zambia	Zambia	Zambia 5	Seychelles	
Total non-APEI+	505	Total non-APEI+	Total non-APEI+	Total non-APEI+	Total non-APEI+	Total non-APEI+	
		55	4,582	6	4,615	8	
India	427	India	51	Japan	2,449	South Africa	8
Singapore	38	United Arab Emi	2	France	2,078	China	1,129
Kenya	18	United Kingdom	1	Other Asia, nes	54	South Africa	1,119
Vietnam	13	France	1	Oman		Spain	255
China	4	Tanzania	1	Korea, Rep.		Italy	252
RoW	6	RoW		RoW		RoW	177
Total World	662	Total World	55	Total World	4,738	Total World	6
APEI+ share	23.6%	APEI+ share	0.0%	APEI+ share	3.3%	APEI+ share	0.0%
							0.1%
							44.6%

Source: UNCOMTRADE data (annual average values, 2012-17).

(b) Deep water spiny lobster

30612 - Crustaceans; lobsters (homarus spp.), frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water) (US\$ '000)

Island nations			Mainland and Madagascar				
Mauritius Imports	Seychelles Imports		Madagascar Exports	Malawi Imports	Mozambique Exports	Zambia Imports	
APEI+ Total	57	APEI+ Total	APEI+ Total 58	APEI+ Total	APEI+ Total	APEI+ Total	
Madagascar	57	Madagascar	Malawi	Madagascar	Madagascar	Madagascar	
Malawi		Malawi	Mauritius 57	Mauritius	Malawi	Malawi	
Mozambique		Mauritius	Mozambique	Mozambique	Mauritius	Mauritius	
Seychelles		Mozambique	Seychelles	Seychelles	Seychelles	Mozambique	
Zambia		Zambia	Zambia	Zambia	Zambia	Seychelles	
Total non-APEI+	1,838	Total non-APEI+	Total non-APEI+	Total non-APEI+	Total non-APEI+	Total non-APEI+	
		600	1	1	702	4	
India	1,304	United Arab Emir	1	South Africa	1	China	277
United Arab Emi	237	India	113			South Africa	151
Singapore	118	Oman	13			United Arab Emi	140
Australia	76	United States	12			Australia	61
Vietnam	40	Kenya	12			United States	36
RoW	62	RoW	32			RoW	38
Total World	1,896	Total World	601	Total World	1	Total World	702
APEI+ share	3.0%	APEI+ share	0.1%	APEI+ share	0.0%	APEI+ share	0.0%
							3.6%

Source: UNCOMTRADE data (annual average values, 2012-17).

121. **Together, these data for frozen lobster show the market in Mauritius is worth around US\$2.56 million annually and US\$656,000 per year in Seychelles.** Madagascar currently supplies US\$213,000 of frozen lobster to Mauritius annually. Seafood traders in Port Louis said there were some lobster imports from Mozambique in the early 2000s. Seychelles imports no more than a trace amount of lobster from APEI+ countries and mostly buys product that is transshipped through the United Arab Emirates. Average cif prices in Port Louis for frozen lobster were around US\$17-18/kg in 2016 but fell by 10-25 percent in 2017 to US\$12-17/kg.

122. **Other than frozen lobster, Madagascar and Mozambique also export considerable amounts of fresh (live) lobster.** Details of this trade are summarized in Table 29 and show that most exports from Madagascar and Mozambique go to China with smaller amounts going to Hong Kong and South Africa. Mauritius and Seychelles are only small importers of live lobster and, what they do buy, mainly comes from India. For live exports from APEI+ countries to be possible, reliable airlinks would be required. This is more likely from Madagascar where there are several direct flights to Mauritius with connections to Seychelles. From Mozambique, fresh exports would most likely have to be routed through Johannesburg, Nairobi, or Addis Ababa.

Table 29: Imports and exports of fresh lobster by trade partner

30621 - Crustaceans; rock lobster and other sea crawfish (palinurus spp., panulirus spp., jасus spp.), not frozen, (whether in shell or not, whether or not cooked by steaming or by boiling in water) (US\$ '000)

Island nations		Mainland and Madagascar					
Mauritius Imports	Seychelles Imports	Madagascar Exports		Malawi Imports	Mozambique Exports		Zambia Imports
APEI+ Total	APEI+ Total	APEI+ Total		APEI+ Total	APEI+ Total		APEI+ Total
Madagascar	Madagascar	Malawi		Madagascar	Madagascar		Madagascar
Malawi	Malawi	Mauritius		Mauritius	Malawi		Malawi
Mozambique	Mauritius	Mozambique		Mozambique	Mauritius		Mauritius
Seychelles	Mozambique	Seychelles		Seychelles	Seychelles		Mozambique
Zambia	Zambia	Zambia		Zambia	Zambia		Seychelles
Total non-APEI+	Total non-APEI+	Total non-APEI+	656	Total non-APEI+	Total non-APEI+	1,356	Total non-APEI+
India 37	India 11	China 491			China 1,176		South Africa 10
Indonesia 5	France 5	Hong Kong, China 164			South Africa 148		Lebanon
Denmark 0	Belgium 0	France 0			Thailand 32		China
United States 0	United Arab Emi 0	Belgium 0			Uganda		
France 0	United States 0	Luxembourg 0					
RoW 0							
Total World 43	Total World 16	Total World 656		Total World	Total World 1,356		Total World 10
APEI+ share 0.2%	APEI+ share 0.0%	APEI+ share 0.0%		APEI+ share 0.0%	APEI+ share 0.0%		APEI+ share 0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

3.3.3. Crab

123. **Crabs are another important crustacean export for Madagascar and Mozambique.** Both countries export less total crab by value than prawns or lobster. Crabs, however, are still a significant source of export revenue and further contribute to the ability of Mozambique and Madagascar to supply a mix of seafood products which is important when targeting small market countries like Mauritius and Seychelles.

124. **The trade data for frozen crab are presented in Table 30.** As with other crustaceans, these data show that Mozambique and Madagascar export to EU and other countries with demanding food safety standards. Madagascar currently supplies 85 percent of crab imports by Mauritius so there are already well-established trade linkages for this commodity. Madagascar has supplied a trace amount of crab to Seychelles.

Table 30: Imports and exports of frozen crab by trade partner

30614 - Crustaceans; crabs, frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water) (US\$ '000)

Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Imports		Mozambique Exports		Zambia Imports	
APEI+ Total	433	APEI+ Total	1	APEI+ Total	433	APEI+ Total		APEI+ Total		APEI+ Total	
Madagascar	432	Madagascar	1	Malawi		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius	432	Mauritius		Malawi		Malawi	
Mozambique		Mauritius		Mozambique		Mozambique		Mauritius		Mauritius	
Seychelles	0	Mozambique		Seychelles	1	Seychelles		Seychelles		Mozambique	
Zambia		Zambia		Zambia		Zambia		Zambia		Seychelles	
Total non-APEI+	74	Total non-APEI+	144	Total non-APEI+	3,734	Total non-APEI+	2	Total non-APEI+	1,190	Total non-APEI+	13
China	27	Indonesia	35	France	3,332	South Africa	2	South Africa	397	South Africa	12
India	11	France	33	Germany	122	China		Australia	242	China	
France	7	United Arab Emi	30	Italy	74			France	204		
Thailand	5	Vietnam	13	Canada	47			Portugal	124		
United States	4	United States	12	New Zealand	41			Spain	90		
RoW	20	RoW	20	RoW	118			RoW	132		
Total World	506	Total World	144	Total World	4,167	Total World	2	Total World	1,190	Total World	13
APEI+ share	85.4%	APEI+ share	0.6%	APEI+ share	10.4%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	1.2%

Source: UNCOMTRADE data (annual average values, 2012-17).

3.3.4. Mollusks

125. **Madagascar and Mozambique export US\$8.7 million and US\$2.5 million of all types of mollusks each year respectively including frozen octopus, squid, cuttlefish, and sea cucumber.** Mauritius and Seychelles import US\$5 million and US\$814,000 of these products respectively providing a further opportunity for Mozambican and Malagasy exporters to supply a mix of products. Already Madagascar exports around US\$1.5 million of octopus and US\$100,000 of squid to Mauritius annually (see Table 31).¹² In Seychelles, SADC and COMESA exporters enjoy a preferential margin of 25 percent on frozen octopus (HS 030759). Table 31 presents the detailed trade data for the two most important types of mollusks in APEI+ trade.

¹² As a landlocked country, Zambia has no marine species. The trade data show US\$5.3 million of exports from Zambia under HS030799 (Mollusks and other aquatic invertebrates; frozen, dried, salted or in brine (whether in shell or not), n.e.c.) to Hong Kong and may be a misclassification or, perhaps, freshwater snails, mussels, and/or clams from Lake Kariba.

Table 31: Imports and exports of (a) cuttlefish and squid and (b) octopus by trade partner**(a) Cuttlefish and squid****30749 - Molluscs; cuttle fish and squid, frozen, dried, salted or in brine (whether in shell or not) (US\$ '000)**

Island nations				Mainland and Madagascar			
Mauritius Imports		Seychelles Imports		Madagascar Exports		Zambia Imports	
APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total
Madagascar	104	Madagascar		Malawi		Madagascar	
Malawi		Malawi		Mauritius	104	Malawi	
Mozambique		Mauritius		Mozambique		Mauritius	
Seychelles		Mozambique		Seychelles		Seychelles	
Zambia		Zambia		Zambia		Zambia	
Total non-APEI+	1,878	Total non-APEI+	350	Total non-APEI+	158	Total non-APEI+	166
China	1,096	China	205	France	105	South Africa	1
India	281	United Arab Emi	62	Italy	47	Portugal	141
Other Asia, nes	142	France	42	Canada	6	Italy	16
Namibia	96	Belgium	20	Thailand		Tunisia	5
South Africa	58	United Kingdom	13	RoW		South Africa	2
RoW	206	RoW	7	RoW		France	1
Total World	1,982	Total World	350	Total World	263	Total World	166
APEI+ share	5.3%	APEI+ share	0.0%	APEI+ share	39.7%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

(b) Octopus**30759 - Molluscs; octopus (octopus spp.), frozen, dried, salted or in brine (US\$ '000)**

Island nations				Mainland and Madagascar			
Mauritius Imports		Seychelles Imports		Madagascar Exports		Zambia Imports	
APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total
Madagascar	1,359	Madagascar		Malawi		Madagascar	
Malawi		Malawi		Mauritius	1,359	Malawi	
Mozambique		Mauritius		Mozambique		Mauritius	
Seychelles		Mozambique		Seychelles		Seychelles	
Zambia		Zambia		Zambia		Zambia	
Total non-APEI+	312	Total non-APEI+	60	Total non-APEI+	3,745	Total non-APEI+	659
Indonesia	126	United Arab Emi	32	France	2,974	Portugal	363
India	73	India	8	Italy	368	Italy	270
China	46	Belgium	7	Portugal	253	France	15
Pakistan	17	Kenya	5	Czech Republic	58	United Arab Emi	6
South Africa	15	France	4	Canada	51	Spain	4
RoW	36	RoW	4	RoW	42	RoW	1
Total World	1,672	Total World	61	Total World	5,105	Total World	659
APEI+ share	81.3%	APEI+ share	0.3%	APEI+ share	26.6%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

3.3.5. Conclusions – high-value seafood

126. **Frozen seafood products from Mozambique and Madagascar are likely to be a good area for increased trade.** Although the market for high-value seafood in Mauritius and Seychelles is small, frozen prawns, lobster, crab, octopus, and squid are very high value to weight ratio products. As frozen commodities, the SPS risks are relatively low and large exporters in Mozambique and Madagascar and sell mainly to Europe so have full HACCP accreditation. Several smaller exporters trading in seafood products from artisanal producers have also achieved HACCP accreditation.

127. **The main constraint in exporting seafood to Mauritius and Seychelles is the small size of these markets.** Most crustacean and mollusk imports by the island nations are traded on price whereas exporters in Mozambique and Madagascar export very high-quality products that command premium prices in the world market. High-end markets for top quality seafood products do exist in Mauritius and

Seychelles that could potentially absorb a few containers of supply from Mozambique and Madagascar each year. Large exporters in these countries could easily divert a few mixed containers to the island nations that would otherwise go to Europe. These sales will only ever be a tiny part of the overall business, but exporters said would still be worthwhile for increasing brand recognition of their product. For smaller exporters of artisanal-caught seafood products, however, the Mauritius and Seychelles markets may be too small to be of much interest given limited resources for targeting multiple markets and strong prices available in Europe and Asia. Packing mixed containers would be especially easy for larger exporters in Mozambique who handle a wide variety of wild caught products whereas the biggest exporters in Madagascar are focused on prawn farming.

3.4. Nuts and edible seeds

128. **Groundnuts, sesame, and cashew are important smallholder export crops in the mainland countries and Madagascar and may offer further potential for increased trade with the island nations.** Annual average import and export values are summarized in Table 32 which provides an overview of potential for trade complementarity between APEI+ countries in these commodities. As shown, Mozambique is a large exporter of all commodities in this group, particularly sesame and cashew. Malawi is a large exporter of shelled groundnuts and, to a lesser extent, sesame. Madagascar is a moderately large exporter of shelled groundnuts and in-shell cashew. Zambia is a much smaller exporter of the selected commodities compared with other APEI+ exporters but is still a large producer of groundnuts with considerable potential for increased growth and value addition.

Table 32: Imports and exports of selected nuts and edible seeds (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Groundnuts						
120210 - Ground-nuts; in shell, not roasted	214.0	18.5	161.5	74.1	2,319.6	214.7
120220 - Ground-nuts; shelled, not roasted	1,532.8	9.9	1,749.1	20,416.4	9,719.0	426.1
Sesame						
120740 - Oil seeds; sesamum seeds	199.8	9.3	2.1	492.4	67,041.4	0.0
Cashew						
80131 - Nuts; cashew nuts, in shell	50.0	24.4	3,558.6	26.9	38,331.4	30.4
80132 - Nuts; cashew nuts, shelled	428.2	137.0	462.3	0.3	33,001.9	0.0

Source: UNCOMTRADE data (annual average values, 2012-17).

129. **Table 33 looks more closely at the trade balances for commodities in this group.** Mauritius and Seychelles export almost no nuts or edible seeds and the trade balances for countries is basically the same as total imports. The reverse is generally also true for the mainland countries and Madagascar where imports are very modest. One notable exception to this is that that Zambia is a large net importer of shelled groundnuts bought mostly from Malawi. Zambia is also a small net importer of sesame and shelled cashews.

Table 33: Balance of trade for different types of nuts and edible seeds (US\$ '000)

HS Description	Trade Balance (X-M)					
	MRU	SYC	MAD	MAL	MOZ	ZMB
Groundnuts						
120210 - Ground-nuts; in shell, not roasted	(214)	(19)	161	84	2,201	154
120220 - Ground-nuts; shelled, not roasted	(1,530)	(10)	1,724	22,736	9,065	(13,762)
Sesame						
120740 - Oil seeds; sesamum seeds	(199)	(9)	(3)	489	66,503	(22)
Cashew						
80131 - Nuts; cashew nuts, in shell	(50)	(24)	3,558	26	38,330	25
80132 - Nuts; cashew nuts, shelled	(426)	(137)	461	(4)	32,945	(80)

Source: Calculated from UNCOMTRADE data (annual average values, 2012-17).

3.4.1. Groundnuts

130. **Groundnuts are one of the most widely cultivated crops in mainland APEI countries.** Although classified by the HS system as an oilseed, groundnuts are rarely grown as an oil crop in southern Africa and are instead used as a food ingredient, snack item, and to manufacture peanut butter. Nearly every rural household grows at least some groundnuts for family consumption and cash sale.

131. **Groundnuts are also an important export for mainland APEI countries and Madagascar.** In Malawi groundnuts rank as the sixth most valuable agriculture export after tobacco, tea, sugar, pigeon peas, and cotton. From 2012-2017, Malawi exported an average of US\$20.4 million of groundnuts of which US\$11.7 million (57 percent) was to Zambia making groundnuts, by far, the most important crop for Malawi in intra-APEI+ trade. According to local experts, about 15 percent of Malawi's groundnuts are exported, 25 percent are sold to formal traders and processors, and 60 percent is used for home consumption or traded informally in local markets. Large commercial exporters in Malawi include Export Trading Group (ETG), Farmers World (which is part of the Mauritius-based Meridian Group of Companies), and the National Smallholder Farmers' Association of Malawi (NASFAM).

132. **A significant SPS risk in the trade of groundnuts is the potential for aflatoxin contamination.** Aflatoxin is a highly toxic metabolite that has been shown to cause cancer, immune-system suppression, liver disease, growth retardation, and death in both humans and domestic animals. The Food and Agriculture Organization (FAO) estimates that aflatoxin affects 25 percent of the world's crops and the U.S. Centers for Disease Control estimates that more than 4.5 billion people are chronically exposed to aflatoxin through contaminated foods such as maize and groundnuts. Aflatoxin limits are tightly regulated in international food trade with maximum permissible levels for human consumption in Europe set at four parts per billion.

133. **Aflatoxin risk management requires good on-farm management and post-harvest handling to prevent the growth and spread of aflatoxin spores.** Malawi has made considerable progress in recent years in raising public awareness of the dangers of aflatoxins and steps that can be taken to minimize aflatoxin growth. Investments have also been made in national-level testing facilities that are now internationally accredited for export certification. As important as these steps are, however, Malawi still faces many challenges in aflatoxin management. Critically, there is little capacity for aflatoxin testing at the field level where problems with spore growth arise and, without this capacity, it is not possible to reward upstream investments in aflatoxin mitigation.

134. **One possible model for change comes from Zambia where an agricultural brokerage company is offering contracts to large commercial farmers to produce specific varieties of groundnuts demanded**

by buyers in South Africa. The nuts are bought in shell which minimizes the aflatoxin risk and, upon reception, are shelled and graded by color and size according to the buyer's requirements. Contract arrangements like this are easier to manage with large commercial farmers, but outgrower programs for tobacco, cotton, and even export vegetables do exist and could potentially be extended to include smallholder groundnut farmers as well.

135. **New technologies also have the potential to transform regional commodity trade and transmission of price signals.** Simple handheld devices for field-level testing of aflatoxins, pesticide residues, and other SPS risks are now available with capacity to send test results to the cloud where data can be shared with private traders and public officials including SPS authorities.¹³ COMACO, in Zambia, is reportedly using such technologies already when buying groundnuts for its HACCP-certified line of peanut butter. Another new technology known as "aflagoggles" allow wearers to see aflatoxins under ultraviolet light and has potential to manage trade risks at warehouses, border posts, and other critical points.

136. **Table 34 below provides details of imports and exports of unshelled and shelled groundnuts by each APEI+ country.** As shown, Seychelles is only a small importer of groundnuts while Mauritius imports around US\$1.75 million of shelled and unshelled groundnuts annually with around a third of imports coming from Madagascar. China and India are the other main suppliers of groundnuts to Mauritius. In addition to importing pulses as discussed above, JM Veerapen in Mauritius is leading importer of groundnuts. Exports from Malawi mainly go to neighboring African countries while Mozambique exports groundnuts mostly to Indonesia.

Table 34: Import and export of (a) un-shelled and (b) shelled groundnuts by trade partner

(a) Unshelled groundnuts

120210 - Ground-nuts; in shell, not roasted or otherwise cooked (US\$ '000)

Island nations		Mainland and Madagascar									
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Exports		Mozambique Exports		Zambia Exports	
APEI+ Total	74	APEI+ Total		APEI+ Total	74	APEI+ Total	49	APEI+ Total		APEI+ Total	
Madagascar	74	Madagascar		Malawi		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius	74	Mauritius		Malawi		Malawi	
Mozambique		Mauritius		Mozambique		Mozambique		Mauritius		Mauritius	
Seychelles		Mozambique		Seychelles		Seychelles		Seychelles		Seychelles	
Zambia		Zambia		Zambia		Zambia	49	Zambia		Seychelles	
Total non-APEI+	140	Total non-APEI+	15	Total non-APEI+	88	Total non-APEI+	25	Total non-APEI+	2,316	Total non-APEI+	215
China	118	China	6	Indonesia	37	South Africa	12	Indonesia	2,112	South Africa	193
India	22	Singapore	4	France	20	Tanzania	7	South Africa	137	Zimbabwe	16
United Arab Emira		India	2	Pakistan	19	Zimbabwe	7	Malaysia	29	Angola	6
United Kingdom		United States	1	United Arab Emiri	13	Netherlands		United Arab Emiri	21	Netherlands	
		United Arab Emirat	1					Angola	14		
		RoW	1					RoW	3		
Total World	214	Total World	15	Total World	161	Total World	74	Total World	2,316	Total World	215
APEI+ share	34.4%	APEI+ share	0.0%	APEI+ share	45.6%	APEI+ share	65.8%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

¹³ Two such systems are MobileAssay (<https://mobileassay.com/>) and AccuScan Gold (<https://foodsafety.neogen.com/en/accuscan-gold>). A World Bank ASA on Piloting Disruptive SPS Technologies for Improved SPS Management in the EAC plans to put these and other new SPS technologies to practical test see how they work in real trade situations.

(a) Shelled groundnuts**120220 - Ground-nuts; shelled, not roasted or otherwise cooked, whether or not broken (US\$ '000)**

Island nations			Mainland and Madagascar						
Mauritius Imports		Seychelles Imports	Madagascar Exports		Malawi Exports	Mozambique Exports	Zambia Imports		
APEI+ Total	552	APEI+ Total	APEI+ Total	552	APEI+ Total	11,684	APEI+ Total	11,681	
Madagascar	552	Madagascar	Malawi		Madagascar		Madagascar		
Malawi		Malawi	Mauritius	552	Mauritius		Malawi	11,681	
Mozambique		Mauritius	Mozambique		Mozambique	2	Mauritius		
Seychelles		Mozambique	Seychelles		Seychelles		Seychelles		
Zambia		Zambia	Zambia		Zambia	11,681	Zambia		
Total non-APEI+	981	Total non-APEI+	8	Total non-APEI+	1,197	Total non-APEI+	8,733	Total non-APEI+	9,581
India	496	United Arab Emirat	3	Belgium	656	Zimbabwe	4,445	Indonesia	5,226
China	469	India	2	South Africa	191	Tanzania	2,461	South Africa	3,161
Cote d'Ivoire	15	South Africa	1	Ukraine	185	South Africa	1,669	United Kingdom	286
France	1	United States	1	Pakistan	64	Kenya	115	Vietnam	273
South Africa		Singapore	1	Indonesia	41	United Kingdom	14	Pakistan	156
RoW		RoW	1	RoW	60	RoW	29	RoW	479
Total World	1,533	Total World	8	Total World	1,749	Total World	20,416	Total World	9,581
APEI+ share	36.0%	APEI+ share	0.0%	APEI+ share	31.5%	APEI+ share	57.2%	APEI+ share	0.0%
								APEI+ share	98.8%

Source: UNCOMTRADE data (annual average values, 2012-17).

3.4.2. Sesame

137. **Mozambique and, to a lesser extent, Malawi are the main sesame growing nations in the APEI+ group of countries.** Sesame, like groundnuts, is an annual crop but is grown almost entirely for cash sale and export rather than for home consumption.¹⁴ For Mozambique, sesame exports are around US\$66.7 million annually making the crop the fourth most valuable agri-food export after tobacco, sugar, and pigeon peas. Malawi is a much smaller sesame producer with an average of just US\$492,000 exports from 2012-2017 but has been growing in importance in recent years. Very little sesame is used domestically in Malawi or Mozambique.

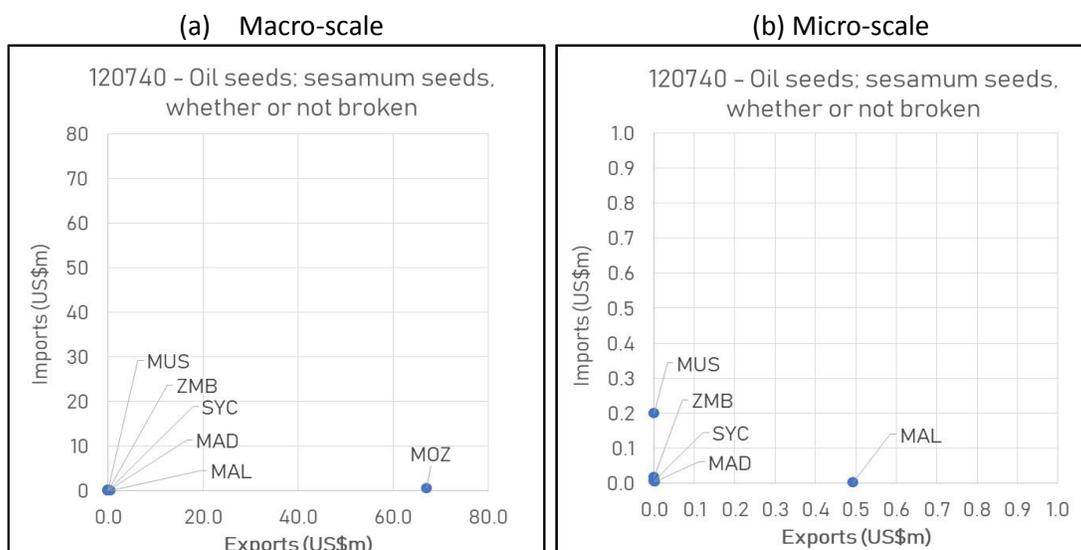
138. **Sesame is well-suited to smallholder production.** The crop can resist drought where others fail and requires little if any fertilizer so is inexpensive to grow. Because of their small size and pod characteristics, half of production can be lost from mechanical threshing so is ideal for labor-intensive smallholder processing. The crop grows well in the same soils and climate as tobacco so is a good diversification option from tobacco. As recently as 2005, China was the world's largest exporter of sesame, but is now the world's biggest importer. Africa accounts for about a third of global production and contributes about 70 percent to global trade, a share that continues to grow. Mozambique now ranks as the world's 12th largest producer while Malawi is small at number 52. In the previous decade, Mozambique was the 30th largest sesame producer and there was no recorded production in Malawi (FAOSTAT data, accessed 10 May 2019). Large companies exporting sesame in Mozambique include ETG, Olam, and MozGrain. ETG, Farmers World, and NASFAM are the main exporters from Malawi.

139. **Chart 17 shows the trade complementarity of APEI+ countries in sesame at two different scales.** As shown by the chart on the left, exports from Mozambique completely dwarf the trade by all other APEI+ countries. When one zooms to a smaller scale, however, the chart on the right reveals a potential for around US\$200,000 of imports by Mauritius that could be supplied by Malawi and/or Mozambique.

¹⁴ Sesame has one of the highest oil contents of any seed, with a rich, nutty flavor. The seeds are used in baking, to top bread, buns and bagels, in crackers and in cakes. The ground seeds are used in soups, fish dishes and as condiments in Asia and East Africa. The oils are also used in salad dressings and cooking oils, as well as making some margarines.

Although the total market for sesame in Mauritius is small, sesame seeds have many different applications in the production of value-added baked goods, edible oils, salad dressings, and margarines.

Chart 17: Trade complementarity in sesame



Source: UNCOMTRADE data (annual average values, 2012-17).

140. **Table 35 looks at the details of sesame among APEI+ countries.** As shown, the current import needs of Mauritius for sesame are met mostly by India. Mozambique exports mostly to China, Japan, and Turkey while the exports from Malawi go mostly to Turkey. These global markets are, of course, highly competitive and price driven so with Malawi and Mozambique able to land sesame in these distant markets there is every reason to believe they could be as competitive as India from a price perspective. Since there have not been any exports of sesame from the mainland APEI countries to Mauritius, a SPS risk assessment would be required for product admissibility. As a dry commodity, however, the SPS risks with sesame are not great. Aflatoxin can infect sesame but is a much smaller risk than for groundnuts.

Table 35: Import and export of sesame by trade partner

120740 - Oil seeds; sesamum seeds, whether or not broken (US\$ '000)

Island nations		Mainland and Madagascar									
Mauritius Imports	Seychelles Imports	Madagascar Imports	Malawi Exports	Mozambique Exports	Zambia Imports						
APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	52	APEI+ Total	APEI+ Total					
Madagascar	Madagascar	Malawi	Madagascar	Madagascar	Madagascar						
Malawi	Malawi	Mauritius	Mauritius	Malawi	Malawi						
Mozambique	Mauritius	Mozambique	Mozambique	52	Mauritius	Mauritius					
Seychelles	Mozambique	Seychelles	Seychelles	Seychelles	Mozambique						
Zambia	Zambia	Zambia	Zambia	Zambia	Seychelles						
Total non-APEI+	198	Total non-APEI+	7	Total non-APEI+	5	Total non-APEI+	440	Total non-APEI+	66,651	Total non-APEI+	18
India	167	United Arab Emirat	2	Thailand	2	Turkey	371	China	51,006	South Africa	11
Mexico	15	India	2	China	1	South Africa	33	Japan	8,486	India	5
Singapore	5	South Africa	1	India	1	Tanzania	18	Turkey	4,359	Zimbabwe	1
China	4	Oman	1	South Africa	1	Japan	18	Greece	695	Norway	1
France	2	Iran, Islamic Rep.	0	Unspecified		Netherlands		South Africa	590	Indonesia	
RoW	5	RoW	1	RoW				RoW	1,515	RoW	
Total World	198	Total World	7	Total World	5	Total World	492	Total World	66,651	Total World	18
APEI+ share	0.0%	APEI+ share	3.6%	APEI+ share	0.0%	APEI+ share	10.7%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

3.4.3. Cashew

141. **Unlike groundnuts and sesame, cashew is a perennial tree crop that takes 2-3 years to produce the first harvest.** Cashew favors warm climate and does well in sandy soils. In APEI+ countries they are mainly grown in coastal regions of Mozambique and Madagascar. Cashew are also grown in western Zambia and in low lying parts of Malawi with a warm climate. African countries currently produce over half the world's cashew with Mozambique being the fifth largest producer in Africa and eighth largest in the world. Madagascar is the 14th largest producer in Africa and Malawi is the 18th largest in Africa. The United States is the largest importer of cashew kernel (shelled cashew) with imports valued at US\$1.58 billion in 2017.

142. **An inherent challenge with cashew is that the edible kernel grows inside two layers or hard shell between which lies caustic oils that can cause viscous burns.** To soften the shell, cashew nuts must be roasted by steam or an oil bath before cracking. Because of the difficulty with this process, most cashew processing is done manually by low-cost seasonal workers in India and Vietnam. The lack of investment in processing facilities has long been a problem for Mozambique and other African countries in that shelled kernels are many times more valuable than unshelled nuts. Recently, the situation has begun to change with commercial investments semi-automated cashew processing facilities in Mozambique by MozCaju and other operators. MozCaju is not yet HACCP or BRC Food Safety certified but is working in this direction. Plans are also underway to achieve organic certification.

143. **Table 36 provides details of the imports and exports of unshelled and shelled cashew of APEI+ countries by trade partner.** As expected, these data show that most unshelled nuts are exported to India and Vietnam. Somewhat surprisingly, the data also show that Mauritius and even Seychelles import small amounts of unshelled nuts that are presumably cracked by the local food industry. To the extent there are investors in the island nations interested in cashew processing, importing unshelled nuts from the mainland APEI countries and Madagascar could be a new business opportunity. Although progress is being made in the mainland countries and Madagascar with cashew processing, there is still considerable scope for further investment and this could be another area that private investors from Mauritius and Seychelles may wish to explore.

Table 36: Import and export of (a) un-shelled and (b) shelled cashew by trade partner

(a) Unshelled cashew

80131 - Nuts, edible; cashew nuts, in shell, fresh or dried (US\$ '000)

Island nations			Mainland and Madagascar								
Mauritius Imports	Seychelles Imports		Madagascar Exports	Malawi Exports	Mozambique Exports	Zambia Exports					
APEI+ Total	APEI+ Total		APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total				
Madagascar	Madagascar		Malawi	Madagascar	Madagascar	Madagascar	Madagascar				
Malawi	Malawi		Mauritius	Mauritius	Malawi	Malawi	Malawi				
Mozambique	Mauritius		Mozambique	Mozambique	Mauritius	Mauritius	Mauritius				
Seychelles	Mozambique		Seychelles	Seychelles	Seychelles	Seychelles	Mozambique				
Zambia	Zambia		Zambia	Zambia	Zambia	Zambia	Seychelles				
Total non-APEI+	50	Total non-APEI+	20	Total non-APEI+	3,559	Total non-APEI+	27	Total non-APEI+	38,311	Total non-APEI+	30
Indonesia	29	United Arab Emirat	8	India	1,797	India	27	India	27,184	India	30
India	13	India	6	Vietnam	1,732	South Africa		Vietnam	10,646	Namibia	
Vietnam	8	Singapore	5	Algeria	19			South Africa	321		
Hong Kong, China	1	Thailand	1	China	11			Sri Lanka	106		
South Africa		South Africa		Maldives				United Kingdom	20		
RoW		RoW						RoW	33		
Total World	50	Total World	20	Total World	3,559	Total World	27	Total World	38,311	Total World	30
APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

(a) Shelled cashew**80132 - Nuts, edible; cashew nuts, shelled, fresh or dried (US\$ '000)**

Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Exports		Mozambique Exports		Zambia Exports	
APEI+ Total		APEI+ Total		APEI+ Total		APEI+ Total		APEI+ Total		APEI+ Total	
Madagascar		Madagascar		Malawi		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius		Mauritius		Malawi		Malawi	
Mozambique		Mauritius	2	Mozambique		Mozambique		Mauritius		Mauritius	
Seychelles		Mozambique		Seychelles		Seychelles		Seychelles		Mozambique	
Zambia		Zambia		Zambia		Zambia		Zambia		Seychelles	
Total non-APEI+	425	Total non-APEI+	110	Total non-APEI+	454	Total non-APEI+		Total non-APEI+	32,079	Total non-APEI+	
India	302	United Arab Emirat	50	France	212	India		United States	15,996	Netherlands	
Vietnam	76	Singapore	25	Netherlands	202	Netherlands		South Africa	4,289		
Myanmar	20	India	19	United States	14			Netherlands	3,866		
United Arab Emira	11	Thailand	3	South Africa	14			Lebanon	1,830		
Indonesia	7	United States	3	United Arab Emiri	10			Norway	1,009		
RoW	7	RoW	9	RoW	2			RoW	5,088		
Total World	425	Total World	111	Total World	454	Total World		Total World	32,079	Total World	
APEI+ share	0.0%	APEI+ share	1.4%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

144. **With respect to shelled cashew, the second part of Table 36 suggests further opportunities for increased trade.** By value, shelled cashew exports from Mozambique are nearly the same as unshelled exports. Madagascar still lags with cashew processing but is making progress. Zambia and Malawi do not export any shelled cashew. On the importer side, the data show that Mauritius and Seychelles are moderately large importers of shelled nuts so could be of interest as a new export destination for both Mozambique and Madagascar. Both countries primarily export raw nuts which have potential for further value addition through roasting, salting, packaging, and possible mixing with other types of nuts that could be done by HACCP and ISO certified processors in the island nations for domestic sale and re-export.

3.4.4. Conclusions – nuts and edible seeds

145. **The analysis of nuts and edible seed suggests a good potential for increased exports from mainland APEI countries and Madagascar to the island nations.** While total market size in Mauritius and Seychelles is dwarfed by production volumes in the other countries, unit values for nuts and seeds are relatively high and compare favorably with those for bulk grain, oil-cake, and pulses. Like pulses, the small market size for nuts and edible seeds may even be regarded as an advantage for APEI+ exporters in that trade does not happen on the scale of full vessel loads but rather by container. Also, like pulses, nuts and edible seeds are well-suited to value-added processing and can be used to manufacture different foods and confectionery products for domestic sale and re-export to Indian Ocean neighbors.

146. **APEI+ countries are proven exporters of groundnuts, cashew, and sesame at globally competitive prices.** Groundnuts involve a particularly high food safety risk related to aflatoxin, but progress is being made in Malawi and elsewhere in raising farmer and consumers awareness of this risk and what is needed to manage aflatoxin effectively. While there are technical solutions to manage aflatoxin risks, what is needed most are clear market signals to reward investments up and down the value chain in improved on-farm practices and post-harvest handling. Emerging contract farming arrangements for export groundnuts in Zambia provide one model for transmitting these signals. New contract farming arrangements between buyers in the island nations and large exporters such as ETG, MozGrain, Farmers World, NASFAM, and others with detailed specifications for aflatoxin limits would be a good way to promote the expansion of these agreements. Other than aflatoxins, nuts and seeds are traded dry so present little risk to plant health and pest risks can be managed with fumigation.

3.5. Other high-value products

147. **Beyond the product categories discussed so far, a diverse range of other high-value commodities also have potential for increased trade with Mauritius and Seychelles.** These products include raw materials that can be used for value-added processing and fully-finished goods ready for retail distribution. Natural honey and dry chili peppers, for example, are exported by APEI+ countries to food processors in South Africa and Europe and in shelf-ready form as bottled honey and chili sauce. Fermented (black) tea leaves are another important export from APEI+ countries that could be used by Mauritius and Seychelles for blending with local tea both for domestic sale and export. APEI+ countries also export many different horticulture products including fresh table grapes and flash frozen fruits that could be of special interest to the island nations. Import and export data for these other commodities are in Table 37.

Table 37: Imports and exports of other selected commodities (US\$ '000)

HS6 Description	Imports		Exports			
	MRU	SYC	MAD	MAL	MOZ	ZMB
Selected commodities						
40900 - Honey; natural	1,053.1	122.4	94.7	66.5	0.4	2,110.6
90420 - Spices; chili peppers (dried, crushed, ground)	630.1	47.6	139.6	2,518.6	550.7	42.1
90240 - Tea, black; (fermented) in immediate packings > 3kg	346.2	252.0	56.0	76,597.6	4,749.7	45.9
80610 - Fruit, edible; grapes, fresh	4,105.4	632.4	1.4	20.6	0.5	457.8
81190 - Fruit and nuts n.e.c. in heading 0811, frozen	220.2	33.5	1,256.3	4.2	0.4	0.1

Source: UNCOMTRADE data (annual average values, 2012-17).

148. **Table 38 looks at the net trade balances of APEI+ countries in the selected commodities.** As shown, Mauritius and Seychelles are net importers of all the selected products while one or more of the APEI+ countries are net exporters of all commodities except for table grapes. As a fresh horticulture product, variety type and seasonality play a large role in determining the trade potential for grapes. On balance Zambia is a net importer of fresh grapes with nearly all grapes sold in local markets throughout the year coming from South Africa. A large exporter of fresh cut flowers from Zambia, however, recently began exporting two specific varieties of table grapes timed to come into harvest just before the Namibian and South African seasons begin. These grapes are exported in shelf-ready bundles to Sainsburys in the United Kingdom and to other supermarkets in South Africa. Fresh produce importers in Mauritius and Seychelles expressed a strong interest in importing grapes which is why the commodity is included here even though, on balance, Zambia is a net importer.

Table 38: Balance of trade for other selected commodities (US\$ '000)

HS Description	Trade Balance (X-M)					
	MRU	SYC	MAD	MAL	MOZ	ZMB
Selected commodities						
40900 - Honey; natural	(1,026.4)	(122.1)	85.3	33.2	(122.2)	2,101.3
90420 - Spices; chili peppers (dried, crushed, ground)	(616)	(48)	135	2,515	516	(10)
90240 - Tea, black; (fermented) in immediate packings > 3kg	(273)	(252)	49	76,533	4,258	(820)
80610 - Fruit, edible; grapes, fresh	(3,894.3)	(632.4)	(211.9)	(122.3)	(375.9)	(393.3)
81190 - Fruit and nuts n.e.c. in heading 0811, frozen	(192)	(21)	1,240	2	(18)	(32)

Source: Calculated from UNCOMTRADE data (annual average values, 2012-17).

149. **Far from being an exhaustive list, the selected products are merely indicative of potential new trade areas.** From a development perspective, natural honey and chili peppers are of special interest because of having strong ties to smallholder producers. Tea is mainly an estate crop in the APEI+ region and derives its competitiveness, at least in part, from the low cost of seasonal labor used at the field and factory stages of the production chain. Likewise, grapes are entirely a large commercial enterprise in

Zambia. In Madagascar, on the other hand, fruits used for flash freezing are grown by smallholders under contract to the exporting company. There are also firms in Madagascar exporting fresh green beans, sugar snaps, baby corn, and other crops grown by smallholder outgrowers. In general, fresh horticulture is one of the most labor-intensive areas of agriculture with very high potential for job creation at the field and packhouse stages of the supply chain and in logistics and other support services.

3.5.1. Natural honey

150. **While all APEI+ countries produce honey, only Zambia and Madagascar export honey on a commercial scale.** Zambia is by far the largest honey exporter in the APEI+ group of countries with several firms having developed systems for collecting honey from remote rural producers. Until recently, most honey in Zambia was harvested from traditional bark hives that are placed high in the forest canopy. This practice, however, has strong negative environmental consequences and most honey exporters have been active in promoting improved practices through training programs and sale/distribution of box hives. Improved hives not only mitigate the environmental impact but are placed at ground level so have advantages from a gender perspective as well.

151. **Over 85 percent of Zambia's honey exports go to Europe.** To meet buyer requirements in EU markets, leading exporters use coded buckets so that every drum can be traced to the area where it originated. Samples of all export batches are sent outside Zambia for food safety analysis by internationally accredited labs. Zambia's largest honey exporter, Forest Fruits Ltd. is organic certified. The second largest honey exporter, COMACO which trades under the It's Wild band, is Hazard Analysis and Critical Control Point (HAACP) certified for honey and expects to be organic certified soon.

152. **Most honey from Zambia is exported in 300kg drums for blending with other honey in the country where it is bottled.** Some importers may pasteurize the honey as well. Zambian honey is a poly-flora product with dark amber appearance and rich taste sought after by honey blenders. Zambian honey is also highly suited to direct consumption and several firms pack pure Zambian honey in consumer size bottles for domestic sale and for export to retailers in South Africa. Some importers in Europe also pack Zambian honey as a pure product. In addition to liquid honey, Zambia exports beeswax, beeswax candles, and honey vinegar.

153. **Madagascar is currently a much smaller honey exporter compared to Zambia but has considerable growth potential.** In the early 20th Century, honey was the third most valuable export for Madagascar with production around 30,000 tons per year. Due to deforestation and degradation of natural habitats, total annual production is currently less than 3,000 tons a year of which only a small fraction is exported. Like other areas of export agriculture in Madagascar, formal sector honey exporters mostly target very high-end, specialty markets. By buying only from certain areas at certain times of the year, exporters can market honey as a gourmet, single-nectar product. *Compagnie du Miel*, headquartered in France, is one such firm and markets single-nectar honey of lychee, vanilla, mangrove, eucalyptus, jujube, and rosewood among other exotic species. The firm collects honey from smallholders and has a sophisticated traceability system designed to meet EU food safety requirements. It exports semi-processed honey in large drums to France where the product is further processed and packed in glass jars. To market its product, the firm hosts tasting workshops complete with wine and cheese pairings at gourmet delicatessens and other events in Switzerland and France.

154. **The detailed trade data for natural honey are presented in Table 39.** As shown, Mauritius imports around US\$47,000 of honey from Madagascar annually equal to 4.5 percent of total imports. The rest of imports to Mauritius are from Australia, China, and distributors in Saudi Arabia. Between 2012 and

2017, Seychelles imported small amounts of bottled honey from Mauritius but otherwise bought mainly from distributors in UAE, Singapore, and Egypt.

Table 39: Import and export of natural honey by trade partner

409 - Honey; natural ('000 US\$)

Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Exports		Mozambique Exports		Zambia Exports	
APEI+ Total	47	APEI+ Total	8	APEI+ Total	47	APEI+ Total		APEI+ Total		APEI+ Total	1
Madagascar	47	Madagascar		Malawi		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius	47	Mauritius		Mauritius		Malawi	1
Mozambique		Mauritius	7	Mozambique		Mozambique		Mauritius		Mauritius	
Seychelles		Mozambique		Seychelles		Seychelles		Seychelles		Mozambique	
Zambia		Zambia		Zambia		Zambia		Zambia		Seychelles	
Total non-APEI+	1,006	Total non-APEI+	129	Total non-APEI+	48	Total non-APEI+	66	Total non-APEI+		Total non-APEI+	2,033
Australia	489	United Arab Emi	34	France	40	Zimbabwe	63	Korea, Rep.		United Kingdom	549
China	165	Singapore	25	China	2	South Africa	3	South Africa		Belgium	404
Saudi Arabia	147	Egypt, Arab Rep.	20	United Arab Emi	2	Japan	1			Norway	314
France	77	India	16	Qatar	1	Germany				South Africa	268
India	68	Australia	10	Switzerland	1					Germany	184
RoW	60	RoW	24	RoW	1					RoW	314
Total World	1,053	Total World	137	Total World	95	Total World	67	Total World		Total World	2,034
APEI+ share	4.5%	APEI+ share	5.5%	APEI+ share	49.8%	APEI+ share	0.1%	APEI+ share	1.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

155. **A main importer of Malagasy honey to Mauritius is Laribeets Ltd. which imports single nectar honey in 300kg drums for additional filtering and bottling.** This honey is supplied as a raw, organic product to gourmet outlets and hotels for a price around US\$27 per kilo. Laribeets is HACCP certified and is working to develop export markets in Indian Ocean destinations for the honey it packs. Other honey imported to Mauritius also arrives in bulk for local packaging and trades in wholesale markets for about US\$9 per kg. This ordinary honey accounts for over 99 percent of the market by volume with average cif prices for bulk honey is around US\$6.50 per kg. About 95 percent of honey imported to Mauritius is packed for table consumption and the remaining 5 percent is used as an ingredient in food products.

156. **As relatively high value products, airfreight of small consignments of honey from Zambia to the island nations may be a viable business opportunity.** Retail prices for blended honey in the STC Hypermarket in Victoria, for example, were observed to be around US\$14.40/kg. In Zambia, the wholesale price for organic certified honey packed in 500g retail bottles is US\$5.30/kg leaving US\$9.10/kg to cover transport and retail mark-up. Between Lusaka and Dubai, airfreight prices are around US\$2.98/kg, so, indicatively, could be around US\$5.00/kg all the way to Victoria, leaving US\$4.10/kg to cover the retailer's costs and profits in Seychelles, and still be price-competitive. If sent by container, shipping costs would be even less. In bulk, Zambian honey is sold from Lusaka in 300kg drums at US\$4.00 per kg. With 72 drums making up a full container load, the total price per container is US\$86,400.

157. **While food importers in Seychelles and Mauritius expressed keen interest in the price points and organic credentials of Zambian honey, SPS risks are an important concern with this product.** Mauritian authorities described problems in the recent past with varroa mite arriving in honey and beeswax imported from Madagascar with negative consequences for local bee populations. Another SPS risk with bee products is American foulbrood (AFB), a bacterial disease that can also lead to the death of bee colonies. While AFB is not highly contagious and is normally spread through the exchange of beekeeping equipment and movement of infected combs, AFB spores can survive in liquid honey which has long been a contentious issue in Zambian honey trade with South Africa. Even for honey being transshipped to Europe, South African authorities have periodically imposed outright bans on Zambian honey or insisted on radiation treatment. Zambian veterinary experts say there is no AFB in Zambia and exporters complain that irradiation nullifies their organic certification so believe the measure is being used as a non-tariff

barrier rather than a legitimate SPS measure. Overcoming the innate sensitivities of SPS authorities in Mauritius and Seychelles to risk of new animal health disease therefore could be the greatest challenge in increasing honey trade between mainland APEI+ countries and the island nations.

3.5.2. Chili peppers

158. **Bird's eye chili peppers, also known as peri-peri peppers, are an important smallholder cash crop in parts of Malawi and Mozambique.** These peppers are used in commercial chili sauces including the range of sauces made by Nando's in South Africa that it exports around the world. To promote the crop, Nando's began operating contract farming arrangements and extension programs for smallholders in Malawi, Mozambique, and Zimbabwe in 2012.

159. **Malawi has had prolonged success with bird's eye chilies over several decades and currently exports around US\$2.4 million of dry chili peppers annually.** Buyers include spice companies and sauce manufacturers with around two-thirds of exports going to Europe and one-third to South Africa. In Malawi, these peppers are grown primarily in the south of the country around Mount Mulanje, Liwonde, and Balaka. Two Malawi companies, Nali Ltd. and NASFAM use the peri-peri pepper to manufacture their own hot sauces that are sold locally and exported to neighboring countries and other world markets including the United Kingdom.

160. **The trade data for APEI+ countries in dried chili pepper are provided in Table 40.** As shown, Mauritius imports an average of dried US\$624,000 of chili peppers annually mainly from India. According to customs data, the three largest buyers of dry chilis account for 45 percent of imports. Two firms in Mauritius manufacture bottled chili sauce and other importers use the pepper in spice mixes. Large buyers import an entire container at a time sometimes mixing with dried chilies and chili paste with smaller buyers rely on shared containers. In Mauritius, dried chili peppers imported from SADC and COMESA members in crushed or ground form enjoy a 10 percent preferential margin in customs tariffs. All chilies to Mauritius are imported by sea while Seychelles sometimes imports small quantities by air. Average cif prices in Mauritius fell from US\$2.25-2.75 per kg in 2016 to US\$1.20-1.90/kg in 2017. Seychelles does not import large volumes leading to average cif price that are two to three times higher than in Mauritius.

Table 40: import and export of dried chili peppers by trade partner

90420 - Spices; fruits of the genus capsicum or pimenta, dried or crushed or ground (US\$ '000)

Mauritius Imports	Seychelles Imports	Madagascar Exports	Malawi Exports	Mozambique Exports	Zambia Exports
APEI+ Total 3	APEI+ Total	APEI+ Total 3	APEI+ Total	APEI+ Total 1	APEI+ Total
Madagascar 3	Madagascar	Malawi	Madagascar	Madagascar	Madagascar
Malawi	Malawi	Mauritius 3	Mauritius	Malawi	Malawi
Mozambique	Mauritius	Mozambique	Mozambique	Mauritius	Mauritius
Seychelles	Mozambique	Seychelles	Seychelles	Seychelles	Mozambique
Zambia	Zambia	Zambia	Zambia	Zambia 1	Seychelles
Total non-APEI+ 621	Total non-APEI+ 55	Total non-APEI+ 137	Total non-APEI+ 2,378	Total non-APEI+ 547	Total non-APEI+ 42
India 543	India 31	France 88	South Africa 817	Spain 418	Spain 39
Spain 26	United Arab Emiri 10	Netherlands 17	Spain 498	South Africa 101	South Africa 3
China 17	Singapore 5	United States 16	France 304	Indonesia 18	Netherlands
Thailand 9	France 3	Canada 7	Italy 213	Germany 6	Tanzania
Bangladesh 6	South Africa 2	Germany 2	Germany 157	Hong Kong, Chin. 4	
RoW 19	RoW 4	RoW 6	RoW 390		
Total World 624	Total World 55	Total World 140	Total World 2,378	Total World 549	Total World 42
APEI+ share 0.5%	APEI+ share 0.4%	APEI+ share 2.1%	APEI+ share 0.0%	APEI+ share 0.2%	APEI+ share 0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

161. **In Seychelles, Solei Ltd. manufacturers a creole chili sauce for the domestic market from local chilies and some imported peppers.** According to the National Bureau of Statistics (2013) chili peppers are the most widely grown crop in Seychelles with most families cultivating small plots in home gardens.

Government has identified value-added processing and penetration of export markets as a strategic priority for agriculture. With only limited space for agriculture production, however, this type of development on a commercially competitive scale depends on greater use of imported raw materials. As a dry product, chili peppers have a relatively low SPS risk and could be a good commodity to prioritize for risk assessment. The NBA is understandably cautious about allowing new commodities into Seychelles but, for agri-processing to grow, is important to be proactive so that Solei and other potential manufacturers have more choice of where to source raw materials.

3.5.3. Tea

162. **Mauritius and Seychelles both produce high-quality tea with a unique flavor profile that is blended with imported tea and packaged for retail sale.** While both nations are net tea importers, Mauritius exports around US\$407,000 of tea annually, mainly to France, including US\$305,000 of tea packaged for retail sale. Seychelles exports around US\$5,000 of packaged tea annually to Mauritius. Malawi is Africa's second largest tea exporter and produces very good tea that could be used for blending or for packaging on its own but is not currently a supplier to Mauritius or Seychelles. Mozambique is also a moderately large tea exporter but has not supplied the island nations either. Rather, most imports to Mauritius are from Kenya while Seychelles imports mainly from Sri Lanka. Table 41 shows total tea imports and exports by APEI+ countries at the four-digit HS level.

Table 41: Import and export of all types of tea by trade partner

902 - Tea (US\$ '000)											
Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Exports		Mozambique Exports		Zambia Imports	
Madagascar		Madagascar		Madagascar		Madagascar		Madagascar		Madagascar	
Malawi		Malawi		Mauritius		Mauritius		Malawi		Malawi	393
Mozambique		Mauritius	5	Mozambique		Mozambique		Mauritius		Mauritius	
Seychelles	5	Mozambique		Seychelles		Seychelles		Seychelles		Mozambique	
Zambia		Zambia		Zambia		Zambia	328	Zambia		Seychelles	
Total non-APEI+	612	Total non-APEI+	460	Total non-APEI+	59	Total non-APEI+	74,879	Total non-APEI+	4,400	Total non-APEI+	2,674
Kenya	299	Sri Lanka	261	Pakistan	41	South Africa	25,852	Netherlands	877	South Africa	1,707
China	92	South Africa	44	Kenya	12	United Kingdom	17,152	Germany	656	Zimbabwe	863
Poland	83	United Arab Emii	39	France	2	United States	13,465	United Kingdom	626	India	31
France	67	France	34	Canada	1	Germany	5,039	Poland	623	Sri Lanka	20
Sri Lanka	31	India	30	Singapore	1	Belgium	2,607	Belgium	545	China	13
RoW	41	RoW	52	RoW	2	RoW	10,765	RoW	1,073	RoW	40
Total World	617	Total World	464	Total World	59	Total World	75,207	Total World	4,400	Total World	3,068
APEI+ share	0.8%	APEI+ share	1.0%	APEI+ share	0.1%	APEI+ share	0.4%	APEI+ share	0.0%	APEI+ share	12.8%

Source: UNCOMTRADE data (annual average values, 2012-17).

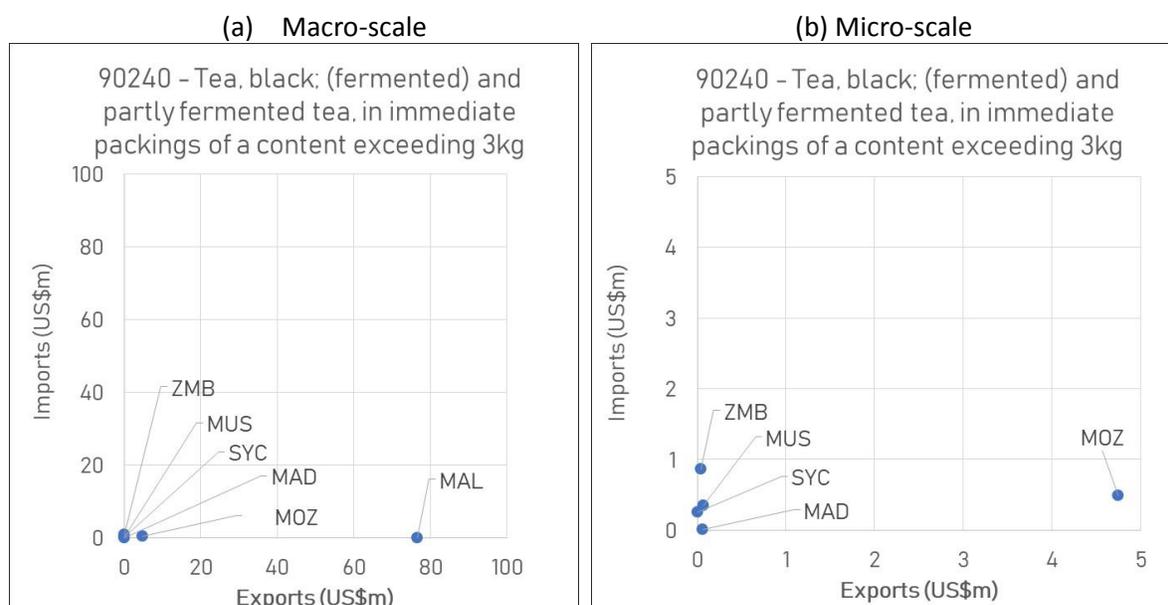
163. **Table 42 looks at the balance of tea trade by APEI+ countries at both the four- and six-digit levels.** At the six-digit level the HS system classifies tea by degree of fermentation and pack size. A key step in tea manufacturing that determines the type of tea produced is fermentation. When applied to tea, the term fermentation refers to enzymatic oxidation that occurs when the freshly picked tea leaves are allowed to dry. This oxidation process turns green leaves dark and may be stopped by pan frying or steaming the leaves before they are completely dry. There are many nuanced variations to the degree and type of fermentation but for the HS system, tea is classified as either being green (not fermented) or black (fermented). At the six-digit level, tea is also classified by the size of immediate packaging (i.e. packs greater than or less than 3kg). While most consumers only buy maybe 100g of tea at a time, classification at this level broadly distinguishes between tea that is sold in bulk for blending and further packaging (i.e. tea in immediate packs > 3kg) and tea that is ready, or nearly ready, for final distribution (i.e. tea in immediate packs < 3kg).

Table 42: Balance of trade in different types of tea (US\$ '000)

HS Description	Trade Balance (X-M)					
	MRU	SYC	MAD	MAL	MOZ	ZMB
All tea (4-digit level)						
902 - Tea	(231.2)	(485.7)	(26.1)	77,577.6	1,433.1	(3,003.4)
Tea by level of processing and packaging (6-digit level)						
90210 - Tea, green; (not fermented) in immediate packings < 3kg	(141.8)	(29.1)	(22.8)	13.5	(92.3)	(78.3)
90220 - Tea, green; (not fermented) in immediate packings > 3kg	(38.6)	(54.7)	(9.0)	216.9	(39.2)	(37.6)
90230 - Tea, black; (fermented) in immediate packings < 3kg	221.9	(68.1)	(43.6)	852.5	(2,693.5)	(1,556.4)
90240 - Tea, black; (fermented) in immediate packings > 3kg	(272.7)	(252.0)	49.3	76,533.0	4,258.1	(819.8)

Source: Calculated from UNCOMTRADE data (annual average values, 2012-17).

164. **These distinctions in type of tea and pack size are important to understanding the opportunities for tea trade between APEI+ countries.** As shown, Malawi is a large net exporter of all forms of tea, but mainly exports black tea in immediate packings greater than 3kg. Mozambique also mainly exports tea in this form. Mauritius and Seychelles, on the other hand, mainly import black tea in packings greater than 3kg for blending with their own local tea so is an area of direct trade complementarity (see Chart 18). The data further show that Mauritius is a net exporter of black tea in packings smaller than 3kg (i.e. blended tea ready or nearly ready for retail sale). Most black tea imported by Mauritius currently supplied by Kenya, but these import needs could easily be met by Malawi or Mozambique as APEI+ trade partners. Similarly, Seychelles mainly imports from Sri Lanka but as a globally traded commodity tea from Malawi and Mozambique should also be competitive with cif prices in Victoria.

Chart 18: Trade complementarity in black tea in packings > 3kg

Source: UNCOMTRADE data (annual average values, 2012-17).

165. **The detailed trade data for black tea in packings greater than 3kg are provided in Table 43.** In addition to opportunities for increased trade with Mauritius and Seychelles, the table shows that Zambia imports around 30 percent of its tea requirements in this category from Malawi with most of the rest coming from South Africa.

Table 43: Import and export of black tea in packings > 3kg by trade partner

90240 - Tea, black; (fermented) and partly fermented tea, in immediate packings of a content exceeding 3kg (US\$ '000)

Island nations				Mainland and Madagascar							
Mauritius Imports		Seychelles Imports		Madagascar Exports		Malawi Exports		Mozambique Exports		Zambia Imports	
APEI+ Total		APEI+ Total		APEI+ Total		APEI+ Total		APEI+ Total		APEI+ Total	
344		247		56		73,739		4,360		267	
Madagascar	298	Madagascar	195	Malawi	41	Madagascar	25,834	Madagascar	874	Madagascar	267
Malawi	29	Malawi	15	Mauritius	12	Mauritius	17,050	Malawi	656	Malawi	267
Mozambique	5	Mauritius	1	Mozambique	1	Mozambique	13,397	Mauritius	626	Mauritius	267
Seychelles	3	Mozambique	6	Seychelles	1	Seychelles	4,931	Seychelles	623	Seychelles	267
Zambia	2	Zambia	10	Zambia	1	Zambia	2,598	Zambia	531	Zambia	267
	6		10		10		9,930		1,051		267
Total non-APEI+	344	Total non-APEI+	247	Total non-APEI+	56	Total non-APEI+	74,006	Total non-APEI+	4,360	Total non-APEI+	599
Kenya	298	Sri Lanka	195	Pakistan	41	South Africa	25,834	Netherlands	874	South Africa	497
China	29	India	15	Kenya	12	United Kingdom	17,050	Germany	656	Zimbabwe	60
United Kingdom	5	South Africa	11	United States	1	United States	13,397	United Kingdom	626	India	16
South Africa	3	United Arab Emirates	10	Singapore	1	Germany	4,931	Poland	623	Sri Lanka	14
France	2	United Kingdom	6	Canada	1	Belgium	2,598	Belgium	531	China	5
RoW	6	RoW	10	RoW	10	RoW	9,930	RoW	1,051	RoW	6
Total World	344	Total World	248	Total World	56	Total World	74,006	Total World	4,360	Total World	866
APEI+ share	0.0%	APEI+ share	0.4%	APEI+ share	0.0%	APEI+ share	0.4%	APEI+ share	0.0%	APEI+ share	30.8%

Source: UNCOMTRADE data (annual average values, 2012-17).

166. **Malawi tea has an excellent reputation on the international market and is mainly grown by large estates around Thyolo and Mulanje in the southeastern highlands.** Large commercial estates account for 93-95 percent of production, with the remainder grown by some 10,000 smallholder farmers on around 15 percent the total area given to tea. Ownership of commercial estates is concentrated among 11 companies, of which the largest is Eastern Produce Malawi (EPM), which owns 21 of the 44 estates. Tea is the third most valuable agriculture export for Malawi. In Mozambique, tea is the 19th most valuable agriculture export. Production in Mozambique is centered around the town of Gurue in the highlands of Zambezia Province about 150km east of the main tea growing areas in Malawi.

167. **There are around 760ha planted to tea in Mauritius and four tea factories.** The factories are Bois Cheri, Corson, La Flora, and a new factory, La Chartreuse that started in January 2000. The tea industry produces more than 20 varieties of tea including include green tea, coconut tea, lemon tea, caramel tea, cardamom tea, lemongrass tea and other exotic fruit's tea, iced tea, and tea chutney. Government through the Tea Board protects the local industry and does not generally allow the import of bulk black tea except for blending purposes. Mauritius also imposes a 30 percent tariff on imports of black tea, from which SADC and COMESA producers are exempt, creating a sizeable preferential margin for tea exports from within the region. However, given the main competitor in the Mauritian market is currently Kenya, which as a COMESA member benefits from the same preferential access.

168. **The tea industry in Seychelles is much smaller and is dominated by the STC which has its own plantation and tea factory.** The STC plantation has only five hectares of tea currently in production. About five to six containers of black tea for blending with the local production are imported from Sri Lanka each year. The STC says that SPS matters are not a big problem with black tea because of being a dry, processed product. Directors at STC said they are interested to learn about new suppliers, but due to a lack of other business contacts buy from Sri Lanka as a matter habit. To develop new supply relations the first step they said would be for a potential exporter to send a sample to see if it can be used for blending with the local product.

3.5.4. Fresh and processed horticulture products

169. **Supermarket companies, wholesalers, food distributors and others met in Mauritius and Seychelles expressed a strong interest in developing new sources of supply for fruits and vegetables.**

Compared with dry and processed commodities, however, SPS risks are much higher with fresh products. Logistics including product grading, packaging, and cool chain management are also a significant challenge to the trade of fresh products. These concerns do not preclude new areas of trade from developing but do present a significant dilemma. The STC for instance reported that fresh strawberries imported from Kenya and Ethiopia have been a growth area since the addition of direct flights from Nairobi and Addis Ababa. Without any direct flights between the mainland APEI countries and Mauritius or Seychelles, however, such trade linkages are much less likely to take off with Malawi, Mozambique, or Zambia. Madagascar, on the other hand, does enjoy direct flights to Mauritius and good connections to Seychelles and is already exporting various fruits and vegetables to Europe. In Seychelles, many fresh fruits carry significant tariffs from which SADC and COMESA partners are exempt, creating sizeable preferential margins for APEI+ exporters.

170. **Table grapes are a new export for Zambia and help illustrate the challenges and opportunities for trading fresh commodities with the island nations.** Although Zambia is a strong net importer of grapes overall, the Khal Amazi Estate near Lusaka which is best known as an exporter of sweetheart roses, planted around 20 hectares of vineyards in the late 2000s and now exports around 125 tons of Prime White and Red Flame table grapes annually under contract to Sainsburys in the United Kingdom. In making this investment, Khal Amazi spotted an opportunity for these specific varieties to come into production in Zambia just before the Namibian and South African seasons. Exports of grapes from Zambia began in 2012 and are now worth around US\$455,000 annually (see Table 44).

171. **The lack of affordable airfreight from Zambia has long been a challenge for horticulture exporters such that table grapes destined to Europe are first trucked to South Africa from where they are uplifted by air.** The same procedure applies to most fresh flower exports and other fresh fruits and vegetables from Zambia. To the extent there is surplus production that Khal Amazi has not contracted for, and/or to the extent production extends beyond the contract window with Sainsburys, airfreight from Johannesburg to the island nations would be possible. As an exporter to the EU, Khal Amazi is HACCP and GlobalGAP certified. New SPS risk assessments would be required for admissibility, but with exports already going to Europe considerable data on pest risks will already be available. Other than Zambia, Malawi is the only other mainland APEI exporter of table grapes with a very small amount going to Ireland.

Table 44: Import and export of table grapes by trade partner

80610 - Fruit, edible; grapes, fresh (US\$ '000)

Island nations			Mainland and Madagascar								
Mauritius Imports	Seychelles Imports	Madagascar Imports	Malawi Exports	Mozambique Imports	Zambia Exports						
APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total	APEI+ Total						
Madagascar	Madagascar	Malawi	Madagascar	Madagascar	Madagascar	Madagascar					
Malawi	Malawi	Mauritius	Mauritius	Malawi	Malawi	Malawi					
Mozambique	Mauritius	Mozambique	Mozambique	Mauritius	Mauritius	Mauritius					
Seychelles	Mozambique	Seychelles	Seychelles	Seychelles	Seychelles	Mozambique					
Zambia	Zambia	Zambia	Zambia	Zambia	Zambia	Seychelles					
Total non-APEI+	4,041	Total non-APEI+	615	Total non-APEI+	206	Total non-APEI+	21	Total non-APEI+	376	Total non-APEI+	455
South Africa	2,137	Egypt, Arab Rep.	236	South Africa	76	Ireland	21	South Africa	372	United Kingdom	234
Egypt, Arab Rep.	916	South Africa	233	Israel	70	Netherlands		Spain	4	South Africa	189
Italy	673	France	66	Italy	20			Egypt, Arab Rep.	1	Belarus	18
Spain	127	United States	31	Unspecified	20			Namibia		Netherlands	5
Australia	94	Italy	31	Chile	9			United Arab Emi		France	5
RoW	94	RoW	18	RoW	10					RoW	5
Total World	4,041	Total World	615	Total World	206	Total World	21	Total World	376	Total World	455
APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

172. **Apart from fresh fruits and vegetables, opportunities to trade processed products also exist.** These commodities have lower SPS risk and are less prone to spoil. Madagascar produces many types of tropical fruit that are amenable to value added processing. One firm established in 2013 now exports high quality flash-frozen fruits (mangos, pineapple, litchi, guava, lime zest, etc.) made from smallholder farmer fruit to top-end buyers in Europe and Reunion. The firm also exports honey and reports some past sales to Mauritius and even Seychelles but said these markets are very small. In the same sector another company processes litchi, passion fruit, and others into fruit pulp that it exports in vacuum-packed antiseptic drums. Again, the main markets are in Europe and Asia but at least some of this product does go to Mauritius where it is used to manufacturer jams, jellies, juices, and confectionery products. Both exporters follow internationally accredited Hazard Analysis and Critical Control Point (HACCP) plans and have achieved other international accreditations for food safety. Trade data for frozen fruits are shown in Table 45.

Table 45: Import and export of frozen fruits by trade partner

81190 - Fruit, edible; fruit and nuts n.e.c. in heading no. 0811, uncooked or cooked, frozen whether or not containing added sugar or other sweetening matter (US\$ '000)

Island nations		Mainland and Madagascar									
Mauritius Exports	Seychelles Imports	Madagascar Exports	Malawi Exports	Mozambique Imports	Zambia Imports						
APEI+ Total	APEI+ Total	APEI+ Total	53	APEI+ Total	APEI+ Total	APEI+ Total					
Madagascar	Madagascar	Malawi	53	Madagascar	Madagascar	Madagascar					
Malawi	Malawi	Mauritius		Mauritius	Malawi	Malawi					
Mozambique	Mauritius	Mozambique		Mozambique	Mauritius	Mauritius					
Seychelles	Mozambique	Seychelles		Seychelles	Seychelles	Mozambique					
Zambia	Zambia	Zambia		Zambia	Zambia	Seychelles					
Total non-APEI+	28	Total non-APEI+	33	Total non-APEI+	1,203	Total non-APEI+	4	Total non-APEI+	19	Total non-APEI+	32
United Kingdom	12	France	16	France	571	South Africa	4	South Africa	11	South Africa	29
Belgium	7	Belgium	4	South Africa	473	Netherlands		Portugal	5	United Arab Emi	1
Iceland	5	South Africa	4	Belgium	127			Hong Kong, Chin	2	United States	1
France	4	United Arab Emirati	4	Czech Republic	12			China	1	Swaziland	1
Netherlands		United States	3	Netherlands	11			United Arab Emi	1	Namibia	
RoW		RoW	2	RoW	10			RoW		RoW	
Total World	28	Total World	33	Total World	1,256	Total World	4	Total World	19	Total World	32
APEI+ share	0.1%	APEI+ share	0.1%	APEI+ share	4.2%	APEI+ share	0.0%	APEI+ share	0.0%	APEI+ share	0.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

3.5.5 Conclusions – other high-value products

173. **Coverage of this final group of commodities shows that a diverse range of other high-value products also have potential for increased exports from the mainland APEI countries and Madagascar to Mauritius and Seychelles.** These commodities include products with strong links to smallholder producers and estate crops that are exported to the EU, North America, and elsewhere at globally competitive prices. To date, very little trade across these commodities takes place with Mauritius or Seychelles except for a small amount of gourmet honey and flash frozen fruits exported from Madagascar.

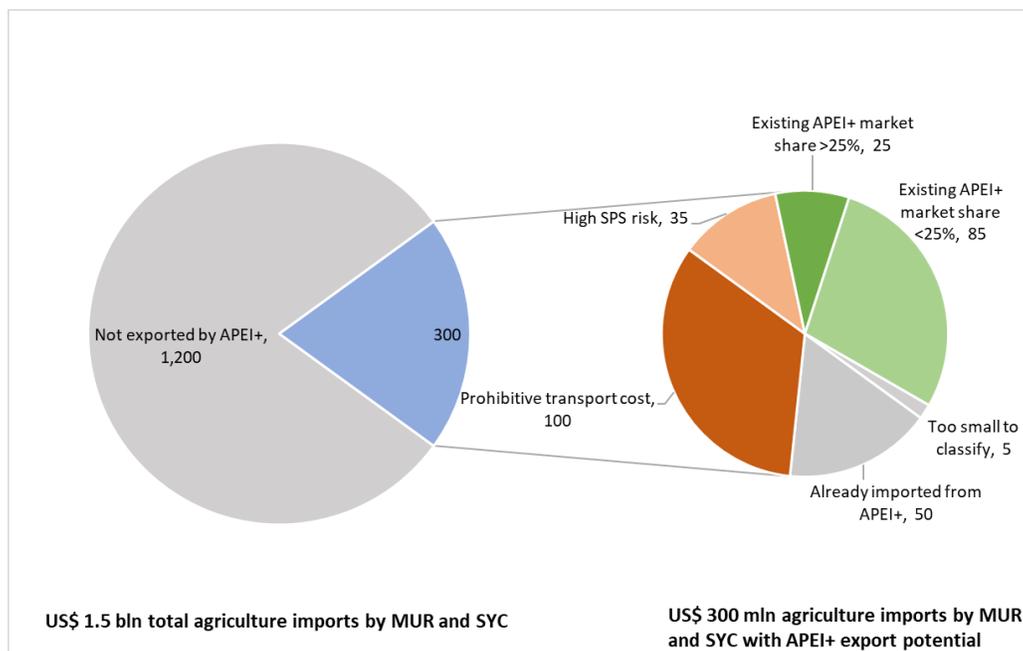
174. **While SPS risk assessment would be a pre-requisite for new trade areas to open, another even more fundamental constraint is the lack of business connections between mainland exporters and potential buyers in Mauritius and Seychelles.** Tea and chili peppers, for instance, should be easy to export from Malawi to Seychelles or Mauritius for blending with local tea and manufacturing of chili sauces for export. For this to happen, however, private investors need to engage with each other and request their SPS authorities to prepare a risk assessment. Dialogue on these lines including cooperation on risk assessments for a list of priority commodities identified by private investors, therefore, would be a good area for continued cooperation through the APEI framework.

4. Conclusions and Future Opportunities

What is the potential for increased agriculture imports by Mauritius and Seychelles from other APEI+ countries?

175. **Potential for more agricultural imports to Mauritius and Seychelles from APEI+ partners exists but is smaller than headline numbers suggest.** Given their high import dependence and large tourism sectors, Mauritius' and Seychelles' total agricultural imports are close to US\$1.5 billion per year. However, at the detailed product level, only approximately US\$300 million of these imports are currently matched by export potential in APEI+ countries, and US\$50 million is already being realized. Of the remaining US\$250 million, approximately US\$100 million is in products with very low value per weight (mostly sugar, maize, and oil cake), which is unlikely to be price competitive if freight costs within the region continue to exceed that from major producer countries, mostly in South America. An additional US\$35 million is in products with high SPS risks, posing a serious, though not insurmountable obstacle to the development of regional trade. This leaves a remainder of approximately US\$115 million in products with immediate untapped potential. Out of this, US\$25 million is in products such as cotton and vanilla for which APEI+ countries (mostly Madagascar) already have a sizeable market share (greater than 25 percent) that could be scaled up, while US\$85 million is in products where intra-APEI+ trade is currently small or inexistent (less than 25 percent). The remaining US\$5 million in untapped trade potential is scattered across small niche products (greater than US\$100,000 per annum) that are too small to classify them and were not further analyzed for this report.

Chart 19: MUR and SYC agriculture imports and APEI+ trade potential



Source: Authors calculation, based on data from UN COMTRADE, Mauritius customs authority, and Ahmed et al (2017)

176. **Further qualitative analysis confirms short term potential in a number of commodity groups and products within the 'low transport cost, low SPS risk' category.** Products in this category for which APEI+ producers are already well established in the island country's markets, but further potential

remains, include cotton, vanilla, and other spices. These were not analyzed further for the purpose of this report, which focuses on new opportunities, but hold proven potential. Potential in this category (low SPS risk, low transport cost) in products with nascent or non-existent current APEI+ imports includes pulses, nuts and seeds, honey, and dried chili peppers, as discussed below. As part of the work on this report, product notes with relevant market information and contact were prepared on these products for dissemination to potential exporters in APEI+ countries.

177. Although Mauritius and Seychelles are only small markets for pulses compared with massive production in the mainland countries and Madagascar, this could be a good area for trade expansion. Mauritius and Seychelles are both large pulse consumers for their size and growth in the Mauritian food processing industry could fuel further demand for pigeon peas, dry beans, and other types of pulses. The market in Seychelles revolves mainly around one type of lentil grown in Turkey but there are other opportunities for mainland APEI countries and Madagascar to displace dry bean and pigeon pea imports from other countries in this market. SPS requirements are relatively straight forward with pulses and the value to weight ratios for these commodities are higher than for instance bulk grains and oil-cake so transport costs are less of an issue.

178. While economies of scale matter, the competitiveness of APEI+ countries in global pulse markets depends on the ability of pulse exporters to grow a variety of pulses and switch between pulse crops according to market demand. The weakness of Malawi and Mozambique relying on one market for one specific type of pulse was exposed in dramatic fashion with the introduction of import quotas by India. All global producers suffered, but in Madagascar the experience with pulses has been more positive because of producing many different pulses for different export markets. Rather than the loss of the Indian market, the biggest constraint to the pulse sector in Madagascar is access to quality seed. Access to new varieties is also a challenge in Malawi and Mozambique and would be a good area for cooperation between APEI+ countries. All APEI+ countries all party to the SADC Regional Seed Agreement and accelerated implementation of the agreed rules for variety release and seed certification could be a direct benefit to regional pulse trade.

179. The analysis of nuts and edible seed suggests a good potential for increased exports from APEI+ countries and Madagascar to the island nations. While total market size in Mauritius and Seychelles is dwarfed by production volumes in the other countries, unit values for nuts and seeds are relatively high and compare favorably with those for bulk grain, oil-cake, and pulses. Like pulses, the small market size for nuts and edible seeds may even be regarded as an advantage for APEI+ exporters in that trade does not happen on the scale of full vessel loads but rather by container. Also, like pulses, nuts and edible seeds are well-suited to value-added processing and can be used to manufacture different foods and confectionery products for domestic sale and re-export to Indian Ocean neighbors.

180. APEI+ countries are proven exporters of groundnuts, cashew, and sesame at globally competitive prices. While groundnuts do involve a particularly high food safety risk related to aflatoxin, progress is being made in Malawi and elsewhere in raising farmer and consumers awareness of this risk and what is needed to manage aflatoxin effectively. While there are technical solutions to manage aflatoxin risks, what is needed most are clear market signals to reward investments up and down the value chain in improved on-farm practices and post-harvest handling. Emerging contract farming arrangements for export groundnuts in Zambia provide one model for transmitting these signals. New contract farming arrangements between buyers in the island nations and large exporters such as ETG, MozGrain, Farmers World, NASFAM, and others with detailed specifications for aflatoxin limits would be a good way to

promote the expansion of these agreements. Other than aflatoxins, nuts and seeds are traded dry so present little risk to plant health and pest risks can be managed with fumigation.

181. **A diverse range of other high-value products also have potential for increased exports from the mainland APEI countries and Madagascar to Mauritius and Seychelles.** These commodities include products with strong links to smallholder producers like natural honey and chili peppers with high value to weight ratios and estate crops like tea and table grapes that are exported to the EU and elsewhere at globally competitive prices. To date, very little trade across these commodities takes place with Mauritius or Seychelles except for a small amount of gourmet honey and flash frozen fruits exported from Madagascar.

182. **While SPS risk assessment would be a pre-requisite for new trade areas to open, another even more fundamental constraint is the lack of business connections between mainland exporters and potential buyers in Mauritius and Seychelles.** Tea and chili peppers, for instance, should be easy to export from Malawi to Seychelles or Mauritius for blending with local tea and manufacturing of chili sauces for export. For this to happen, however, private investors need to engage with each other and request their SPS authorities to prepare a risk assessment. Dialogue on these lines including cooperation on risk assessments for a list of priority commodities identified by private investors, therefore, would be a good area for continued cooperation through the APEI framework.

183. **Trade potential in the ‘high transport cost’ (low value to weight) category is unlikely to realize at significant scale unless regional freight costs are brought down considerably, and reliability is improved.** This category is somewhat inflated by the large quantities of sugar imported by Mauritius in past years, which as explained in the background section on Mauritius is likely to further decline in the future. Under current conditions, the best prospects for increased exports from the mainland APEI countries to the island nations in this category likely involve relatively small consignments of non-GMO soybean oilcake and soybean meal. Stock feed makers in Mauritius and Seychelles all said there is strong and growing demand for non-GM foods in their countries. Non-GM soybean cake sells for around US\$30-40 more per ton than conventional cake which helps to offset some of the higher transport costs associated with importing from landlocked countries in Africa.

184. **India also exports non-GM cake and has been the main supplier to Seychelles, yet by using inexpensive backload freight, Zambia and Malawi are likely able to deliver non-GM cake to Victoria or Port Louis for roughly the same price.** Zambia and Malawi also have the advantage of being able to supply product in flexible amounts with no minimum orders so ties up less capital for importers compared with buying an entire vessel load which is a key advantage for small importers. While such trade is unlikely to reach significant scale in the short term, product notes on these commodities were also prepared to inform producers in APEI+ countries of such potential niche opportunities.

185. **In the category of high SPS risk, success of niche products in the high-end seafood industry shows that such challenges are not insurmountable.** Frozen seafood products from Mozambique and Madagascar are likely to be a good area for increased trade. Although the market for high-value seafood in Mauritius and Seychelles is small, frozen prawns, lobster, crab, octopus, and squid are very high value to weight ratio products. As frozen commodities, the SPS risks are relatively low and large exporters in Mozambique and Madagascar and sell mainly to Europe so have full HACCP accreditation. Smaller exporters trading in seafood products from artisanal producers have also achieved HACCP accreditation. Most crustacean and mollusk imports by the island nations are traded on price whereas exporters in Mozambique and Madagascar export very high-quality products that command premium prices in the

world market. High-end markets for top quality seafood products do exist in Mauritius and Seychelles that could potentially absorb a few containers of supply each year. Large exporters could easily divert a few mixed containers to the island nations that would otherwise go to Europe. These sales will only ever be a tiny part of the overall business, but exporters said would still be worthwhile for increasing brand recognition of their product. For smaller exporters of artisanal-caught seafood products, however, the Mauritius and Seychelles markets may be too small to be of much interest given the strong prices on offer in Europe limited resources for targeting multiple markets. Products notes on selected high value seafoods (prawns, lobsters) were prepared as part of this project.

186. Trade potential of high SPS risk products in the categories fresh fruits and vegetables remains untapped for now. Mainland countries and Madagascar do export fresh produce and other high-risk commodities to neighboring countries, South Africa, and to Europe. SPS risks in the island nations, however, are different than in these global markets and require new risk assessments. Past risk assessments between Mauritius and Madagascar for low- and high-risk commodities helped open several millions of dollars of trade annually and would be a good area for further cooperation between APEI+ countries.

What is holding back regional agricultural trade, and to what extent and how can such constraints be addressed to unlock untapped potential?

187. High regional transport costs and unreliable connectivity, especially in sea freight, emerged as the most significant constraint for enhanced agricultural trade between Mauritius, Seychelles and APEI+ partners. The importance of connectivity extends beyond the agricultural sector and is also noted, for instance, by Mauritian garment producers who are increasingly setting up facilities for labor intensive manufacturing in neighboring Madagascar. While beyond the focus of this study, a regional analysis of drivers of shipping cost with a view to develop cost-effective private sector driven solutions would be highly desirable and constitutes an urgent priority for the consideration of APEI member countries. A pipeline regional World Bank project to improve inland and shipping connectivity through the Nacala corridor (linking Zambia and Malawi to the Mozambique port of Nacala) provides an appropriate platform for such activities.

188. In the medium term, regional coordination on SPS issues could unlock some additional agricultural trade potential if combined with measure to support business-to-business linkages. This would require a combination of capacity building among producers, and information exchange between plant protection and veterinary agencies in APEI countries. As a first step, product notes prepared in the context of this report contain detailed information on SPS requirements in the Mauritian market for the consideration of APEI+ producers. As a follow up, information exchange between veterinary and plant protection offices will be initiated for priority commodities. These include high value seafood and honey on the veterinary side and pulses, groundnuts, chili peppers, tea, and fresh fruits and vegetables on the plant side. The Mauritius Plant Protection office typically engages with counterparts on the mainland upon the specific request of a potential importer for a specific product. By identifying priority commodities and proactively facilitating such a dialogue, the team will seek to unlock trade potential in these commodities.

189. Like SPS, dialogue between APEI+ countries on regional seed trade would also be very helpful. Timely access to the right varieties of seed is especially important to unlocking the potential for trade of pulses, not only between APEI countries but with other world buyers. All APEI+ countries are party to the SADC Regional Seed Agreement and all APEI+ countries except for Mozambique are party to the nearly identical COMESA Regional Seed Agreement. Both agreements aim to speed the procedures for new

variety acceptance and to improve confidence in seed certification. While progress is being made at the SADC and COMESA levels in implementing these agreements, overall progress across these regional communities has been slow. Accelerating the pace of regional integration is exactly the reason APEI countries came together in the first place and closer cooperation on seed trade would be a practical and highly beneficial area where this could be taken forward.

190. **Even for products with low trade cost and SPS risk, challenges remain.** Policy uncertainty, including the risk of export bans, and small market size were frequently cited as problems undermining potential importers' and exporters' confidence in exploring intra-APEI+ agriculture trade opportunities. Firms interviewed in the context of this report also frequently pointed towards the difficulties in establishing reliable business contacts in APEI+ partner countries. The main purpose of the implementation work around this report is therefore to provide detailed market information and facilitate business-to-business matchmaking through dissemination of its findings and the associated product notes.

191. **While this report focuses on products with established trade potential, future investment in agri-business may lead to new sources of export supply from mainland countries if investment constraints are unlocked.** Agriculture trade opportunities are dynamic and can change quickly because of seasonal weather patterns or more slowly through public and private investment in smallholder outgrower programs, regional transport corridors, SPS capacity, seed supply, and/or simply because of building awareness of new trade opportunities among private investors. The analysis in this report and accompanying product notes aims at helping to unlock these trade opportunities.

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Annex 1: Trade Potential 'Master List'

HS 6 digit code	Hs 6 digit description	Total imports MUR & SYC	Potential Trade (lesser of total imports by MUR & SYC and total exports by APEI+)	Imports MUR & SYC from APEI+	Untapped potential trade	Current import share from APEI+	Median unit value (US\$/kg) cif Port Louis	Prerferential margin in MUR	Preferential margin in SYC
Products with high value / weight (low transport cost) and low SPS risk									
520100	Cotton; not carded or combed	42,362	42,362	24,865	17,498	59%	1.78	0%	0%
230990	Animal food	9,714	9,714	68	9,646	1%	1.51	↑ 10%	0%
220210	Waters; including mineral and aerated, containing added sugar or other sweetening matter or flavoured	11,469	6,368	-	6,368	0%	1.38	↑ 15%	0%
170490	Sugar confectionery; (excluding chewing gum, including white chocolate), not containing cocoa	5,969	5,969	0	5,969	0%	2.95	0%	0%
151211	Vegetable oils; sunflower seed or safflower oil and their fractions, crude, not chemically modified	5,384	5,384	-	5,384	0%	0.90	0%	0%
220290	Non-alcoholic beverages; n.e.c. in item no. 2202.10, not including fruit or vegetable juices of heading no. 2009	5,015	5,015	1	5,014	0%	1.15	↑ 9%	↔ 5%
90500	Spices; vanilla	20,982	20,982	16,708	4,275	80%	16.00	↔ 5%	0%
240120	Tobacco; partly or wholly stemmed or stripped	4,201	4,201	15	4,185	0%	7.00	↑ 14%	0%
150710	Vegetable oils; soya-bean oil and its fractions, crude, whether or not degummed, not chemically modified	19,801	3,251	8	3,243	0%	0.92	0%	0%
190531	Food preparations; sweet biscuits, whether or not containing cocoa	13,451	3,124	89	3,035	3%	2.79	0%	0%
190230	Food preparations; pasta (excluding stuffed), cooked or otherwise prepared	2,437	2,437	0	2,437	0%	1.93	0%	↑ 12%
71390	Vegetables, leguminous; n.e.c. in heading no. 0713, shelled, whether or not skinned or split, dried	2,218	2,218	102	2,116	5%	0.94	0%	0%
520300	Cotton; carded or combed	1,588	1,588	171	1,418	11%	2.92	0%	0%
71340	Vegetables, leguminous; lentils, shelled, whether or not skinned or split, dried	3,559	1,302	0	1,302	0%	0.81	0%	0%
190219	Food preparations; pasta, uncooked (excluding that containing eggs), not stuffed or otherwise prepared	2,665	1,187	-	1,187	0%	1.66	0%	0%
200520	Vegetable preparations; potatoes, prepared or preserved otherwise than by vinegar or acetic acid, not frozen	1,833	1,182	-	1,182	0%	2.91	0%	0%
40900	Honey; natural	1,200	1,200	47	1,153	4%	3.07	0%	0%
200819	Nuts and other seeds; whether or not containing added sugar, other sweetening matter or spirit (excluding ground-nuts except in mixtures)	1,113	1,113	-	1,113	0%	3.58	0%	0%
180632	Chocolate and other food preparations containing cocoa; in blocks, slabs or bars, (not filled), weighing 2kg or less	1,589	1,057	1	1,056	0%	4.88	0%	0%
200599	Vegetable preparations; vegetables and mixtures of vegetables n.e.c. in heading no. 2005, prepared or preserved otherwise than by vinegar or acetic acid, not frozen	1,042	1,042	1	1,041	0%	2.42	0%	0%
210210	Yeasts; active	1,360	995	-	995	0%	2.57	0%	0%
120220	Ground-nuts; shelled, not roasted or otherwise cooked, whether or not broken	1,543	1,543	552	991	36%	1.20	0%	0%
210610	Protein; concentrates and textured protein substances	958	958	-	958	0%	1.70	0%	0%

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151190	Vegetable oils; palm oil and its fractions, other than crude, whether or not refined, but not chemically modified	6,001	937	-	937	0%	0.82	0%	0%
190410	Food preparations; obtained by the swelling or roasting of cereals or cereal products	3,919	868	-	868	0%	3.02	0%	0%
220300	Beer; made from malt	5,755	816	0	816	0%	1.14	↑	15%
150790	Vegetable oils; soya-bean oil and its fractions, other than crude, whether or not refined, but not chemically modified	3,663	806	-	806	0%	1.13	↑	10%
100630	Cereals; rice, semi-milled or wholly milled, whether or not polished or glazed	45,463	791	0	791	0%	1.05		0%
100510	Cereals; maize (corn), seed	819	819	35	784	4%	1.05		0%
190190	Food preparations; of flour, meal, starch, malt extract or milk products, for uses n.e.c. in heading no. 1901	3,980	779	-	779	0%	2.73		0%
170410	Sugar confectionery; chewing gum, whether or not sugar-coated, not containing cocoa	770	770	0	770	0%	2.53		0%
91099	Spices; n.e.c. in heading no. 0910	1,376	1,156	387	769	34%	3.29	👉	6%
71333	Vegetables, leguminous; kidney beans, including white pea beans (<i>phaseolus vulgaris</i>), dried, shelled, whether or not skinned or split	1,006	1,006	247	759	25%	0.94		0%
210690	Food preparations; n.e.c. in item no. 2106.10	31,947	721	2	719	0%	5.83		👉 6%
520512	Cotton yarn; (not sewing thread), single, of uncombed fibres, 85% or more by weight of cotton, less than 714.29 but not less than 232.56 decitex (exceeding 14 but not exceeding 43 metric number), not for retail sale	783	705	-	705	0%	3.03		0%
90420	Spices; fruits of the genus capsicum or pimenta, dried or crushed or ground	687	687	3	684	0%	2.00	👉	5%
200559	Vegetable preparations; beans, (not shelled), prepared or preserved otherwise than by vinegar or acetic acid, not frozen	676	676	1	675	0%	1.47		0%
520523	Cotton yarn; (not sewing thread), single, of combed fibres, 85% or more by weight of cotton, less than 232.56 but not less than 192.31 decitex (exceeding 43 but not exceeding 52 metric number), not for retail sale	5,722	649	-	649	0%	3.33		0%
90240	Tea, black; (fermented) and partly fermented tea, in immediate packings of a content exceeding 3kg	649	649	0	649	0%	3.48	↑	30%
200990	Juices; mixtures, unfermented, not containing added spirit, whether or not containing added sugar or other sweetening matter	4,244	567	0	567	0%	1.06		0%
151590	Vegetable fats and oils and their fractions; fixed, n.e.c. in heading no. 1515, whether or not refined, but not chemically modified	556	556	0	556	0%	3.99		0%
81340	Fruit, edible; fruit n.e.c. in heading no. 0812, dried	755	527	0	527	0%	2.63		0%
190110	Food preparations; of flour, meal, starch, malt extract or milk products, for infant use, put up for retail sale	7,532	521	-	521	0%	7.44		0%
180690	Chocolate and other food preparations containing cocoa; n.e.c. in chapter 18	14,949	520	0	519	0%	7.29		0%
71320	Vegetables, leguminous; chickpeas (<i>garbanzos</i>), shelled, whether or not skinned or split, dried	532	517	4	512	1%	0.91		0%
90411	Spices; pepper (of the genus piper), neither crushed nor ground	550	550	73	477	13%	4.47		0%

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200899	Fruit, nuts and other edible parts of plants; prepared or preserved, whether or not containing added sugar, other sweetening matter or spirit, n.e.c. in heading no. 2008	1,441	474	2	471	0%	2.55	0%	0%
120991	Seed; vegetable seed, of a kind used for sowing	1,503	468	1	467	0%	16.57	0%	0%
91030	Spices; turmeric (curcuma)	463	463	0	463	0%	1.33	5%	0%
240130	Tobacco refuse	431	431	53	378	12%	3.00	0%	0%
151110	Vegetable oils; palm oil and its fractions, crude, not chemically modified	370	370	-	370	0%	0.80	0%	0%
220840	Rum and other spirits obtained by distilling fermented sugar-cane products	738	371	0	370	0%	3.44	23%	0%
200190	Vegetable preparations; vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar or acetic acid (excluding cucumbers and gherkins)	342	342	16	326	5%	2.32	0%	0%
120100	Soya beans; whether or not broken	305	305	11	294	4%	0.90	0%	0%
90111	Coffee; not roasted or decaffeinated	401	401	109	292	27%	4.19	0%	13%
90121	Coffee; roasted, not decaffeinated	2,175	284	2	283	1%	5.29	0%	6%
200799	Jams, fruit jellies, marmalades, purees and pastes; of fruit or nuts n.e.c. in heading no. 2007, cooked preparations (excluding homogenised), whether or not containing added sugar or other sweetening matter	1,877	303	26	277	8%	2.54	0%	0%
190420	Food preparations; obtained from unroasted cereal flakes or from mixtures of unroasted cereal flakes and roasted cereal flakes or swelled cereals	1,398	273	-	273	0%	2.53	0%	0%
240220	Cigarettes; containing tobacco	65,664	267	-	267	0%	46.27	0%	0%
121190	Plants and parts (including seeds and fruits) n.e.c. in heading no. 1211, used primarily in perfumery, pharmacy or for insecticidal, fungicidal purposes; fresh or dried, whether or not cut, crushed or powdered	250	250	0	250	0%	3.64	0%	0%
91010	Spices; ginger	356	247	0	247	0%	5.00	5%	0%
200980	Juice; of any single fruit or vegetable n.e.c. in heading no. 2009, unfermented, not containing added spirit, whether or not containing added sugar or other sweetening matter	1,722	242	0	241	0%	1.00	0%	0%
230630	Oil-cake and other solid residues; whether or not ground or in the form of pellets, resulting from the extraction of sunflower seed oils	230	230	-	230	0%	2.00	0%	0%
520522	Cotton yarn; (not sewing thread), single, of combed fibres, 85% or more by weight of cotton, less than 714.29 but not less than 232.56 decitex (exceeding 14 but not exceeding 43 metric number), not for retail sale	3,122	240	11	229	5%	3.19	0%	0%
190120	Food preparations; mixes and doughs for the preparation of bread, pastry, cakes, biscuits and other bakers' wares	931	228	-	228	0%	2.99	0%	0%
120999	Seed; n.e.c. in heading no. 1209, of a kind used for sowing	229	229	3	226	1%	9.50	0%	0%
230120	Flours, meals and pellets; of fish or of crustaceans, molluscs or other aquatic invertebrates	918	225	-	225	0%	1.81	0%	0%
130190	Natural gums, resins, gum-resins and oleoresins, n.e.c. in heading no. 1301	222	222	-	222	0%	3.48	0%	0%
220710	Undenatured ethyl alcohol; of an alcoholic strength by volume of 80% vol. or higher	391	221	-	221	0%	0.96	3%	0%
90611	Spices; cinnamon (Cinnamomum zeylanicum Blume), neither crushed nor ground	223	223	7	217	3%	2.33	0%	0%
120740	Oil seeds; sesamum seeds, whether or not broken	209	209	-	209	0%	2.13	0%	0%

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71290	Vegetables; mixtures of vegetables n.e.c. in heading no. 0712, whole, cut, sliced, broken or in powder but not further prepared, dried	199	199	-	199	0%	3.92	0%	0%
151550	Vegetable oils; sesame oil and its fractions, whether or not refined, but not chemically modified	197	197	-	197	0%	3.35	0%	0%
151620	Vegetable fats and oils and their fractions; partly or wholly hydrogenated, inter-esterified, re-esterified or elaidinised, whether or not refined, but not further prepared	5,113	186	0	186	0%	1.42	0%	0%
200941	Juice; pineapple, of a Brix value not exceeding 20, unfermented, (not containing added spirit), whether or not containing added sugar or other sweetening matter	240	185	-	185	0%	0.91	0%	0%
71080	Vegetables; uncooked or cooked by steaming or boiling in water, frozen, n.e.c. in chapter 7	671	185	-	185	0%	2.03	0%	0%
520511	Cotton yarn; (not sewing thread), single, of uncombed fibres, 85% or more by weight of cotton, measuring 714.29 decitex or more, (not exceeding 14 metric number), not for retail sale	3,854	576	399	177	69%	3.23	0%	0%
120810	Flours and meals; of soya beans	174	174	-	174	0%	3.00	0%	0%
151219	Vegetable oils; sunflower seed or safflower oil and their fractions, other than crude, whether or not refined, but not chemically modified	5,650	170	-	170	0%	1.85	↑	10%
110630	Flour, meal and powder; of the products of chapter 8	587	170	0	169	0%	6.94	0%	0%
90230	Tea, black; (fermented) and partly fermented tea, in immediate packings of a content not exceeding 3kg	169	169	0	169	0%	9.50	↑	30%
90412	Spices; pepper (of the genus piper), crushed or ground	169	169	3	166	2%	4.38	↔	8%
210390	Sauces and preparations therefor; mixed condiments and mixed seasonings	11,245	166	0	165	0%	2.60	0%	↑
151319	Vegetable oils; coconut (copra) oil and its fractions, other than crude, whether or not refined, but not chemically modified	164	164	-	164	0%	4.78	↑	10%
120210	Ground-nuts; in shell, not roasted or otherwise cooked	232	232	74	159	32%	3.00	0%	0%
200919	Juice; orange, not frozen, of a Brix value exceeding 20, unfermented, not containing added spirit, whether or not containing added sugar or other sweetening matter	438	158	-	158	0%	0.94	0%	0%
71339	Vegetables, leguminous; n.e.c. in item no. 0713.30, dried, shelled, whether or not skinned or split	310	310	158	152	51%	0.94	0%	0%
100890	Cereals; n.e.c. in chapter 10	781	152	-	152	0%	7.00	0%	0%
100610	Cereals; rice in the husk (paddy or rough)	3,273	140	0	140	0%	1.09	0%	0%
120600	Oil seeds; sunflower seeds, whether or not broken	138	138	0	138	0%	1.11	0%	0%
71022	Vegetables, leguminous; beans (vigna spp., phaseolus spp.), shelled or unshelled, uncooked or cooked by steaming or boiling in water, frozen	136	136	0	136	0%	1.78	0%	0%
170191	Sucrose; chemically pure, containing added flavouring or colouring matter, in solid form	135	135	-	135	0%	3.66	↑	80%
200811	Nuts; ground-nuts, whether or not containing added sugar, other sweetening matter or spirit	1,276	126	0	125	0%	3.26	0%	0%
200912	Juice; orange, not frozen, of a Brix value not exceeding 20, unfermented, not containing added spirit, whether or not containing added sugar or other sweetening matter	569	123	-	123	0%	1.08	0%	0%

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71350	Vegetables, leguminous; broad beans (vicia faba var. major) and horse beans (vicia faba var. equina and vicia faba var. minor), dried, shelled, whether or not skinned or split	2,302	2,168	2,053	115	95%	1.07	0%	0%
90112	Coffee; decaffeinated, not roasted	114	114	-	114	0%	5.88	0%	0%
90220	Tea, green; (not fermented), in immediate packings of a content exceeding 3kg	112	112	0	112	0%	2.99	0%	0%
90122	Coffee; roasted, decaffeinated	430	104	-	104	0%	13.32	0%	0%
Total products with low transport cost and low SPS risk		428,375	155,159	46,308	108,851				

HS 6 digit code	HS 6 digit description	Total imports MUR & SYC	Potential Trade (lesser of total imports by MUR & SYC and total exports by APEI+)	Imports MUR & SYC from APEI+	Untapped potential trade	Current import share from APEI+	Median unit value (US\$/kg) cif Port Louis	Prerferential margin in MUR	Prerferential margin in SYC
Products with low value / weight (high transport cost) and low SPS risk									
170111	Sugars; cane sugar, raw, in solid form, not containing added flavouring or colouring matter	28,939	28,939	0	28,939	0%	0.50	40%	0%
100590	Cereals; maize (corn), other than seed	24,099	24,099	16	24,083	0%	0.28	0%	0%
230400	Oil-cake and other solid residues; whether or not ground or in the form of pellets, resulting from the extraction of soya-bean oil	22,604	21,544	-	21,544	0%	0.48	0%	0%
170199	Sucrose; chemically pure, not containing added flavouring or colouring matter, in solid form	11,644	11,644	0	11,644	0%	0.53	80%	0%
100640	Cereals; rice, broken	8,110	3,332	-	3,332	0%	0.42	0%	0%
110100	Wheat or meslin flour	3,294	3,294	0	3,294	0%	0.57	15%	0%
71310	Vegetables, leguminous; peas (pisum sativum), shelled, whether or not skinned or split, dried	2,565	2,565	59	2,506	2%	0.58	0%	0%
100190	Cereals; meslin and wheat other than durum	48,231	765	2	763	0%	0.30	0%	0%
100110	Cereals; durum wheat	433	433	-	433	0%	0.30	0%	0%
140490	Vegetable products; n.e.c. in chapter 14	201	181	-	181	0%	0.57	0%	0%
110313	Cereal groats and meal; of maize (corn)	184	184	8	175	5%	0.51	0%	0%
110710	Malt; not roasted	3,614	149	-	149	0%	0.55	0%	0%
110311	Cereal groats and meal; of wheat	177	126	-	126	0%	0.50	0%	0%
Total products with high transport cost and low SPS risk		154,095	97,255	86	97,169				

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HS 6 digit code	Hs 6 digit description	Total imports MUR & SYC	Potential Trade (lesser of total imports by MUR & SYC and total exports by APEI+)	Imports MUR & SYC from APEI+	Untapped potential trade	Current import share from APEI+	Median unit value (US\$/kg) cif Port Louis	Prerential margin in MUR	Prerential margin in SYC
Products with high value / weight (low transport cost) and high SPS risk									
30613	Crustaceans; shrimps and prawns, frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water)	10,548	10,548	689	9,859	7%	1.90	0%	0%
160414	Fish preparations; tunas, skipjack and Atlantic bonito (sarda spp.), prepared or preserved, whole or in pieces (but not minced)	2,357	2,357	1	2,356	0%	1.51	0%	0%
30379	Fish; frozen, n.e.c. in heading no. 0303 (excluding fillets, livers, roes and other fish meat of heading no. 0304)	70,612	2,522	271	2,251	11%	1.90	0%	↑ 25%
30342	Fish; yellowfin tunas (thunnus albacares), frozen (excluding fillets, livers, roes and other fish meat of heading no. 0304)	106,106	1,264	4	1,260	0%	1.91	0%	↑ 11%
70960	Vegetables; fruits of the genus capsicum or of the genus pimenta	1,245	1,245	0	1,245	0%	1.88	0%	↑ 21%
40120	Dairy produce; milk and cream, not concentrated, not containing added sugar or other sweetening matter, of a fat content exceeding 1% but not exceeding 6% (by weight)	2,346	1,060	-	1,060	0%	0.84	0%	0%
10511	Poultry; live, fowls of the species Gallus domesticus, weighing not more than 185g	836	836	-	836	0%	84.65	0%	0%
80930	Fruit, edible; peaches including nectarines, fresh	829	829	-	829	0%	1.93	0%	↑ 13%
30612	Crustaceans; lobsters (homarus spp.), frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water)	2,502	788	58	730	7%	16.14	0%	0%
81090	Fruit, edible; fruits n.e.c. in heading no. 0801 to 0810, fresh	668	668	0	668	0%	1.85	0%	↑ 13%
30799	Molluscs and other aquatic invertebrates; frozen, dried, salted or in brine (whether in shell or not), n.e.c. in heading no. 0307	659	659	9	651	1%	5.72	0%	0%
30419	Fish; fillets and other fish meat (whether or not minced), fresh or chilled, other than swordfish (Xiphias gladius) and toothfish (Dissostichus spp.)	1,141	710	61	649	9%	1.05	0%	↑ 7%
60319	Flowers, cut; flowers and buds of a kind suitable for bouquets or ornamental purposes, fresh, other than roses, carnations, orchids, or chrysanthemums	643	643	-	643	0%	4.80	0%	↑ 7%
30559	Fish; dried (whether or not salted but not smoked), n.e.c. in item no. 0305.51	593	593	-	593	0%	3.51	0%	↑ 25%
30429	Fish; fillets, frozen, other than swordfish (Xiphias gladius) and toothfish (Dissostichus spp.)	2,150	785	219	566	28%	3.00	0%	↑ 16%
80132	Nuts, edible; cashew nuts, shelled, fresh or dried	565	565	0	565	0%	8.66	0%	0%
30611	Crustaceans; rock lobsters and other sea crawfish (palinurus spp., panulirus spp., jасus spp.), frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water)	717	717	156	560	22%	17.01	0%	0%
70200	Vegetables; tomatoes, fresh or chilled	1,206	528	-	528	0%	2.64	0%	↑ 12%
80610	Fruit, edible; grapes, fresh	4,864	480	-	480	0%	2.11	0%	↑ 13%
80820	Fruit, edible; pears and quinces, fresh	1,900	476	-	476	0%	0.90	0%	↑ 14%
30623	Crustaceans; shrimps and prawns, not frozen, (whether in shell or not, whether or not cooked by steaming or by boiling in water)	909	422	9	414	2%	9.00	0%	0%

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160590	Molluscs and other aquatic invertebrates; prepared or preserved (excluding crustaceans)	445	445	43	402	10%	3.00	0%	0%
40310	Dairy produce; yoghurt, whether or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruit or cocoa	1,759	394	-	394	0%	3.69	0%	0%
70410	Vegetables, brassica; cauliflowers and headed broccoli, fresh or chilled	377	377	-	377	0%	1.77	0%	↑ 13%
30759	Molluscs; octopus (octopus spp.), frozen, dried, salted or in brine	1,736	1,736	1,360	377	78%	3.23	0%	↑ 25%
60290	Plants, live; n.e.c. in heading no. 0602	339	339	-	339	0%	16.35	0%	0%
30749	Molluscs; cuttle fish and squid, frozen, dried, salted or in brine (whether in shell or not)	2,340	429	104	325	24%	3.77	0%	0%
30110	Fish; live, ornamental	315	315	-	315	0%	8.00	0%	↑ 25%
160510	Crustacean preparations; crab, prepared or preserved	336	336	22	314	7%	15.19	0%	↑ 24%
70511	Vegetables; cabbage (head) lettuce (lactuca sativa), fresh or chilled	307	307	-	307	0%	2.20	0%	↑ 7%
40700	Eggs; birds' eggs, in the shell, fresh, preserved or cooked	269	269	-	269	0%	8.00	0%	↔ 2%
80212	Nuts, edible; almonds, fresh or dried, shelled	1,679	249	-	249	0%	7.46	0%	0%
160520	Crustacean preparations; shrimps and prawns, prepared or preserved	494	246	4	242	2%	3.00	0%	↑ 21%
30614	Crustaceans; crabs, frozen (whether in shell or not, whether or not cooked by steaming or by boiling in water)	659	659	433	226	66%	4.53	0%	0%
70990	Vegetables; edible, n.e.c. in chapter 7, fresh or chilled	221	221	0	221	0%	1.30	0%	↑ 5%
80111	Nuts, edible; coconuts, fresh or dried, whether or not shelled or peeled, desiccated	411	211	1	209	1%	1.87	0%	↑ 21%
81190	Fruit, edible; fruit and nuts n.e.c. in heading no. 0811, uncooked or cooked, frozen whether or not containing added sugar or other sweetening matter	260	260	53	208	20%	3.86	0%	0%
30269	Fish; n.e.c. in heading no. 0302, fresh or chilled (excluding fillets, livers, roes and other fish meat of heading no. 0304)	248	248	42	205	17%	8.00	0%	↑ 25%
80290	Nuts, edible; n.e.c. in heading no. 0801 and 0802, fresh or dried, whether or not shelled or peeled	204	204	2	202	1%	4.40	0%	↑ 13%
40229	Dairy produce; milk and cream, containing added sugar or other sweetening matter, in powder, granules or other solid forms, of a fat content exceeding 1.5% (by weight)	17,953	200	0	199	0%	3.51	0%	0%
70820	Vegetables, leguminous; beans (vigna spp., phaseolus spp.), shelled or unshelled, fresh or chilled	199	199	0	199	0%	3.66	0%	↑ 14%
80540	Fruit, edible; grapefruit (including pomelos), fresh or dried	753	187	-	187	0%	0.78	0%	↑ 13%
70519	Vegetables; lettuce (lactuca sativa), (other than cabbage lettuce), fresh or chilled	457	176	0	176	0%	1.57	0%	↑ 11%
10599	Poultry; live, ducks, geese, turkeys and guinea fowls, weighing more than 185g	240	164	-	164	0%	79.01	0%	0%
30619	Crustaceans; frozen, n.e.c. in item no. 0306.1 (whether in shell or not, whether or not cooked by steaming or by boiling in water)	172	172	22	151	13%	3.88	0%	0%
70930	Vegetables; aubergines, (egg plants), fresh or chilled	143	143	-	143	0%	2.00	0%	↑ 22%
80450	Fruit, edible; guavas, mangoes and mangosteens, fresh or dried	141	141	-	141	0%	4.25	0%	↑ 23%
60110	Plants, live; bulbs, tubers, tuberous roots, corms, crowns and rhizomes, dormant	136	136	-	136	0%	14.28	0%	0%
80920	Fruit, edible; cherries, fresh	124	124	-	124	0%	6.00	0%	↑ 4%
160420	Fish preparations; fish minced or in forms n.e.c. in heading no. 1604, prepared or preserved	4,967	123	-	123	0%	3.13	0%	0%

STRENGTHENING REGIONAL AGRICULTURE EXPORTS FROM APEI+ COUNTRIES TO MAURITIUS AND SEYCHELLES

40221	Dairy produce; milk and cream, concentrated, not containing added sugar or other sweetening matter, in powder, granules or other solid forms, of a fat content exceeding 1.5% (by weight)	13,269	121	-	121	0%	3.25	0%	0%
30499	Fish; fish meat (whether or not minced) other than fillets, frozen, excluding swordfish (Xiphias gladius) and toothfish (Dissostichus spp.)	1,778	161	46	114	29%	4.09	0%	↑ 18%
10210	Bovine animals; live, pure-bred breeding animals	153	104	-	104	0%	2.50	0%	0%
30344	Fish; bigeye tunas (Thunnus obesus), frozen, (excluding fillets, livers, roes and other fish meat of heading no. 0304)	15,651	129	27	103	21%	1.61	0%	↑ 25%
Total products with low transport cost and high SPS risk		281,931	38,222	3,636	34,586				

HS 6 digit code	Hs 6 digit description	Total imports MUR & SYC	Potential Trade (lesser of total imports by MUR & SYC and total exports by APEI+)	Imports MUR & SYC from APEI+	Untapped potential trade	Current import share from APEI+	Median unit value (US\$/kg) cif Port Louis	Prerferential margin in MUR	Preferential margin in SYC
Products with low value / weight (high transport cost) and high SPS risk									
70310	Vegetables, alliaceous; onions and shallots, fresh or chilled	6,199	944	11	933	1%	0.44	0%	0%
80119	Nuts, edible; coconuts, fresh or dried, whether or not shelled or peeled, other than desiccated	788	453	1	452	0%	0.62	0%	↑ 25%
80510	Fruit, edible; oranges, fresh or dried	3,566	307	-	307	0%	0.57	0%	0%
Total products with high transport cost and high SPS risk		10,552	1,705	12	1,692				

Annex 2: Agriculture production and demand in APEI+ countries

Mauritius

1. **There is strong appetite in Mauritius to open opportunities for more regional agricultural trade with APEI countries.** The government of Mauritius is strongly committed to APEI objectives. In consultations for this study, meeting participants across a spectrum of government institutions and the private sector consistently expressed strong demand to see tangible results from APEI regional integration efforts. Meeting participants further said that increasing agriculture trade should be a high priority, especially for commodities that offer potential for value addition or foreign investment by Mauritian firms. On the export side, members of the Mauritian cane industry are eager to explore opportunities to expand and diversify, including by producing elsewhere in the region. On the import side, Mauritius relies heavily on imported agricultural products, and obtaining more good quality, reliable, and price-competitive supplies could strengthen food security and improve efficiencies.
2. **Despite the enthusiasm for regional integration, there is limited understanding in Mauritius of mainland agriculture markets, which are viewed as risky for many reasons.** Most people met for this project said they have little specific knowledge of supply conditions, price points, logistics, and other practical matters that need to be understood for a trade deal with mainland Africa to succeed. Due to the closer proximity of Madagascar, stronger business ties to this Indian Ocean country do exist. Time and again, however, the poor business environment in continental Africa and Madagascar were identified as an underlying constraint to new trade links. Sanitary and phytosanitary (SPS) risks were also raised as an important concern and limitation to increased agriculture trade.

Box 1: Sugar in Mauritius

The economy of Mauritius was historically based on sugarcane. In the industry's peak in the 1970s, the country produced over 700,000 tons of sugar annually and Mauritius was the 9th largest exporter, globally. Today, production has fallen to around 355,000 tons annually, and sugar's contribution to gross value-added (both as a raw product and as a refined, manufactured product) is under 1 percent, down from 4.4 percent as recently as 2001. As of 2018, the sugar sector employed 12,400 workers, down from 50,054 in 1981. This rapid decline reflects both the growth and diversification of Mauritius' economy away from sugar in recent decades and the intensifying pressures from Brazil and other large global producers who typically benefit from multiple complex subsidies. The Sugar Protocol of the Lomé Convention, which granted duty-free access to the EU at above-market prices, was phased out in 2009; and in 2017, the EU ended its own production quotas for sugar beet, further depressing EU and global sugar prices.

The sugar industry continues to adapt to the challenges, having moved progressively from raw into refined sugar production, derivative products (e.g. rum), and electricity production (from bagasse, leftover cane). In addition, some Mauritian sugar producers have invested in other countries in the region, where land and labor costs are lower.

All Mauritian sugar is marketed through the Mauritius Sugar Syndicate (MSS), and with declining world sugar prices, significant government support has been instituted in recent years to stabilize producer prices for exported sugar. This has led to a price wedge between the domestic and exported price of sugar, and industrial users of sugar have as a result reverted to imports rather than buying domestically. As this put further financial strain on the government to subsidize exported sugar, an 80 percent tariff on imported sugar was introduced in 2018. Imports have fallen considerably as a result, through some importers have switched to duty-free imports from SADC member countries in recent months. The Mauritian government is currently considering various reform options for the sugar sector and the future commercial viability of such imports is questionable as it is entirely driven by market distortions under the current system of price subsidies.

Key features of the agriculture sector and current agriculture trade in Mauritius

3. **Agriculture contributes 3.1 percent to GDP in Mauritius and employs around 41,300 people or about 8 percent of total workforce.**¹⁵ Sugar cane dominates the physical landscape with ~ 50,000 hectares devoted to this crop, equal to approximately 80 percent of the total area used for agriculture overall (see Box 1). Apart from sugar, a further 8,400 hectares are used to grow various fruits and vegetables and 600 hectares are used for tea. Fruit production consists mainly of banana, pineapple, litchi, and mango and meets just under 50 percent of the country's requirements. Livestock and poultry account for 22 percent of agriculture activity and fishing 7 percent (EDB, 2016). An overview of crop production in Mauritius and other APEI+ countries is provided in Annex 4.

4. **Owing to the limited availability of land for agriculture, Mauritius relies on imports for around 70 percent of its food requirements and is therefore vulnerable to rising global food prices.** In 2017, food imports accounted for US\$1.2 billion, representing 23 percent of total Mauritian imports. France was the leading source of Mauritian food imports with a market share of 12 percent, followed by Spain (10 percent), Australia (8 percent), South Africa (8 percent), and India (7 percent). Products imported include: meat and fish; certain fruits (e.g., oranges, mandarins, and grapes); pulses; milk and dairy products; fresh and frozen vegetables; coffee, tea and spices; cereals; edible oils; beverages; wheat and food preparations. Mauritius also imports items for production of animal feed, such as corn and oil cake and solid residues from soybean oil extraction, mostly from Argentina (U.S. Department of Commerce, 2019).

5. **Since the 2008 global food price crisis, government has been striving to promote food production and increase self-sufficiency.** Good progress been achieved in some parts of the agriculture economy with local farmers now producing much the country's fresh vegetable requirements apart from some specialty vegetables imported for the tourist industry, two thirds of its potato requirements, and one-third of its onion requirements (New Agriculturalist, 2012). The main products exported are preserved tuna (canned, in pouch and in jar), frozen tuna, fresh fish, refined sugar, special raw sugar, animal feed, fresh fruits (pineapples & lychee), cut flowers, instant noodle, tropical jam, honey, pickles, cake decorations, and spirits and wine (EDB, 2018).

6. **Livestock production is undertaken by about 3,500 people in Mauritius with the country producing around five percent of its total requirements in meat and two percent in milk.** The dairy sector produces around 5 million liters per year and government is working towards making the sector more productive by upgrading small regional cow breeding cooperatives and attracting investment in animal feed production. The poultry sector has benefitted from large commercial investments in breeder stock, broiler, and layer production to the point where Mauritius is nearly self-sufficient in chicken products. The country imports about US\$26.1 million of lamb, sheep, and goat meat per year, US\$19.9 million of beef, and US\$3.7 million of pork mainly from India, Australia, New Zealand, and South Africa. Food wholesalers and retailers met in Mauritius expressed a strong interest in developing new sources of supply for beef and other livestock products. While mainland APEI countries and Madagascar do produce cattle and pigs for domestic consumption, there are very few formal sector exports from these countries for animal health and food safety reasons.¹⁶

¹⁵ Source: Government of Mauritius: Supplement to the 2018/19 budget.

¹⁶ This may now change due to a large investment project in Madagascar supported by IFC focused on developing an EU certified abattoir and production chain for beef and other livestock. Unlike the mainland APEI countries, Madagascar is recognized by the OIE as free from FMD without vaccination.

7. **Because of the scarcity of land for field crops (and use of nearly all crop land by sugar), livestock production in Mauritius is structurally dependent on imported stock feed and stock feed ingredients.** Presently Mauritius imports around US\$23.7 million of corn, US\$22.6 million of soybean cake, US\$209,000 of soybeans, \$230,000 of sunflower cake, and US\$40,000 cottonseed cake annually mostly to manufacture stock feed. Mainland APEI countries and, to a lesser extent, Madagascar are large producers of these commodities, yet APEI+ countries together currently supply less than US\$16,000 of maize grain, US\$15,000 of sunflower and cottonseed cake, and less than \$11,000 of soybeans to Mauritius annually. In addition to manufacturing feed for domestic use, Mauritius exports around US\$8.7 million of made feed annually including US\$4.1 million to Madagascar and US\$2.8 million to Seychelles.

8. **Tea is another important crop for Mauritius with almost 600 hectares given to this enterprise.** Mauritius is renowned for producing very high quality, vanilla scented tea and exports around US\$408,000 of tea annually. During meetings for this assessment, several business people in Mauritius expressed interest in tea from Malawi, both as an investment prospect and as a possible import for blending and packaging with Mauritian tea.

9. **Beyond the primary sector, Mauritius has a reasonably advanced food processing industry that relies, in part, on imported raw material.** According to the Economic Development Board of Mauritius (2019), the country's main agri-food products are edible oil, wheat flour, canned vegetables, sugar confectionary, fruit juices, spices, pickles and chutneys, and fruit paste plus animal feed discussed already. Apart from large canners manufacturing juices, canned fruits, soups, beans, and other goods, there are many wholesalers who import dry pulses for retail packing and local distribution. One historic sugar estate is a both a tourist attraction and working food processor that manufactures various jams and jellies made of local fruit and flash frozen fruit and fruit pulp imported from Madagascar.

10. **Seafood imports are also an important area of trade for Mauritius to supply local consumers and the island's large tourist industry.** Although Mauritius itself has a large fishing industry, local waters are not productive for prawns, lobster, crab, octopus, and other species widely fished off the coast of Mozambique and Madagascar. Around 25 percent of crustacean and mollusk imports by Mauritius are from Madagascar with the balance coming mainly from Asia.

Mauritius agriculture trade data

11. **On average from 2012 to 2017, annual imports of agriculture and non-agriculture goods by Mauritius from other APEI countries were US\$115.1 million.** These imports were spread over 493 product lines at the HS4 level. This is against US\$5.2 billion total annual imports from all countries over 1,179 product lines at the 4-digit level. In total, therefore, APEI countries supplied just over 2.2 percent of total Mauritian imports by value and 41.8 percent of imports by type. In agriculture, Mauritius imported US\$1.2 billion in total from the world market of which US\$100.3 million (7.4 percent) was from APEI+ countries.

12. **Table 46 shows the top-35 agriculture imports by Mauritius between 2012 and 2017.** For these leading imports, APEI+ countries contributed 10.5 percent of the total value, equal to US\$91.6 million annually. Table 47 further down shows the top-35 commodities imported from APEI+ countries. Across these leading APEI+ products, Mauritius imported US\$412.5 million of total goods per year of which US\$98.6 million (23.9 percent) was from APEI+ countries.

13. **As shown by the trade data, frozen, un-filleted fish is, by far, the most valuable agriculture import to Mauritius from the world and from the APEI+ region.** Nearly all this product tuna caught in

waters near Seychelles that is imported by Mauritius to supply its canneries. Of these total imports, US\$48.9 million is reported as originating in the Seychelles yet the remaining tuna is largely also caught by French and Spanish vessels based in Seychelles.

Table 46: Mauritius leading agriculture imports (US\$ '000)

MAURITIUS WORLD IMPORTS HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as % Total
	MDG	MWI	MOZ	SYC	ZMB				
030342: Fish; yellowfin tunas, frozen	4.0			25,331.0		25,335.1	79,851.1	105,186.1	24.1%
030343: Fish; skipjack or bonito, frozen				18,295.6		18,295.6	74,241.6	92,537.2	19.8%
030379: Fish; frozen, n.e.c.	271.2			1,611.0		1,882.2	63,246.9	65,129.1	2.9%
240220: Cigarettes; containing tobacco							64,434.1	64,434.1	0.0%
100190: Cereals; wheat other than durum					1.9	1.9	48,118.5	48,120.4	0.0%
520100: Cotton; not carded or combed	5,501.0	1,495.0	13,322.7		4,546.0	24,864.7	17,493.8	42,358.5	58.7%
100630: Cereals; rice, unbroken							39,452.1	39,452.1	0.0%
040210: Dairy; milk and cream							37,221.0	37,221.0	0.0%
210690: Food preparations; n.e.c.	2.3			6.6		8.8	29,844.7	29,853.5	0.0%
170111: Sugars; cane sugar, raw							28,270.2	28,270.2	0.0%
100590: Cereals; maize grain	15.9					15.9	23,702.6	23,718.5	0.1%
230400: Oil-cake from extraction of soya-bean oil							22,604.3	22,604.3	0.0%
090500: Spices; vanilla	16,703.6					16,703.6	4,238.4	20,942.0	79.8%
040630: Dairy; cheese							19,962.7	19,962.7	0.0%
150710: Vegetable oils; soya-bean oil	7.8					7.8	19,792.9	19,800.8	0.0%
030344: Fish; bigeye tunas, frozen			26.6	3,594.3		3,620.9	12,029.9	15,650.7	23.1%
051191: Fish unfit for human consumption				77.4		77.4	14,801.2	14,878.5	0.5%
040229: Dairy; milk and cream, containing sugar		0.4				0.4	14,344.6	14,345.0	0.0%
180690: Chocolate and other preps with cocoa	0.1					0.1	13,680.0	13,680.1	0.0%
010290: Bovine animals; live							12,981.3	12,981.3	0.0%
190590: Food preparations; bakers' wares	0.9					0.9	12,625.1	12,626.0	0.0%
020230: Meat; of bovine animals, boneless, frozen							12,591.2	12,591.2	0.0%
040221: Dairy ; milk and cream, in powder							12,560.1	12,560.1	0.0%
220421: Wine; still	0.2		0.0	0.0		0.2	11,008.7	11,008.9	0.0%
190531: Food preparations; sweet biscuits	88.8			0.4		89.2	10,556.3	10,645.6	0.8%
170199: Sucrose; chemically pure	0.1					0.1	10,438.8	10,438.9	0.0%
210390: Sauces; mixed condiments and seasonings	0.2			0.0		0.3	9,794.0	9,794.3	0.0%
030268: Fish; toothfish, fresh or chilled							9,110.9	9,110.9	0.0%
030613: Crustaceans; shrimps and prawns, frozen	677.7		10.0			687.7	8,286.9	8,974.6	7.7%
220210: Waters; containing added sugar or flavoured							8,843.0	8,843.0	0.0%
220830: Whiskies	0.2		0.0	42.1		42.3	8,646.6	8,688.9	0.5%
100640: Cereals; rice, broken							8,041.2	8,041.2	0.0%
020442: Meat; of sheep/lamb, with bone, frozen							7,459.5	7,459.5	0.0%
190110: Food preparations; infant use, for retail sale							7,438.7	7,438.7	0.0%
020443: Meat; of sheep/lamb, boneless, frozen							7,307.0	7,307.0	0.0%
Top-35 Ag. Imports	23,274.1	1,495.4	13,359.4	48,958.4	4,547.8	91,635.1	785,019.8	876,654.9	10.5%

Source: UNCOMTRADE data (annual average values, 2012-17).

14. **The second most valuable agriculture import by Mauritius from the APEI+ region is cotton lint used by the spinning and textile industry.** Together, Mozambique, Madagascar, Malawi, and Zambia export US\$25 million of cotton to Mauritius annually, equal to 57 percent of all cotton imports by Mauritius. Mozambique exports US\$13.4 million of cotton annually to Mauritius equal to 54 percent of imports from the APEI+ countries 31 percent of total world imports. Madagascar exports US\$5.5 million of cotton to Mauritius annually equal to 74 percent of total Madagascar cotton exports. Zambia exports around \$4.5 million of cotton to Mauritius annually and Malawi US\$1.6 million.

15. **Other than cotton and frozen fish, APEI+ countries barely appear on the list of top-35 world imports to Mauritius except for Madagascar.** Even on the list of top-35 APEI imports, Malawi, Mozambique, and Zambia barely appear as important sources of supply. One partial exception to this is that Malawi supplied an average of US\$67,800 of dried legumes to Mauritius over the period covered.

Other commodities widely produced by Malawi, Mozambique, and Zambia, however, have generally not found a market in Mauritius to this point.

Table 47: Mauritius leading agriculture imports from APEI+ countries (US\$ '000)

MAURITIUS APEI+ IMPORTS HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as % Total
	MDG	MWI	MOZ	SYC	ZMB				
030342: Fish; yellowfin tunas, frozen	4.0			25,331.0		25,335.1	79,851.1	105,186.1	24.1%
520100: Cotton; not carded or combed	5,501.0	1,495.0	13,322.7		4,546.0	24,864.7	17,493.8	42,358.5	58.7%
030343: Fish; skipjack or bonito, frozen				18,295.6		18,295.6	74,241.6	92,537.2	19.8%
090500: Spices; vanilla	16,703.6					16,703.6	4,238.4	20,942.0	79.8%
030344: Fish; bigeye tunas, frozen			26.6	3,594.3		3,620.9	12,029.9	15,650.7	23.1%
071350: Veg, legumes; broad beans, dried, shelled	2,052.6					2,052.6	246.6	2,299.2	89.3%
030379: Fish; frozen, n.e.c.	271.2			1,611.0		1,882.2	63,246.9	65,129.1	2.9%
030759: Molluscs; octopus	1,359.4			0.2		1,359.6	312.5	1,672.0	81.3%
030613: Crustaceans; shrimps and prawns, frozen	677.7		10.0			687.7	8,286.9	8,974.6	7.7%
120220: Ground-nuts; shelled, not roasted	551.6					551.6	981.2	1,532.8	36.0%
030614: Crustaceans; crabs, frozen	432.2			0.5		432.7	73.8	506.5	85.4%
091099: Spices; n.e.c.	386.9					386.9	641.0	1,027.9	37.6%
071333: Veg, legumes; kidney beans, dried, shelled	246.8			4.0		250.9	741.3	992.1	25.3%
030429: Fish; fillets, frozen	218.8			11.2		230.0	1,915.1	2,145.0	10.7%
520300: Cotton; carded or combed		65.0	105.6			170.6	1,410.8	1,581.4	10.8%
071339: Veg, legumes; n.e.c., dried, shelled	157.7					157.7	86.3	244.0	64.6%
030611: Crustaceans; rock lobsters, frozen	156.3					156.3	505.2	661.5	23.6%
090700: Spices; cloves	147.1					147.1	56.1	203.2	72.4%
030269: Fish; n.e.c.	20.5		21.7	67.8		110.1	131.1	241.1	45.6%
090111: Coffee; not roasted or decaffeinated	109.1					109.1	207.7	316.7	34.4%
030749: Molluscs; cuttle fish and squid	104.3					104.3	1,877.6	1,981.9	5.3%
071390: Veg, legumes; n.e.c., shelled	34.4	67.8				102.2	1,957.3	2,059.5	5.0%
030419: Fish; fillets and other meat, fresh or chilled	61.3			28.5		89.9	1,041.0	1,130.9	7.9%
190531: Food preparations; sweet biscuits	88.8			0.4		89.2	10,556.3	10,645.6	0.8%
051191: Fish unfit for human consumption				77.4		77.4	14,801.2	14,878.5	0.5%
120210: Ground-nuts; in shell, not roasted or cooked	73.6					73.6	140.3	214.0	34.4%
090411: Spices; pepper, neither crushed nor ground	73.0					73.0	431.7	504.6	14.5%
030751: Molluscs; octopus, live, fresh or chilled	70.7					70.7	32.6	103.4	68.4%
230990: Preparations used in animal feeding	67.6					67.6	6,007.8	6,075.4	1.1%
030349: Fish; tuna, frozen, n.e.c.	32.2			31.9		64.1	1,863.1	1,927.1	3.3%
030499: Fish; fish meat other than fillets, frozen	46.3			13.5		59.8	1,704.8	1,764.6	3.4%
071310: Veg, legumes; peas, shelled, dried	59.2					59.2	2,495.3	2,554.4	2.3%
030612: Crustaceans; lobsters (homarus spp.), frozen	57.5		0.0			57.5	1,838.1	1,895.6	3.0%
190532: Food prep.; waffles and wafers	57.0					57.0	2,525.2	2,582.1	2.2%
081190: Fruit, edible; fruit and nuts n.e.c.	52.8					52.8		220.2	24.0%
Top-35 Ag. Imports from APEI+	29,822.3	1,627.8	13,486.7	49,067.3	4,546.0	98,550.0	313,969.2	412,519.2	23.9%

Source: UNCOMTRADE data (annual average values, 2012-17).

Seychelles

16. **Seychelles relies heavily on food imports, including imports for the tourist industry.** Over the last ten years, the country has been importing up to 70 percent of its agri-food requirements equal to about US\$250 million annually. Rice, the food staple, is not produced in Seychelles and all domestic requirements, about US\$6.1 million annually, need to be imported. In total, agriculture imports account for around a quarter of total goods imports, or close to a fifth of total GDP. The fishing industry provides for around 90 percent commodity exports from Seychelles.

17. **The high figure for food imports by Seychelles, needs to be placed in the context of the country's large tourism industry, which dominates the economy and demands many high value food products.** The number of tourists visiting Seychelles has been growing rapidly. In 2017, there were around 350,000 tourist arrivals up from 303,000 in 2016 and 275,000 in 2015 (National Bureau of Statistics, 2018). Consequently, a sizable share of Seychelles' total food demand is a derived demand from tourists, and as

such is linked to hard currency earnings and does not expose the country to food security risk.¹⁷ Large hotels import many of the foods they require on their own, particularly dry goods that can be procured in bulk. For fresh items and some frozen meats and seafood, the industry is served by wholesalers who consolidate food shipments and otherwise supply large and small hotel operators.

Key features of the agriculture sector and current agriculture trade in Seychelles

18. **The agriculture sector in Seychelles is small, both in absolute and relative terms to other parts of the economy.** Agricultural production and fishing combined account for about 2.5 percent of GDP and employ only 3 percent of the labor force.¹⁸ Potential for land-based agriculture is limited because Seychelles has very little arable land, as it has a total land area of under 500 km², most of which is mountainous and heavily wooded, particularly on the inner islands. Historically, the country relied on cash crops such as copra (dried coconut meat), vanilla, nutmeg, and cinnamon, which are still grown in small quantities but have decreased in recent years as fruits and vegetables grown for local consumption have increased. Sweet potatoes, yams, breadfruit, and cassava are produced in backyard gardens and small farms. Oranges, lemons, grapefruit, bananas, and mangoes are also produced in Seychelles and help meet the local requirement when in season. The most popular vegetable crop is chili peppers with some 15 percent of households growing chilis in backyard gardens. The Solei Company Ltd., a local processor, manufactures chili sauce, tomato ketchup, and fruit jams that are popular in the local market and may offer export potential. A limited amount of honey is also produced in Seychelles.

19. **Livestock production in Seychelles is focused on chickens, pigs, goats, and rabbits that can be raised on small land holdings.** There are only around 500 cattle in the country and half of all cattle owners keep just one animal for milk and manure. Market oriented beef and dairy production are therefore minimal. By comparison, chicken and pig production tend to larger-scale and more market oriented. This is particularly true for poultry where the sector is dominated by large producers some of whom raise broilers in 10,000 bird batches for a total production around 500,000 birds per year (Seychelles News Agency 2017). Since the removal of tariffs on imported chicken meat in April 2010, however, broiler producers have struggled to compete with imports to the point where the industry is barely 10 percent of its former size (National Bureau of Statistics, 2013). Brazil, USA, and France are the leading suppliers of poultry meat to Seychelles with around US\$5.2 million total imports per year. On the layer side, there are around 23 active farms including some of who keep 25,000 hens and produce around 500 trays per day. Total egg production is around 37 million per year making Seychelles is nearly self-sufficient (Seychelles News Agency, 2017). As in Mauritius, livestock production in Seychelles depends on imported feed and feed ingredients.

20. **The largest single player in the domestic food market is the Seychelles Trading Company (STC).** STC is a parastatal body with a legal mandate to ensure a steady and affordable supply of 14 strategic products to local consumers.¹⁹ To achieve this goal, STC has operates four supermarkets and a large hypermarket in Victoria that sells many different food and non-food products. STC also distributes commodities through around 20 independent retail shops and mini-markets on Mahé, Praslin, and La Digue. As explained by STC management, profits from the retail and distribution business go to support

¹⁷ According the National Bureau of Statistics (NBS, 2017), 88.7 percent of households can be classified as food secure or mildly food insecure and 11.3 percent as moderately or severely food insecure and, of the latter, up to 3.7 percent may severely food insecure.

¹⁸ Many of the fishing vessels based in Seychelles are foreign registered and the catch is not counted in national accounts or trade statistics.

¹⁹ These products are: rice, sugar, salt, milk powder, oranges, apples, onion, potatoes, margarine, cooking oil, infant formula, lentils, wheat flour, and toilet paper.

the importation and affordable pricing of strategic commodities. Across the country there are around 200 food importers of which 15-20 are large, and five to six are dominant including STC.

21. **The STC and other agri-food importers said they are open to introducing new products and finding new sources of supply.** While few importers have experience importing from mainland African countries, several packaged foods (breakfast cereal, juice, biscuits, potato crisps, etc.) do come from South Africa. Due to new direct airlinks, an increasing number of products are also coming from Ethiopia and Kenya including strawberries from Ethiopia which was identified as a rapidly growing import. For processed foods including honey, chili sauce, jams, and peanut butter that might be supplied by APEI+ countries, importers said that brand identity is important so can be difficult to introduce a new product but that there is a strong and growing demand for organic certified foods that could also be an opportunity.

22. **As in Mauritius, SPS concerns have a major impact on the prospects for increased agriculture trade with Seychelles.** Several importers in Seychelles said they were aware Madagascar has very good onions, litchi, and other products they would like to import, but said this is not allowed because the Seychelles National Biosecurity Agency (NBA) has not done a bio-safety assessment for these products. For its part, the STC indicated it can help pay the cost of SPS risk assessment needed for new product admissibility which, for meats and fresh fruits and vegetables, typically requires a visit by the NBA to inspect conditions in the exporting country. For dry commodities and processed foods, the admissibility requirements are easier and mainly focus on proof of fumigation for grains and compliance with food safety standards for packaged goods.

23. **Transport linkages also have a major influence on the opportunities for increased agriculture trade between Seychelles and APEI+ countries.** There are very few sea routes between mainland Africa and the Port of Victoria and containerized goods from all parts of the world mostly pass through Salalah or Jebel Ali. Consequently, it is often just as easy and cost effective (if not easier and more cost effective) for well-connected European and Asian countries to supply products to Seychelles than geographically closer-by African countries. For all routes, transit times were said to be long and delivery schedules unreliable. Other than ocean freight, a great many products including all perishable foods are shipped to Seychelles by air. There is a growing number of passenger flights to Seychelles including daily flights from Kenya and Ethiopia with cargo capacity. Emirates now has two flights per day to Seychelles and flies daily to Zambia suggesting a potential for connections through Dubai.

Seychelles agriculture trade data

24. **Total annual imports of agriculture and non-agriculture goods by Seychelles from APEI+ countries are around US\$48.1 million.** From 2012-2017, these imports were spread over 848 product lines at the HS4 level. This compares with US\$1.18 billion total annual imports from all countries over 1,170 product lines at the 4-digit level. In total, therefore, APEI+ countries supplied just over 4 percent of total imports to the Seychelles by value and 72 percent of imports by type. While these figures appear to suggest a relatively greater degree of trade integration between Seychelles and the APEI+ region than Mauritius (as described above, APEI+ countries only contribute 2 percent of total Mauritian imports by value and 41.8 percent of imports by type), nearly all of Seychelles' APEI+ trade was with Mauritius. Madagascar, Malawi, Mozambique, and Zambia only exported a cumulative total of US\$35.3 million of all types of goods to the Seychelles in the years from 2012 and 2017 equal to US\$5.3 million per year on average. Of these goods, just US\$102,900 per year were agriculture commodities and, of the agriculture commodities, 74 percent was unmanufactured tobacco from Malawi.

25. **Table 48 shows the top-35 agri-food imports by Seychelles from all world markets.** As with Mauritius, frozen non-filleted fish (specifically tuna) is, by far, the most valuable agri-food import for Seychelles. On balance, of course, Seychelles is major fish exporter and the large amount of imports shown in the trade data is because of how the catch from foreign registered boats is recorded. Seychelles has a large cannery, yet roughly two-thirds of tuna exported from the Seychelles is whole, frozen fish. Consistent with the importance of tourism to Seychelles, many of the leading agri-food imports are commodities used by the hospitality industry. Whisky is the fourth most valuable agri-food import while beer ranks sixth and wine seventh. South Africa supplies about 30 percent of wine imports to Seychelles.

Table 48: Seychelles leading agriculture imports (US\$ '000)

SEYCHELLES LEADING AG. IMPORTS HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as % Total
	MDG	MWI	MUS	MOZ	ZMB				
030349: Fish; tuna, frozen, n.e.c.			654.0			654.0	120,100.5	120,754.5	0.5%
150990: Vegetable oils; olive oil other than virgin		0.0	2.6			2.6	6,455.4	6,458.0	0.0%
100630: Cereals; rice		0.0	9.7			9.7	6,001.6	6,011.3	0.2%
220830: Whiskies			7.4			7.4	5,541.5	5,548.9	0.1%
030379: Fish; frozen, n.e.c.							5,482.5	5,482.5	0.0%
220300: Beer; made from malt			540.6			540.6	4,419.9	4,960.5	10.9%
220429: Wine; still containers > 2 liters			25.3			25.3	4,439.4	4,464.8	0.6%
240120: Tobacco; stemmed or stripped		15.2				15.2	4,184.3	4,199.6	0.4%
151219: Vegetable oils; sunflower or safflower oil			37.7			37.7	4,129.6	4,167.3	0.9%
020230: Meat; of bovine animals, boneless, frozen							4,042.6	4,042.6	0.0%
230990: Preparations used in animal feeding			3,270.5			3,270.5	368.1	3,638.6	89.9%
040229: Dairy; milk and cream, powder			34.9			34.9	3,573.3	3,608.2	1.0%
040690: Dairy; cheese			160.2			160.2	3,186.8	3,347.0	4.8%
150910: Vegetable oils; olive oil, virgin			8.1			8.1	3,267.4	3,275.6	0.2%
020714: Meat and edible offal, chicken pieces, frozen							3,239.8	3,239.8	0.0%
190531: Food preparations; sweet biscuits			26.1			26.1	2,779.3	2,805.4	0.9%
220210: Waters; containing added sugar or flavoured			21.6			21.6	2,604.0	2,625.6	0.8%
110100: Wheat or meslin flour	0.0	0.0	1,898.0	0.0		1,898.0	593.0	2,491.1	76.2%
220410: Wine; sparkling			29.1			29.1	2,161.3	2,190.3	1.3%
210690: Food preparations; n.e.c.	0.1		80.7			80.8	2,012.2	2,093.0	3.9%
020712: Meat and edible offal; chicken whole, frozen							1,726.6	1,726.6	0.0%
040310: Dairy; yoghurt			28.2			28.2	1,593.3	1,621.5	1.7%
030613: Crustaceans; shrimps and prawns, frozen	1.4					1.4	1,571.7	1,573.1	0.1%
210390: Sauces; condiments and seasonings		0.0	15.2			15.2	1,435.5	1,450.6	1.0%
040510: Dairy; derived from milk, butter			0.1			0.1	1,446.1	1,446.2	0.0%
220421: Wine; still, containers < 2 liters			14.1			14.1	1,422.4	1,436.5	1.0%
020329: Meat; of swine, frozen							1,406.3	1,406.3	0.0%
180690: Chocolate and other preps containing cocoa		0.0	4.9			4.9	1,263.7	1,268.6	0.4%
240220: Cigarettes; containing tobacco			74.7			74.7	1,154.7	1,229.4	6.1%
170199: Sucrose; chemically pure, in solid form			44.3			44.3	1,161.0	1,205.3	3.7%
220870: Liqueurs and cordials			9.2			9.2	1,186.1	1,195.3	0.8%
200990: Juices; mixtures, not containing spirit			12.1			12.1	1,154.8	1,167.0	1.0%
070200: Vegetables; tomatoes, fresh or chilled							1,087.8	1,087.8	0.0%
160100: Meat preps; sausages of meat, offal or blood			0.0			0.0	1,043.5	1,043.5	0.0%
040120: Dairy; milk and cream, not concentrated			97.3			97.3	943.9	1,041.2	9.3%
Top-35 Ag. Imports	1.5	15.2	7,106.6	0.0	-	7,123.4	208,180.1	215,303.5	3.3%

Source: UNCOMTRADE data (annual average values, 2012-17).

26. **Table 49 looks in closer detail at leading imports by Seychelles from APEI+ countries.** While these data again show that nearly all APEI imports are from Mauritius, many of these commodities are made from raw materials originating elsewhere. Animal feed and wheat flour imported from Mauritius are the top two agri-food import by Seychelles from the APEI+ region but are made of commodities imported

from outside APEI+. Other than unmanufactured tobacco from Malawi, Madagascar has exported a small amount of maize seed and flash frozen fruits to Seychelles. Zambia and Mozambique did not export any agri-food commodities to Seychelles from 2012-2017.

Table 49: Seychelles leading agriculture imports from APEI+ countries (US\$ '000)

SEYCHELLES LEADING AG. IMPORTS FROM APEI+ HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as % Total
	MDG	MWI	MUS	MOZ	ZMB				
230990: Preparations used in animal feeding			3,270.5			3,270.5	368.1	3,638.6	89.9%
110100: Wheat or meslin flour	0.0	0.0	1,898.0	0.0		1,898.0	593.0	2,491.1	76.2%
030349: Fish; tuna, frozen,			654.0			654.0	120,100.5	120,754.5	0.5%
220300: Beer; made from malt			540.6			540.6	4,419.9	4,960.5	10.9%
040690: Dairy; cheese			160.2			160.2	3,186.8	3,347.0	4.8%
220290: Non-alcoholic beverages; no fruit or veg juice			122.3			122.3	593.5	715.8	17.1%
220210: Waters; not containing added sugar or flavor			105.4			105.4	278.6	384.0	27.5%
040120: Dairy; milk and cream, 1%-6% fat			97.3			97.3	943.9	1,041.2	9.3%
040130: Dairy produce; milk and cream, > 6% fat			94.9			94.9	807.6	902.6	10.5%
010511: Poultry; live chickens not more than 185g			88.2			88.2	3.8	92.0	95.8%
210690: Food preparations; n.e.c.	0.1		80.7			80.8	2,012.2	2,093.0	3.9%
240220: Cigarettes; containing tobacco			74.7			74.7	1,154.7	1,229.4	6.1%
040291: Dairy produce; milk and cream		0.0	67.9			67.9	614.7	682.6	9.9%
230910: Dog or cat food; put up for retail sale			55.0			55.0	235.1	290.1	19.0%
240130: Tobacco refuse		52.9				52.9	377.8	430.7	12.3%
030342: Fish; yellowfin tunas, frozen			52.6		-	52.6	866.9	919.4	5.7%
220600: Beverages, fermented (cider, perry, mead)			47.8			47.8	333.2	381.0	12.6%
170199: Sucrose; chemically pure, in solid form			44.3			44.3	1,161.0	1,205.3	3.7%
151219: Vegetable oils; sunflower safflower oil			37.7			37.7	4,129.6	4,167.3	0.9%
040229: Dairy; milk and cream, powder, +1.5% fat			34.9			34.9	3,573.3	3,608.2	1.0%
220410: Wine; sparkling			29.1			29.1	2,161.3	2,190.3	1.3%
040310: Dairy produce; yoghurt			28.2			28.2	1,593.3	1,621.5	1.7%
190531: Food preparations; sweet biscuits			26.1			26.1	2,779.3	2,805.4	0.9%
220429: Wine; still, containers > 2 litres			25.3			25.3	4,439.4	4,464.8	0.6%
240110: Tobacco, (not stemmed or stripped)		23.3				23.3	1.2	24.5	95.2%
220210: Waters; sweetening matter or flavored			21.6			21.6	2,604.0	2,625.6	0.8%
190490: Food preps; cereals ex. maize, prepared			16.5			16.5	351.8	368.3	4.5%
100510: Cereals; maize (corn), seed	14.7		1.5			16.1	59.9	76.0	21.2%
230230: Bran; of wheat			16.1			16.1	30.9	47.0	34.2%
040110: Dairy; milk and cream, fat < 1%			15.7			15.7	259.5	275.2	5.7%
240120: Tobacco; stemmed or stripped		15.2				15.2	4,184.3	4,199.6	0.4%
210390: Sauces; mixed condiment and seasonings		0.0	15.2			15.2	1,435.5	1,450.6	1.0%
220421: Wine; still, in containers < 2 litres			14.1			14.1	1,422.4	1,436.5	1.0%
170490: Sugar confectionery; not containing cocoa			12.8			12.8	836.7	849.5	1.5%
190230: Food preparations; prepared pasta		0.0	12.8			12.8	589.8	602.6	2.1%
Top-35 Ag. Imports from APEI+	14.8	91.5	7,749.2	0.0	-	7,855.5	167,913.7	175,769.2	4.5%

Source: UNCOMTRADE data (annual average values, 2012-17).

27. Although there has been little trade so far, Seychelles imports many types of commodities exported by Mozambique, Malawi, Zambia, and Madagascar. Zambia is now a large exporter of animal feed and stock feed ingredients that are in strong demand in Seychelles. Malawi is similarly a relatively large and reliable supplier of soybean oilcake. Similarly, Mozambique and Madagascar are large exporters of frozen prawns that rank as the 23rd most valuable agri-food import by Seychelles.

Madagascar

28. Between 2012 and 2017, Madagascar exported an annual average of US\$2.53 billion of all types of goods on the world market of which US\$988.3 million (39 percent) were agri-food commodities. Of Madagascar's total exports, US\$50.8 million (2 percent) went to other APEI+ countries, primarily

Mauritius. Of the exports to APEI+ countries, US\$31 million (61 percent) were agriculture commodities nearly all of which was to Mauritius. Of Madagascar's global agriculture exports, 3 percent was to the APEI+ region.

Key features of the agriculture sector and current agriculture trade in Madagascar

29. **Agriculture is an important sector in Madagascar with more than 80 percent of the population depending on agriculture for their income.** Economic performance overall has been steadily improving since the return of constitutional order in 2014, with notably strong growth in the services sector. Nevertheless, agriculture has performed poorly. According to recent data, 77 percent of the rural population lives below the poverty line and between 2014 and 2017, the agricultural sector contracted by an average of 0.8 percent (World Bank, 2018). As other sectors have grown more quickly, agriculture exports including fisheries currently make up 39 percent of Madagascar's total export basket down from 62 percent in 1995.

30. **The marketing of all crops, except to some extent sugar and cotton, is dominated by the collector (trader) system.** As described in the 2015 Diagnostic Trade Integration Study Update (World Bank, 2015), main domestic traders and exporters depend on a network of collectors in towns with populations of between 5,000 and 10,000. Such towns normally have 2 or 3 collectors who are provided with cash to accumulate stocks until justifying sending a truck. These collectors typically work with a network of sub-collectors based in rural areas. Because of the seasonality of their work, collectors are often prominent local entrepreneurs, commonly big farmers, with substantial liquidity during harvest time. Due to their contact with smallholders, collectors are sometimes involved with the promotion of new crops and delivery of extension advice. They sometimes also engage in distribution of inputs on credit that is often repaid in-kind when delivering the agreed product for trade.

31. **Madagascar exports many high-value agriculture commodities to Europe and other markets with demanding buyer and market entry requirements.** Prior pest risk analysis done together with importing countries together with ongoing investments by commercial exporters in product certification and offshore laboratory analysis have made this possible. Madagascar is the world's leading producer of bourbon vanilla and second largest producer of cloves, nearly all of which comes from smallholder producers. The country is also a large exporter of farmed prawns that are raised on an industrial scale and shipped as a frozen product mainly to France. Madagascar also exports smaller quantities of wild-caught prawns, crabs, and lobsters, octopus, and cuttlefish that are exported frozen and live to buyers in Europe and Asia. There are few commercial fishing vessels in Madagascar and exporters of wild-caught seafood mainly use the collector system to procure from artisanal producers. Leading operators and have developed quality assurance and traceability systems to comply with EU health and safety requirements. Madagascar also exports gourmet honey and shelf-ready supermarket vegetables to the EU that are grown by and collected from smallholders.

32. **Madagascar has much stronger trade ties with Mauritius compared to the mainland APEI nations.** In the early 2000s, Mauritius and Madagascar undertook joint pest risk analysis (PRA) covering many types of agriculture commodities that allowed these trade links to develop. From 2012-2017, Madagascar exported an average of US\$31 million of agriculture commodities to Mauritius annually with vanilla (US\$16.7 million annually), cotton (US\$5.5 million annually), dried legumes (US\$2.1 million annually), octopus (US\$1.3 million annually), crustaceans (US\$0.7 million annually), and groundnuts (US\$0.5 million) being the main commodities. Exports of dried legumes have grown strongly in recent years with several firms now exporting to Mauritius and saying there is good potential to expand.

Agriculture exports to Seychelles are significantly more limited at only US\$27,000 on average per year with maize seed, vanilla, and frozen fruit juice being the main products.

33. **On the other hand, many exporters in Madagascar said that Mauritius is a difficult market and provides little profit compared with domestic sales or export to Europe and other global markets.** One good example is the case of potatoes and onion. Because of past PRA work, Madagascar is one of just seven countries in the world that is eligible to export onions to Mauritius and one of only six countries eligible to export potatoes. Imports are largely handled by the Mauritian Agriculture Marketing Board (AMB) which procures specific types of potato and onion exclusively by tender. Imports from Madagascar were said by AMB to have been important in the past with several millions of dollars of trade annually but have now virtually stopped. According to the AMB, the Malagasy potatoes and onions were of very good quality but was sometimes problems from a plant health point of view with supplies coming from parts of the country not covered by the PRA. Exporters in Antananarivo confirmed these challenges and said they lost interest in the Mauritian market because of the uncertainty for winning a tender after investing to meet the AMB's demanding requirements. While improved contracting arrangements could help manage these risks to the benefit of the AMB and Malagasy exporters alike, all former exporters met in Madagascar said it was easier and more profitable to sell potatoes and onion domestically. Presently, around two-thirds of potato and onion imports to Mauritius come from India, which the AMB says is the best able to meet their demands for quality, SPS assurance, and timeliness of delivery.

34. **Although Madagascar has over 400,000 square kilometers of arable land, rice is by far the dominant crop and the country is a strong net importer of maize, soybean cake, and other stock feed ingredients.** As in other developing countries, urban growth has led to a surge in demand for poultry and other livestock products to the point Madagascar now imports US\$19.7 million of made animal feed and around US\$3 million of maize grain and US\$7.6 million of soybean cake that is used mostly to manufacture feed locally. More than half of the made animal feed imported to Madagascar is supplied by France and 20 percent comes from Mauritius. Much of the maize and soybean cake is also imported through Mauritius including imports by a large Mauritian agriculture enterprise with investments in poultry production and marketing in Madagascar.

35. **Madagascar does not allow the importation or production of genetically modified (GM) crops.** The same applies in Malawi and Zambia. Except for white maize from southern Africa, there is little non-GM maize in the world and all GM grain that enters Madagascar must be broken to prevent planting. As effective as this may be at preventing the entry of GMOs, broken maize is not generally a traded commodity and has a much shorter shelf life than whole maize including non-GM maize that could potentially be supplied by mainland APEI+ countries.

36. **Toamasina is the main sea port of Madagascar.** There are regular services between Toamasina and Port Louis in Mauritius. While the opportunity to use bulk handling facilities in Port Louis provides large soybean and maize producers in Latin America an advantage in the Mauritian market, there are no bulk handling facilities for grains in Madagascar. Since all grains imported to Madagascar must be containerized, this puts mainland APEI countries on a more equal competitive footing with parts of the world where bulk handling is possible. Other than Toamasina, Madagascar is served by several smaller ports dotted around the coast.

Madagascar agriculture trade data

37. **Between 2012 and 2016, Madagascar exported an annual average of US\$2.5 billion of all types of goods on the world market of which US\$998.3 million (39 percent) were agri-food commodities.** Of

Madagascar's total exports, US\$50.8 million (2 percent) went to other APEI+ countries, primarily Mauritius. Of exports to the APEI+ region, around 61 percent (US\$31 million) were agriculture commodities. Of Madagascar's total agriculture exports, 3 percent was to APEI+ countries.

38. **Table 50 lists the top-35 agri-food exports from Madagascar by market destination.** As shown, nearly all APEI+ exports have been to Mauritius where Madagascar has sold a diverse range of products including different types of spices, seafood products, legumes, cotton, coffee, and some edible fruits. Madagascar has also exported a limited number of spices and seafood products to Seychelles. There have been almost zero agriculture exports to Mozambique or Zambia and zero agriculture exports to Malawi.

Table 50: Madagascar leading agriculture exports (US\$ '000)

MADAGASCAR LEADING EXPORTS HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as % Total
	MWI	MUS	MOZ	SYC	ZMB				
090500: Spices; vanilla		16,703.6		3.3		16,706.9	355,701.7	372,408.6	4.5%
090700: Spices; cloves (whole fruit, cloves and stems)		147.1		0.4	1.6	149.1	186,245.8	186,394.9	0.1%
030613: Crustaceans; shrimps and prawns, frozen		677.7		1.1		678.8	91,077.1	91,755.9	0.7%
081090: Fruit, edible; fruits n.e.c., fresh				0.0		0.0	59,752.5	59,752.5	0.0%
160414: Fish preparations; tunas, prepared or preserved							46,200.6	46,200.6	0.0%
180100: Cocoa beans; whole or broken, raw or roasted							27,102.3	27,102.3	0.0%
071339: Legumes; n.e.c. dried, shelled		157.7			0.0	157.7	19,233.1	19,390.8	0.8%
200559: Veg preps; beans, (not shelled), preserved		0.4				0.4	19,389.4	19,389.8	0.0%
130219: Vegetable saps and extracts; n.e.c.		1.7				1.7	16,726.0	16,727.7	0.0%
170111: Sugars; cane sugar, raw, in solid form							13,832.6	13,832.6	0.0%
071333: Legumes; kidney beans/white beans, dry, shelled		246.8				246.8	9,837.0	10,083.8	2.4%
030624: Crustaceans; crabs, not frozen		29.5				29.5	8,889.5	8,919.0	0.3%
090111: Coffee; not roasted or decaffeinated		109.1		0.0		109.1	8,343.7	8,452.7	1.3%
520100: Cotton; not carded or combed		5,501.0				5,501.0	1,699.8	7,200.8	76.4%
090411: Spices; pepper, neither crushed nor ground		73.0		0.1		73.1	6,891.6	6,964.6	1.0%
030759: Molluscs; octopus, frozen		1,359.4		0.1		1,359.5	3,745.3	5,104.8	26.6%
030611: Crustaceans; rock lobsters, frozen		156.3				156.3	4,581.7	4,738.0	3.3%
030614: Crustaceans; crabs, frozen		432.2		0.7		432.9	3,734.4	4,167.3	10.4%
090611: Spices; cinnamon, neither crushed nor ground		6.9		0.0		6.9	3,665.1	3,672.0	0.2%
121190: Plants and parts used primarily in perfumery		0.0		0.0		0.0	3,600.9	3,600.9	0.0%
080131: Nuts, edible; cashew nuts, in shell, fresh or dried							3,558.6	3,558.6	0.0%
140190: Vegetable materials for plaiting; n.e.c.		20.3	0.4			20.8	3,426.6	3,447.4	0.6%
030799: Molluscs; frozen, dried, salted or in brine n.e.c.		8.4		0.1		8.5	2,936.4	2,944.9	0.3%
170199: Sucrose; chemically pure, in solid form		0.1				0.1	2,726.3	2,726.4	0.0%
071331: Legumes; black beans/mung beans, dried, shelled		12.8				12.8	2,632.3	2,645.0	0.5%
160510: Crustacean preparations; crab		22.0				22.0	2,279.4	2,301.4	1.0%
071350: Legumes; broad beans, dried, shelled		2,052.6				2,052.6	59.1	2,111.7	97.2%
030269: Fish; n.e.c., fresh or chilled		20.5				20.5	2,007.5	2,028.0	1.0%
120220: Ground-nuts; shelled, not roasted		551.6				551.6	1,197.5	1,749.1	31.5%
030379: Fish; frozen, n.e.c.		271.2				271.2	1,346.4	1,617.6	16.8%
090620: Spices; cinnamon, crushed or ground		0.5		0.0		0.5	1,454.3	1,454.8	0.0%
080930: Fruit, edible; peaches including nectarines, fresh							1,370.4	1,370.4	0.0%
160590: Molluscs; prepared or preserved (ex crustaceans)		42.9				42.9	1,285.2	1,328.1	3.2%
060290: Plants, live; n.e.c. in heading no. 0602							1,258.7	1,258.7	0.0%
081190: Fruit, edible; fruit and nuts, frozen		52.8				52.8	1,203.5	1,256.3	4.2%
Top-35 Ag. Exports	-	28,657.9	0.4	6.0	1.6	28,665.9	918,992.1	947,658.0	3.0%

Source: UNCOMTRADE data (annual average values, 2012-17).

Mozambique

39. **In recent years, Mozambique has exported around US\$5.23 billion of total goods on the world market including US\$936.3 million of agriculture commodities annually equal to 18 percent of total merchandise exports.** Of Mozambique's agriculture exports, US\$29.9 million (3 percent) was to other APEI+ countries including US\$13.9 million or 46 percent of the APEI+ total was to Mauritius, US\$13.5

million (45 percent of APEI+ agriculture total) was to Malawi, US\$1.5 million (5 percent of APEI+ agriculture total) was to Zambia, and US\$1.1 million (4 percent of APEI+ agriculture total) was to Madagascar. There have been almost zero recorded agriculture exports from Mozambique to Seychelles.

40. **Of Mozambique's exports to Mauritius, cotton lint is by far the most important at around US\$13.3 million annually.** Since 2012, in fact, around 28 percent of all lint exports from Mozambique were to Mauritius making this APEI+ country the second most important destination for Mozambique cotton after Indonesia. According to one large exporter, the figure used to be even higher with up to 40 percent of Mozambique's cotton going to Mauritius at one time. Apart from cotton, Mozambique's only other agri-food exports to Mauritius are tuna (around US\$55,000 annually) and frozen prawns (around US\$10,000 annually).

41. **Mozambique exports a more diverse range of agriculture products to other APEI+ countries.** On the mainland, exports to Malawi include unmanufactured tobacco (US\$6.7 million annually) for stemming and tipping in the processing plants around Lilongwe, maize grain (US\$1.6 million annually), cotton seed (US\$1.5 million annually), and dried peas (US\$1.3 million annually). Exports to Zambia consist mainly of dried fish, rice, and refined palm oil and exports to Madagascar consist mainly of sugar, refined palm oil, and maize grain.

Key features of the agriculture sector and current agriculture trade in Mozambique

42. **The Mozambican agricultural sector encompasses 3.8 million farms and is dominated by smallholder farmers producing primarily for subsistence.** This group of farmers occupy more than 95 percent of the total area cultivated, with plots ranging between 0.5 and 3 hectares. The main food crops grown by small farmers for household consumption are maize, cassava, sorghum, rice, common beans, groundnuts, and blackeye peas. These crops are also sold in local markets and are becoming an important source of cash for rural households. The main cash crops produced in the country are cashew, cotton, sugar cane, tobacco, tea, pigeon pea, sesame, vegetables, and fruits (principally citrus, bananas, mangos, pineapples, and coconuts). Agricultural and fishing together account for about 22 percent of GDP and employs 73 percent of the population (World Development Indicators, 2019).

43. **Various trading companies are engaged the business of assembling maize, pigeon peas, cashew, sesame, groundnuts, and other commodities from smallholder farmers, both for export and to supply the local market.** Per local regulations a commercial invoice is required for each transaction which large traders say is impractical when buying from many thousand smallholders. For this reason, among others, larger firms typically buy through local intermediaries which results in small farmers receiving much lower prices than if producers sold directly to large operators at the national or regional level.

44. **While Mozambique is still deficit in bulk grains and oilseeds overall, production has been growing steadily for the past many years.** This is particularly true in northern regions and highland parts of central Mozambique where there is abundant land well suited to maize, soybeans, and other field expansive crops. The growth in soybean production has been driven in large part by demand from the poultry industry. Mozambique is also a large exporter of sesame seeds, cashew, macadamia, groundnuts, and tea.

45. **Unlike other mainland APEI countries and Madagascar, Mozambique permits the importation of genetically modified crops which has long been an important part of the country's food security strategy.** Owing to the physical layout of Mozambique and long distances between northern and central farm areas and major population centers in the south, it is much more cost effective to feed Maputo,

including chickens raised around Maputo with grains imported from South Africa while allowing exports from the north without restriction. South Africa is now almost entirely a GM producer and this food security strategy would not work if there were restrictions on GM imports. Presently, planting of GM seeds in Mozambique is prohibited yet the Institute of Agricultural Research (IIAM), is now testing GM maize and harvested the country's first GM maize crop in August 2017.

46. **Over the past seven years or so, pigeon peas grew quickly from almost zero production in Mozambique to become a major export.** In response to high prices and seemingly endless demand from India, large international trading companies in Mozambique and other African countries began organizing farmers and distributing pigeon pea seed from about 2012. By 2016, there were more than a million farmers cultivating pigeon peas in Mozambique almost entirely for export to India. From 2012-2017 Mozambique exported an average of US\$82.8 million of dried legumes annually including US\$67.6 million of pigeon peas making pulses the third most valuable agriculture export after tobacco and sugar. In a significant reversal of policy in 2017, however, India introduced import quotas on pigeon peas and other pulses to protect its own farmers which led to a dramatic price collapse in eastern and southern Africa. Pigeon peas and other pulses are highly nutritious and well suited to on-farm consumption but is not a strong tradition of eating dry legumes in Mozambique and exporters found themselves with vast stocks they could not sell.

47. **Mozambique prawns are reportedly among the best in the world and enjoy an excellent reputation in the global market as a premium product.** Between 2012-2017, Mozambique exported US\$42.2 million of frozen and fresh wild caught prawns annually plus US\$12.4million of lobster, crab, and other crustaceans. Also, in the fishery sector, Mozambique exported around US\$8.1 million of dried or salted fish annually, US\$3.6 million of mollusks (mostly octopus, abalone, and clams), US\$0.9 million of frozen fish (mostly shark and swordfish), and US\$680,400 of aquatic invertebrates (mostly sea cucumber and a small amount of jellyfish). Other than dried and salted fish, which enjoy strong demand in neighboring African markets, most seafood products are exported to Europe and a lesser extent to Asia.

48. **Mozambique is served by three main ports – Maputo in the south, Beira in the center, and Nacala in the North.** Of these ports, Nacala was described as very expensive, in part because Customs in Nacala follows different and more cumbersome procedures compared with all other ports.²⁰ There is little/no use of risk-based inspections at any port and all containers are scanned whether full or empty or for import, export, or transit. Total costs to export a full container through Maputo including shore costs, scanning costs, and lifting costs (known as fuel adjustment in Maputo) are US\$227. At Beira the cost is US\$330 per container. At Nacala the cost is US\$534 per container.

Mozambique agriculture trade data

49. **Table 51 below provides an overview of Mozambique's top-35 agri-food exports to the world market including trade with APEI countries.** As shown, cotton lint sold to Mauritius accounts for almost half of intra-APEI agriculture trade for Mozambique. Other than cotton, Mozambique has also exported a small amount of frozen prawns to Mauritius. Apart from sugar, maize grain, and small amounts of coconut oil and pigeon peas exported to Madagascar, nearly all intra-APEI agriculture trade for Mozambique is with Malawi and Zambia. Notable too is that while wheat, maize, and vegetable oils appear on the list of Mozambique's top-35 agriculture exports, Mozambique is heavily deficit in these commodities – particularly in southern Mozambique – so is a strong net importer of these products overall.

²⁰ According to logistics companies, containers of a single shipment can be processed under one document in Beira and Maputo, but in Nacala each individual container requires separate documents and fees.

Table 51: Mozambique leading agriculture exports (US\$ '000)

MOZAMBIQUE LEADING EXPORTS HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as %
	MDG	MWI	MUS	SYC	ZMB				
240120: Tobacco; partly or wholly stemmed or stripped		96.6				96.6	270,160.4	270,257.0	0.0%
170111: Sugars; cane sugar, raw, in solid form	178.6	0.4				178.9	114,912.8	115,091.7	0.2%
071390: Legumes; n.e.c. (pigeon peas) shelled	6.2	0.2			54.0	60.5	67,540.3	67,600.8	0.1%
120740: Oil seeds; sesamum seeds		0.0				0.0	67,041.3	67,041.4	0.0%
520100: Cotton; not carded or combed		-	13,322.7			13,322.7	35,081.5	48,404.2	27.5%
080300: Fruit, edible; bananas		0.2			90.9	91.1	42,151.6	42,242.7	0.2%
030613: Crustaceans; shrimps and prawns, frozen			10.0		1.9	11.9	42,089.6	42,101.5	0.0%
080131: Nuts, edible; cashew nuts, in shell		0.1				0.1	38,331.3	38,331.4	0.0%
080132: Nuts, edible; cashew nuts, shelled							33,001.9	33,001.9	0.0%
151211: Vegetable oils; sunflower or safflower oil							19,077.2	19,077.2	0.0%
230230: Bran; of wheat							17,112.0	17,112.0	0.0%
110100: Wheat or meslin flour	5.8	152.7		0.0		158.5	14,430.0	14,588.5	1.1%
170310: Sugars; molasses, from sugar cane		925.5				925.5	11,476.3	12,401.8	7.5%
240130: Tobacco refuse		0.8				0.8	11,733.1	11,733.9	0.0%
071331: Legumes; black beans/mung beans, dried, shelled		11.0				11.0	10,782.9	10,794.0	0.1%
240110: Tobacco, (not stemmed or stripped)		6,769.4				6,769.4	3,735.2	10,504.7	64.4%
120220: Ground-nuts; shelled, not roasted		0.0				0.0	9,718.9	9,719.0	0.0%
030559: Fish; dried		115.5			288.7	404.3	7,640.5	8,044.7	5.0%
170199: Sucrose; chemically pure, in solid form	247.8					247.8	4,964.1	5,211.9	4.8%
070990: Vegetables; edible, n.e.c., fresh or chilled							4,933.5	4,933.5	0.0%
090240: Tea, black		-				-	4,749.7	4,749.7	0.0%
030611: Crustaceans; rock lobsters frozen					5.1	5.1	4,712.3	4,717.4	0.1%
100590: Cereals; maize grain	100.5	1,662.3			0.0	1,762.8	2,635.9	4,398.7	40.1%
120720: Oil seeds; cotton seeds		1,516.8				1,516.8	2,800.2	4,317.0	35.1%
100110: Cereals; durum wheat							4,272.1	4,272.1	0.0%
080260: Nuts, edible; macadamia		7.3				7.3	4,018.5	4,025.8	0.2%
100640: Cereals; rice, broken		0.1			204.4	204.5	3,058.6	3,263.1	6.3%
150710: Vegetable oils; soya-bean oil		0.0				0.0	3,197.8	3,197.8	0.0%
190230: Food prep; pasta cooked or otherwise prepared		182.9			146.2	329.1	2,544.3	2,873.3	11.5%
120210: Ground-nuts; in shell, not roasted							2,319.6	2,319.6	0.0%
151311: Vegetable oils; coconut (copra) oil	65.3	70.6			76.8	212.7	1,976.3	2,189.0	9.7%
030619: Crustaceans; frozen, n.e.c.					0.0	0.0	2,180.7	2,180.7	0.0%
030624: Crustaceans; crabs, not frozen		0.1			0.0	0.1	2,102.2	2,102.3	0.0%
200819: Nuts and other seeds							1,923.3	1,923.3	0.0%
071310: Legumes; peas, shelled, dried	60.5	1,291.1			31.0	1,382.6	294.6	1,677.2	82.4%
Top-35 Ag. Exports	664.6	12,803.8	13,332.7	0.0	899.2	27,700.4	868,700.4	896,400.9	3.1%

Source: UNCOMTRADE data (annual average values, 2012-17).

Malawi

50. **Agriculture plays a central role in the Malawi economy currently contributing around 26 percent of GDP and 85 percent of total export earnings.** While there have been some successes in agriculture diversification with recent gains in non-traditional crops such as cotton, pulses, groundnuts, and oilseeds, tobacco still accounts for over 75 percent of agriculture GDP and 53 percent of total export revenue. Other important exports for Malawi are sugar, tea, macadamia nuts, rubber, and coffee.

51. **From 2012-17, total annual agriculture exports were US\$898.3 million on average.** Of these exports, just 2.2 percent went to other APEI+ countries. Around 5 percent of Malawi cotton is exported to Mauritius equal to US\$1.5 million annually. Else, nearly all of Malawi's agriculture exports to APEI+ countries are to Zambia (US\$13.0 million annually) and Mozambique (US\$3.8 million annually). Over the 2012-2017 period, Seychelles imported an average of US\$76,200 of unmanufactured tobacco from Malawi.

Key features of the agriculture sector and current agriculture trade in Malawi

52. **Of Malawi's top agriculture exports, only tobacco, legumes, cotton, groundnuts, and soybeans involve substantial contributions from smallholders.** Excluding tobacco, these crops account for just 12 percent of total agriculture exports. Sugar, tea, macadamias, rubber, and coffee are largely estate-based crops and account for around 19 percent of total agriculture exports. These commodities are important for export revenue and employment but derive their competitiveness in large part from the low cost of rural labor so are unlikely to be a direct route out of rural poverty for very many households in the near to medium term.

53. **Maize is the main staple food in Malawi and is grown by nearly every smallholder household for subsistence and cash sale.** The availability of surplus maize for export, however, depends greatly on seasonal weather patterns. From 2012-2017 Malawi exported an average of US\$2.0 million of maize annually against US\$27.1 million of annual imports of which US\$25.2 million (93 percent) was from Zambia. Mozambique has been the next largest supplier of maize to Malawi with US\$1.7 million of recorded exports annually. Like Zambia and Madagascar, Malawi is strictly a non-GMO country.

54. **All agriculture exports from Malawi require quantity specific export licenses that add to the costs of trade and create uncertainty for commercial investors and small farmers alike.** Given the importance of maize as the main food staple, it is not unusual for Malawi to severely restrict maize exports. Many other crops including soybeans, sunflower, rice, sugar, and cotton have, at times, been subject to export restrictions. During data collection, soybean processors were actively lobbying government to prohibit unprocessed soybean exports to ensure a steady and affordable supply of raw material to their plants.²¹

55. **These limitations in mind, soybean production in Malawi has grown strongly in recent years and been facilitated by three large private investments in solvent-extraction processing plants.** Like other countries in southern Africa, Malawi is structurally deficit in edible oil and there is a ready market for all local oil production. Soybean cake is the byproduct of solvent oil extraction and is used in human food and animal feed.²² The demand for soy cake has grown strongly in Malawi due to a surge in poultry production, but the domestic market is still only able to absorb 30-40 percent of total cake production leaving large surpluses for export. Most of this surplus cake (valued at US\$4.7 million annually) is now sold to Zimbabwe, Tanzania, Mozambique, and South Africa. Some exports also go across the border to poultry producers to Eastern Province of Zambia.²³

56. **As in Mozambique, the pulses have been an important export for Malawi with significant smallholder participation.** From 2012-2017, Malawi exported an average of US\$45.6 million of pulses annually of which US\$38.2 million was pigeon peas with more than 80 percent sold to India. The introduction of import restrictions by India since 2017 has, however, since transformed the prospects for pigeon pea and other pulse exports.

²¹ According to one processor, total soybean production in Malawi is now around 200,000 tons a year against industrial processing capacity of 400,000 tons.

²² Soybean meal is the product of mechanical pressing of soybeans but is higher in fat than solvent-extracted oil-cake.

²³ Like Malawi, Zambia has experienced a large surge in soybean production and is structurally deficit in edible oil so has large quantities of cake available for export. All solvent extraction plants, however, are near Lusaka meaning it is cheaper for Eastern Province poultry farmers to import cake used in stock feed from Malawi.

57. **Groundnuts are another important smallholder crop and major export for Malawi.** From 2012-2017, Malawi exported US\$20.4 million on average of which US\$11.7 million (57 percent) was to Zambia making groundnuts, by far, the most important crop for Malawi in intra-APEI+ trade. Mauritius imports around US\$1.5 million of groundnuts annually, with roughly one-third each being supplied by Madagascar, India, and China.

58. **Bird's eye chilis are also an important smallholder cash crop.** Malawi has prolonged success with the production of Birdseye chilies and exported an average of US\$2.3 million annually from 2012-2017. These peppers are grown primarily around Mount Mulanje, Liwonde, and Balaka. Apart from exports to spice companies and condiment manufacturers in South Africa, Spain, and elsewhere, bird's eye chilis are used locally to manufacture finished chili sauces that are exported to neighboring countries and other world markets including the United Kingdom. Mauritius imports an average of US\$621,000 of chili peppers annually mainly from India.

59. **Of the estate crops, tea ranks as Malawi's third most valuable agriculture export but can sometimes reach to be the second most valuable export in years with a good harvest.** In international terms, Malawi is the second largest tea producer in Africa after Kenya and accounts for approximately 10 percent of total African tea exports. Large commercial estates account for 93-95 percent of production in Malawi, with the remainder grown by some 10,000 smallholder farmers on around 15 percent the total area given to tea. Mauritius and Seychelles each import around US\$300,000 of made (black) tea annually to blend with local leaves. Presently most tea imports by Mauritius are from Kenya while imports by Seychelles are from Sri Lanka.

60. **Malawi has no direct sea access and instead uses the ports of Beira, Dar es Salaam, and sometimes Nacala for agriculture exports and fertilizer imports.** Beira has been the preferred port with around 60 percent of exports using this route. The road to Nacala is not fully paved and logistics companies say that it is generally more convenient and cost effective to send trucks to Beira compared with using the train to Nacala.

Malawi agriculture trade data

61. **of** total trade has been with Mauritius of which more than 95% of the total value was cotton. Owing to shared land borders, the value and range of commodities traded with Zambia and Mozambique is much larger with these countries accounting for 70 percent and 20 percent of APEI+ imports from Malawi respectively.

62. Table 52 **provides details of the top-35 agriculture exports from Malawi by market destination.** As shown, 2.1 percent of these top agriculture exports have gone to other APEI+ countries. Of these APEI+ exports, 8 percent of total trade has been with Mauritius of which more than 95% of the total value was cotton. Owing to shared land borders, the value and range of commodities traded with Zambia and Mozambique is much larger with these countries accounting for 70 percent and 20 percent of APEI+ imports from Malawi respectively.

Table 52: Malawi leading agriculture exports (US\$ '000)

MALAWI LEADING EXPORTS HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as % Total
	MDG	MUS	MOZ	SYC	ZMB				
240120: Tobacco; partly or wholly stemmed or stripped	159.9		1,908.9	12.7	61.9	2,143.4	546,072.4	548,215.8	0.4%
090240: Tea, black in immediate packing > 3kg				0.0	266.5	266.5	76,331.1	76,597.6	0.3%
170111: Sugars; cane sugar, raw			253.0	0.0		253.0	59,101.8	59,354.9	0.4%
071390: Legumes; n.e.c. (pigeon peas) shelled		67.8			5.2	73.0	38,118.9	38,192.0	0.2%
520100: Cotton; not carded or combed		1,495.0				1,495.0	26,882.3	28,377.4	5.3%
240110: Tobacco, (not stemmed or stripped)	4.2		34.1	19.4	11.7	69.4	24,949.6	25,019.0	0.3%
240130: Tobacco refuse	10.6			44.1		54.7	23,977.3	24,032.1	0.2%
120220: Ground-nuts; shelled, not roasted			2.3		11,681.4	11,683.7	8,732.8	20,416.4	57.2%
080260: Nuts, edible; macadamia							18,799.3	18,799.3	0.0%
170199: Sucrose; chemically pure, in solid form			0.5			0.5	10,154.1	10,154.6	0.0%
120100: Soya beans; whether or not broken			9.1		448.6	457.7	6,306.8	6,764.5	6.8%
230400: Oil-cake from the extraction of soya-bean oil			598.2		118.7	716.9	3,993.9	4,710.8	15.2%
090111: Coffee			59.3			59.3	4,605.7	4,665.1	1.3%
230610: Oil-cake from the extraction of cotton seed oils		4.5			0.7	5.2	3,024.1	3,029.2	0.2%
230230: Bran of wheat							2,647.9	2,647.9	0.0%
100510: Cereals; maize seed			745.6		134.5	880.1	1,694.7	2,574.8	34.2%
090420: Spices; chili pepper dried or crushed or ground							2,518.6	2,518.6	0.0%
100590: Cereals; maize grain	18.6		35.6			54.3	1,926.5	1,980.7	2.7%
071331: Legumes; black beans/mung beans, dried, shelled					0.2	0.2	1,809.6	1,809.8	0.0%
071310: Legumes; peas, shelled, dried			10.8		92.4	103.2	1,704.3	1,807.6	5.7%
071339: Legumes; n.e.c. dried, shelled	15.2		11.2		4.3	30.7	1,505.6	1,536.4	2.0%
090230: Tea, black; immediate packings < 3kg					60.4	60.4	885.4	945.8	6.4%
071340: Legumes; lentils, shelled, dried				0.0		0.0	725.4	725.4	0.0%
071333: Legumes; kidney beans/white beans, dry, shelled			17.9		1.6	19.5	668.9	688.4	2.8%
230210: Bran of maize (corn)					3.1	3.1	683.4	686.5	0.5%
040120: Dairy; milk and cream, 1% to 6% fat					1.7	1.7	639.2	640.9	0.3%
071022: Legumes; beans (vigna spp, phaseolus spp) frozen							635.2	635.2	0.0%
120600: Oil seeds; sunflower seeds		0.3			75.6	75.9	545.7	621.6	12.2%
230240: Bran of other cereals					0.1	0.1	546.7	546.7	0.0%
080290: Nuts, edible; n.e.c.							524.2	524.2	0.0%
120740: Oil seeds; sesamum seeds			52.5			52.5	439.9	492.4	10.7%
240310: Tobacco, smoking							407.8	407.8	0.0%
071320: Legumes; chickpeas (garbanzos), shelled, dried		4.1				4.1	397.3	401.4	1.0%
071332: Legumes: small red (adzuki) beans, shelled, dried			7.7			7.7	377.0	384.7	2.0%
120720: Oil seeds; cotton seeds							384.4	384.4	0.0%
Top-35 Ag. Exports	208.5	1,571.7	3,746.8	76.2	12,968.7	18,571.8	872,717.8	891,289.6	2.1%

Source: UNCOMTRADE data (annual average values, 2012-17).

Zambia

63. **Agriculture contributes around 11 percent of Zambia's merchandise exports equal to US\$736.4 million per year on average.** Of these agriculture exports, US\$88.1 million (12 percent) was to other APEI+ countries including US\$79.2 million (90 percent) to Malawi, US\$4.6 million (5.2 percent) to Mauritius, and US\$4.1 million (4.7 percent) to Mozambique. Mauritius imports around 5 percent of Zambian cotton lint equal to US\$4.2 million per year on average. Madagascar imported US\$163,200 of maize grain from Zambia. There have been zero agriculture exports from Zambia to Seychelles.

64. **Copper, cobalt, and other minerals account for 83 percent of Zambia's merchandise exports making the country vulnerable to commodity price cycles and Dutch disease.** As Zambia works to diversify its export base away from mining and create jobs in rural areas, large- and small-scale agriculture trade is of clear strategic importance. Nearly 60 percent of the population is rural, yet agriculture, forestry, and fisheries account for just 7.2 percent of GDP. Smallholder farmers in remote locations are often locked into low-productivity subsistence agriculture.

Key features of the agriculture sector and current agriculture trade in Zambia

65. **Zambia has an abundance of fertile land, water, and a generally favorable climate for agricultural production.** Compared with many African countries, Zambia has a large and reasonably well-developed agribusiness sector in which 500,000 or so smallholder and emergent farmer households in well-connected areas are linked to large firms through vertically integrated outgrower programs for cotton, sugar, tobacco, and soybeans. Large commercial farms and estates also play an important role in Zambian agriculture and account for the bulk of exports in sugar, tobacco, horticulture, coffee, and soy. Several large grain trading companies and commodity brokers are in the business of sourcing raw materials from large and small farmers to supply local millers, stock feed manufacturers, breweries, and other segments of the food industry and for export. The Food Reserve Agency (FRA), a parastatal body, plays a large role in procuring smallholder maize and in government-to-government exports. The FRA also trades in rice and soybeans.

66. **Zambia is the only net maize exporter in the APEI+ group of countries.** From 2012 to 2017, Zambia exported an average of US\$139.1 million of non-GM, white maize annually making this the second most valuable agriculture export after tobacco. These exports are more than twice the total maize import value of all other APEI+ countries combined and almost six times greater than the value of Argentine yellow corn imported by Mauritius. Of Zambia's recent maize exports, 69 percent (US\$96 million annually) has gone to Zimbabwe, much of which was traded through government-to-government deals involving the FRA. Malawi has been the next largest importer of Zambian maize at 18 percent of total annual exports or US\$25 million per year on average. Other large importers of Zambian maize have been Kenya, Tanzania, South Africa, Namibia, and Mozambique. Additionally, Zambia exports at least 100,000 tons of maize flour worth around US\$28 million annually to the Democratic Republic of Congo through informal channels that is not counted in official trade statistics.

67. **Zambia is also a large exporter of soybean cake and stock feed.** Soybean production has grown strongly in Zambia in recent years increasing from less than 60,000 tons in 2008 to around 350,000 tons in 2017. In addition to commercial farmer soy that has long been grown in rotation with tobacco, considerable volumes are now produced by smallholder farmers especially in Central Province and parts of Eastern Province that border Malawi. Like Malawi, Zambia is structurally deficit in edible oil and there is a readily available local market for soybean oil. The rapid growth in soybean production has, however, left Zambia with a structural surplus of solvent-extracted soybean cake that it now exports and uses to manufacture human food and animal feed. From 2012-17, Zambia exported an average of US\$16.6 million of solvent extracted soybean oil-cake, US\$11.9 million of mechanically expelled soybean meal, and US\$15.8 million of made animal feed per year. Zimbabwe absorbed 73 percent of these soy-related exports while smaller quantities of cake, meal, and feed went to South Africa, Tanzania, Kenya, and Namibia among other regional buyers.

68. **For bulk agriculture commodities like soybean cake and maize, Zambia's competitiveness in exporting to regional markets derives, in large part, from the availability of inexpensive backload freight.** Compared with inbound rates from port locations, backload prices can be 60-70 percent less. Similar price differentials also apply to backload freight from Malawi and inland parts Mozambique. Regulatory prohibitions on genetically modified imports in many southern and eastern African countries also provide Zambia and other non-GM producers a competitive advantage but are not as decisive as savings on backload freight. South Africa, for instance, allows GM imports so has the potential to buy from any global supplier yet still sources around 10 percent of its soy-cake imports from Zambia.

69. **Complicating Zambia’s capacity for agriculture exports, the country has a long history of unpredictable trade policies including imposition of outright export bans.** This is particularly true for maize, which is inherently vulnerable to drought and political economy pressures as the main food staple. Additionally, Zambia has used import bans to protect local wheat growers and, at various times, has imposed trade restrictions on poultry, pork, beef, and other commodities. These restrictions are unpredictable but are typically placed on imports to ensure that domestic production is consumed first and on exports to protect self-sufficiency in bad harvest years. At the time of data collection, an export ban was in place on unprocessed soybeans to ensure the supply of raw beans for local processors. Because of Zambia’s heavy surplus in soybean cake, meal, and animal feed, these commodities are much less vulnerable to trade restrictions than other staple commodities.

70. **Natural honey is an increasingly important agri-food export for Zambia with strong links to remote rural areas.** Zambia produces large amounts of honey, much of which is sold by the roadside or goes to waste. In efforts to commercialize the sector, several small- and medium-size firms procure and process honey from beekeepers and honey hunters in Northwest Province (where there are extensive forests) and around the Luangwa Valley (a protected natural area in the east of the country). Together these firms now export around US\$2.1 million of honey annually. Most honey from Zambia is exported in drums for blending with other honey elsewhere. Over 90 percent of honey exports go to buyers Europe that require traceability and quality control that meet EU SPS requirements. Several firms also pack honey in consumer bottles for domestic sale and export. Zambia’s largest honey exporter is organic certified. Another large exporter has full Hazard Analysis and Critical Control Point (HAACP) certification for its honey line and has developed a unique model of working with smallholder farmers to achieve strategic natural resource management objectives (see Box 2).

Box 2: Specialty food exports from Zambia

Through the “It’s Wild” brand of food products, the Community Markets for Conservation (COMACO) organization has developed a unique model of working with smallholder farmers to achieve strategic natural resource management objectives. COMACO currently works with around 180,000 smallholder producers who are organized around 50 cooperatives. Co-op members receive inputs and extension advice from COMACO in return for a promise to sell the product back to the company. Additionally, COMACO pays each co-op a dividend for meeting natural resource management objectives that are set together with members for things such as soil preservation, preservation of forests, preservation of wildlife, etc. Extension advice is provided on how to farm without slash and burn methods, agro-forestry, conservation tillage, and other topics. The firm’s main product is peanut butter. It also does rice, honey, dried mango, chili sauce, soy-textured protein, and maringa that is used as a tea and health supplement. The company has full Hazard Analysis and Critical Control Point (HAACP) certification for its honey, peanut butter, and soy protein and is actively looking to develop export markets in neighboring African countries and beyond.

71. **Since the early 1990s Zambia has also been an exporter of fresh horticulture produce to Europe and, a lesser extent, South Africa.** The horticulture export industry used to be much larger. In the mid-2000s, Zambia exported around US\$20 million annually of baby corn, baby courgettes (zucchini), green beans, patty pan (summer squash), and other products by airfreight to grocery stores in shelf-ready supermarket packs. In the same period, Zambia exported around US\$35 million of fresh cut flowers (mainly roses). Fresh horticulture exports are still important to Zambia but have contracted to around US\$5 million of fresh vegetable exports and US\$18.2 million of rose exports annually. The reasons for this decline are complex but primarily relate to problems with the high price and limited availability of air freight. There are no longer direct commercial flights between Zambia and Europe and most vegetables are sent by truck to Johannesburg from where they are uplifted to Europe. To minimize the threat of

pesticide residues and other SPS risks, nearly all export vegetable production is undertaken by specialized commercial farms. Other than roses and supermarket vegetables, one commercial farm has also planted vineyards and now exports around US\$455,000 of table grapes to the United Kingdom and South Africa. During data collection, supermarket buyers in Mauritius and Seychelles expressed a strong interest in developing new sources of supply for lettuce, tomatoes, and other fresh produce. For Zambia to serve these buyers, SPS risk assessments and competitive transport links would be required.

Zambia agriculture trade data

72. **The trade data for leading agriculture exports from Zambia are presented in Table 53.** Across the top-35 commodities, APEI countries imported US\$85 million of Zambian products annually. Most of these exports were to Malawi and, to a lesser extent, Mauritius and Mozambique. Mauritius imported around 5 percent of Zambian cotton equal to US\$4.5 million per year on average. Madagascar imported an average of US\$136,000 of maize grain from Zambia.

Table 53: Zambia leading agriculture exports (US\$ '000)

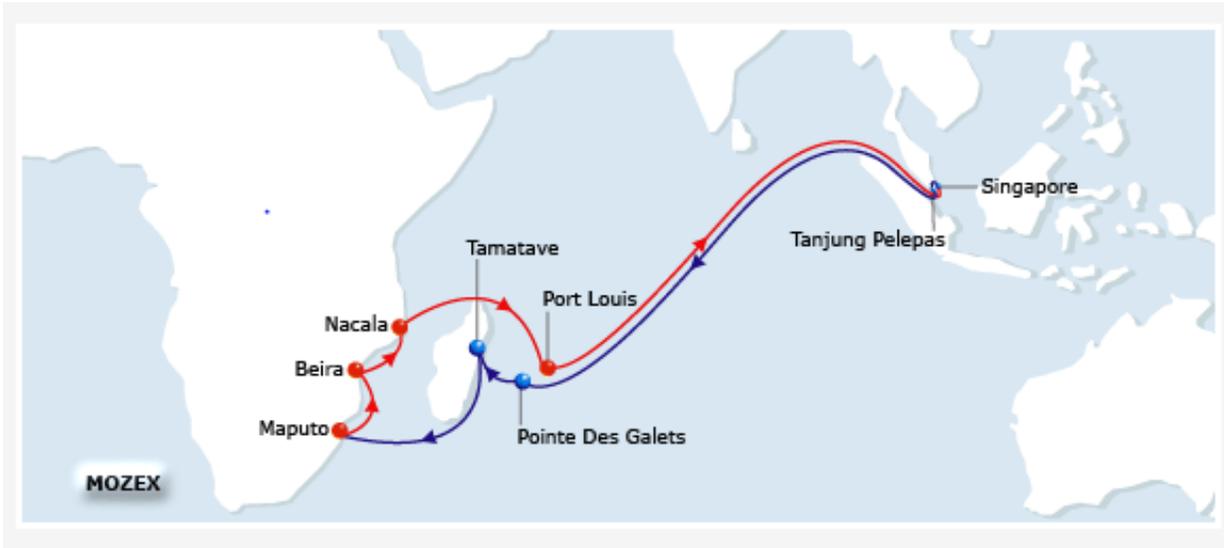
ZAMBIA LEADING EXPORTS HS6 Description	APEI+					APEI+ Total	RoW	Grand Total	APEI+ as % Total
	MDG	MWI	MUS	SYC	MOZ				
240120: Tobacco; partly or wholly stemmed or stripped	40.5	18,009.7			0.0	18,050.1	169,421.5	187,471.6	9.6%
100590: Cereals; maize grain	136.0	25,204.8			1,720.3	27,061.1	112,001.2	139,062.3	19.5%
520100: Cotton; not carded or combed			4,546.0		71.9	4,617.8	79,313.2	83,931.1	5.5%
240110: Tobacco, (not stemmed or stripped)		25,290.9				25,290.9	37,282.1	62,573.0	40.4%
170111: Sugars; cane sugar, raw		85.3			646.0	731.3	42,981.0	43,712.3	1.7%
100510: Cereals; maize seed	0.4	1,683.7	19.9		375.2	2,079.1	24,585.6	26,664.8	7.8%
170199: Sucrose; chemically pure, in solid form		0.1			216.1	216.2	18,767.0	18,983.2	1.1%
060311: Cut flowers, roses, fresh							18,201.3	18,201.3	0.0%
230400: Oil-cake from the extraction of soya-bean oil		28.8			10.7	39.6	16,730.7	16,770.2	0.2%
230990: Preparations used in animal feeding		201.4				201.4	15,638.7	15,840.1	1.3%
120810: Flours and meals; of soya beans		16.6				16.6	11,891.5	11,908.1	0.1%
120100: Soya beans		52.3	0.2			52.5	11,048.2	11,100.6	0.5%
230210: Bran, of maize (corn)							7,043.2	7,043.2	0.0%
170490: Sugar confectionery;, not containing cocoa		2,853.0			23.3	2,876.3	3,844.3	6,720.6	42.8%
120720: Oil seeds; cotton seeds		1,435.1			75.8	1,510.9	5,031.6	6,542.5	23.1%
100300: Cereals; barley							6,539.5	6,539.5	0.0%
220210: Waters; containing added sugar or flavoured		38.0			0.0	38.0	5,372.9	5,410.9	0.7%
030799: Molluscs; n.e.c. frozen, dried, salted or in brine							5,314.9	5,314.9	0.0%
240130: Tobacco refuse	0.0	28.1				28.1	5,217.4	5,245.5	0.5%
220290: Non-alcoholic beverages; no fruit or veg juice		555.6			385.1	940.6	3,882.1	4,822.7	19.5%
230610: Oil-cake from the extraction of cotton seed oils		0.5				0.5	4,660.8	4,661.3	0.0%
170310: Sugars; molasses		154.0				154.0	3,356.7	3,510.6	4.4%
070810: Vegetables, peas (pisum sativum), fresh or chilled							2,981.0	2,981.0	0.0%
190531: Food prep; sweet biscuits		200.6			2.3	202.9	2,643.9	2,846.8	7.1%
060319: Cut flowers, ex roses, carnations, orchids		0.0				0.0	2,621.8	2,621.8	0.0%
040900: Honey; natural		0.5				0.5	2,110.1	2,110.6	0.0%
010511: Poultry; live chickens < 185g	10.6	299.1			46.1	355.9	1,713.6	2,069.4	17.2%
040700: Eggs; birds' eggs, in the shell		103.7			30.9	134.6	1,571.6	1,706.2	7.9%
090111: Coffee		0.0				0.0	1,630.7	1,630.7	0.0%
210610: Protein; concentrates and textured protein		211.8			34.0	245.7	1,126.7	1,372.4	17.9%
170410: Sugar confectionery; chewing gum		162.2			5.8	168.1	1,115.3	1,283.3	13.1%
200520: Potatoes, prepared or preserved, not frozen		17.7				17.7	1,159.2	1,176.9	1.5%
071022: Legumes; beans (vigna spp, phaseolus spp) fresh							1,113.0	1,113.0	0.0%
100110: Cereals; durum wheat	0.1	1.3				1.3	849.4	850.8	0.2%
070990: Vegetables; edible, n.e.c., fresh or chilled		0.0			0.0	0.1	841.0	841.0	0.0%
Top-35 Ag. Exports	187.5	76,634.7	4,566.0	-	3,643.5	85,031.7	629,602.5	714,634.2	11.9%

Source: UNCOMTRADE data (annual average values, 2012-17).

Annex 3: Regional shipping lines

CMA-CGM

Asia Mozambique Express



WestBound

Port	Transit Time
SINGAPORE, SG	0
TANJUNG PELEPAS, MY	1
POINTE DES GALETS, RE	10
TAMATAVE, MG	19
MAPUTO, MZ	25

EastBound

Port	Transit Time
MAPUTO, MZ	25
BEIRA, MZ	29
NACALA, MZ	37
PORT LOUIS, MU	43
SINGAPORE, SG	55

Transit Time Calculation (as per proforma)

From:

To:

= 6 Days Calculate

Key Figures

Frequency: **Weekly**

Vessel Fleet: **8**

Ports of Call: **8**

Duration: **56 Days**

From:

To:

= 14 Days Calculate

Indian Ocean Feeder 1



Round Trip

Port	Transit Time
LONGONI, YT	0
MAJUNGA, MG	1
NOSSI BE, MG	5
ANTSIRANANA, MG	7
VOHEMAR, MG	9
POINTE DES GALETS, RE	12
PORT LOUIS, MU	13
LONGONI, YT	18

Transit Time Calculation (as per proforma)

From:

To:

= 8 Days

Key Figures

Frequency	Other
Vessel Fleet	1
Ports of Call	7
Duration	21 Days

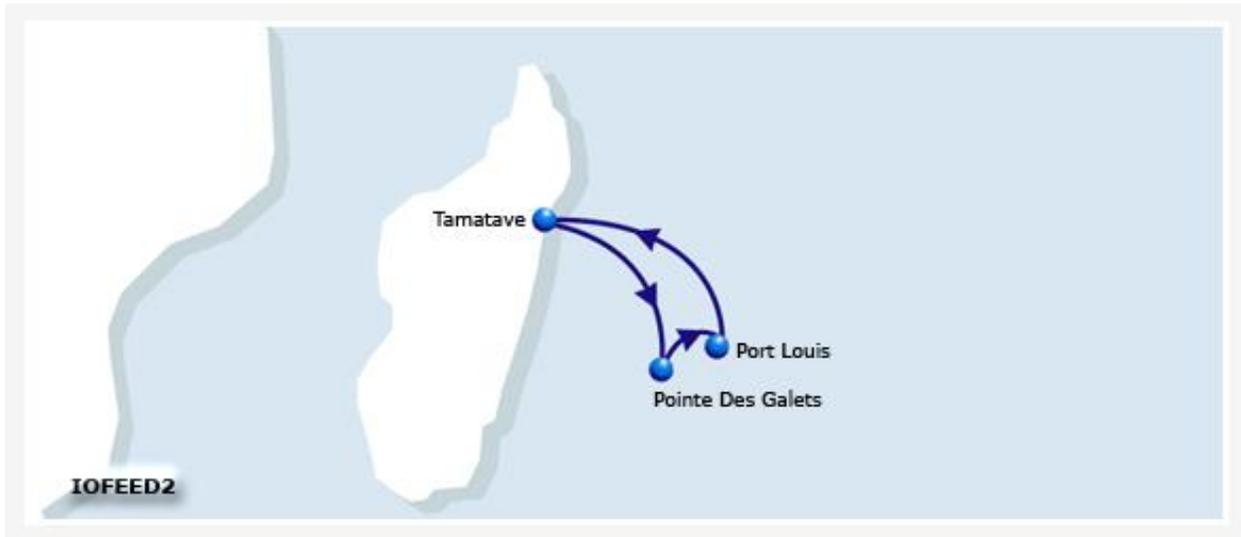
Line Strengths

Full coverage of :

- Comores = Moroni / Mutsamudu
- North West Madagascar = Nossi be / Diego Suarez / Majungah / Tuléar

Possible spot calls to remote ports on Inducement

Indian Ocean Feeder 2



Round Trip

Port	Transit Time
POINTE DES GALETS, RE	0
PORT LOUIS, MU	1
TAMATAVE, MG	3
POINTE DES GALETS, RE	6

Transit Time Calculation (as per proforma)

From

To

= 4 Days

Key Figures

Frequency	Weekly
Vessel Fleet	1
Ports of Call	3
Duration	7 Days

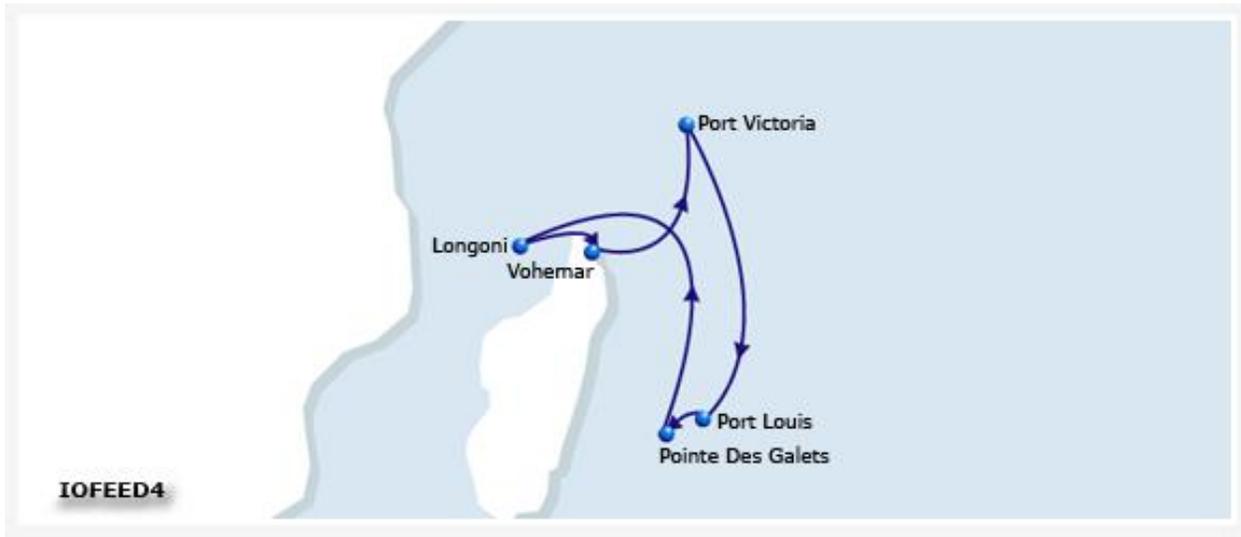
Indian Ocean Feeder 3



Key Figures

Frequency	TwiceAMonth
Vessel Fleet	1
Ports of Call	4
Duration	14 Days

Indian Ocean Feeder 4



Round Trip

Port	Transit Time
POINTE DES GALETS, <u>RE</u>	0
LONGONI, <u>YT</u>	4
VOHEMAR, <u>MG</u>	7
PORT VICTORIA, <u>SC</u>	12
PORT LOUIS, <u>MU</u>	17
POINTE DES GALETS, <u>RE</u>	18

Transit Time Calculation (as per proforma)

From:

To:

= 13 Days

Key Figures

Frequency	Other
Vessel Fleet	1
Ports of Call	5
Duration	21 Days

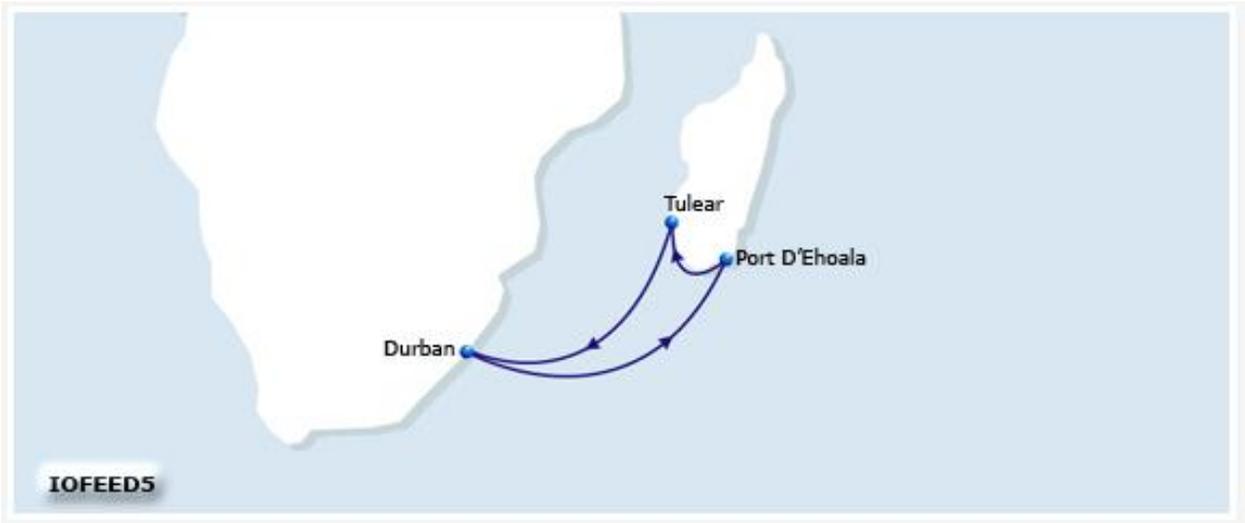
Transit Time Calculation (as per proforma)

From:

To:

= 5 Days

Indian Ocean Feeder 5



Round Trip

Port	Transit Time
DURBAN, ZA	0
PORT D'EHOALA, MG	3
TULEAR, MG	6
DURBAN, ZA	11

Transit Time Calculation (as per proforma)

From

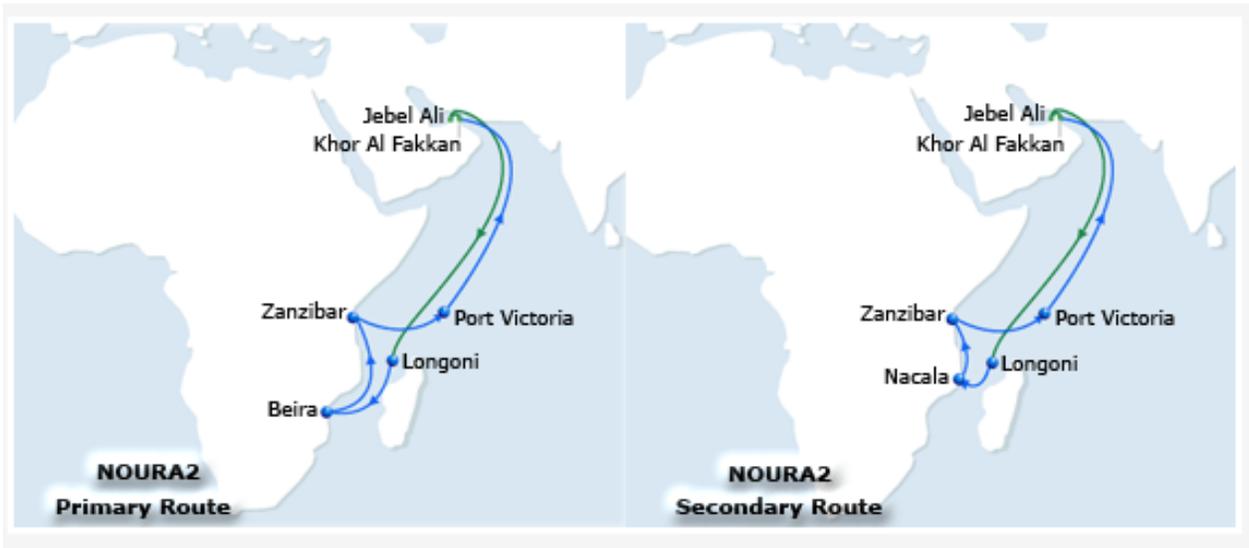
To

= 5 Days **Calculate**

Key Figures

Frequency	TwiceAMonth
Vessel Fleet	1
Ports of Call	3
Duration	14 Days

Noura Express



SouthBound

Port	Transit Time
KHOR AL FAKKAN, AE	0
JEBEL ALI, AE	1
LONGONI, YT	9

NorthBound

Port	Transit Time
LONGONI, YT	9
BEIRA, MZ	13
ZANZIBAR, TZ	18
PORT VICTORIA, SC	27
KHOR AL FAKKAN, AE	34

Transit Time Calculation (as per proforma)

From:

To:

= 14 Days

Key Figures

Frequency: **Weekly**

Vessel Fleet: **5**

Ports of Call: **6**

Duration: **35 Days**

Shaka Express 2



WestBound

Port	Transit Time
NINGBO, CN	0
SHANGHAI, CN	1
HONG KONG, HK	4
SHEKOU, CN	5
TANJUNG PELEPAS, MY	11
PORT LOUIS, MU	19
DURBAN, ZA	25

EastBound

Port	Transit Time
DURBAN, ZA	25
COEGA, ZA	32
TANJUNG PELEPAS, MY	51
HONG KONG, HK	56
SHANGHAI, CN	59
NINGBO, CN	69

Transit Time Calculation (as per proforma)

From:

To:

= 6 Days

Key Figures

Frequency	Weekly
Vessel Fleet	10
Ports of Call	11
Duration	70 Days

Midas Loop 2



WestBound

Port	Transit Time
KHOR AL FAKKAN, AE	0
JEBEL ALI, AE	1
MUNDRA, IN	4
NHAVA SHEVA, IN	6
DURBAN, ZA	22

EastBound

Port	Transit Time
DURBAN, ZA	22
POINTE DES GALETS, RE	29
PORT LOUIS, MU	31
KHOR AL FAKKAN, AE	41

Transit Time Calculation (as per proforma)

From:

To:

= 9 Days

Key Figures

Frequency: **Weekly**

Vessel Fleet: **6**

Ports of Call: **7**

Duration: **42 Days**

Transit Time Calculation (as per proforma)

From:

To:

= 32 Days

MSC

Beira, Mozambique (MZBEW) to Port Louis, Mauritius (MUPLU)

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 JOHN RICKMERS	KC824R	SOFALA EXPRESS SERVICE	CORNELDER DE MOZAMBIQUE SARL	DIRECT	Mon, 11 Jun 2018	4 days
 JOHN RICKMERS	KC826R	SOFALA EXPRESS SERVICE	CORNELDER DE MOZAMBIQUE SARL	DIRECT	Sun, 24 Jun 2018	4 days
 JOHN RICKMERS	KC828R	SOFALA EXPRESS SERVICE	CORNELDER DE MOZAMBIQUE SARL	DIRECT	Sun, 08 Jul 2018	4 days
 JOHN RICKMERS	KC830R	SOFALA EXPRESS SERVICE	CORNELDER DE MOZAMBIQUE SARL	DIRECT	Sun, 22 Jul 2018	4 days

Nacala to Port Louis via Durban

Nacala, Mozambique (MZMNC) to Port Louis, Mauritius (MUPLU)

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 MSC CHIARA	ZN823R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	CDN - PORTO DE NACALA	 TRAN-SHIPMENT	Sat, 02 Jun 2018	15 days
 MSC CAPRI	ZN820R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	CDN - PORTO DE NACALA	 TRAN-SHIPMENT	Tue, 05 Jun 2018	15 days
 MSC MILA 3	ZN824R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	CDN - PORTO DE NACALA	 TRAN-SHIPMENT	Wed, 20 Jun 2018	15 days
 MSC CAPRI	ZN826R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	CDN - PORTO DE NACALA	 TRAN-SHIPMENT	Tue, 03 Jul 2018	15 days
 MSC MILA 3	ZN828R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	CDN - PORTO DE NACALA	 TRAN-SHIPMENT	Tue, 17 Jul 2018	15 days

Maputo to Port Louis via Durban**Maputo, Mozambique (MZMPM) to Port Louis, Mauritius (MUPLU)**

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 MSC DENISSE	ZN819R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	DP WORLD MAPUTO CONTAINER TERMINAL	 TRAN-SHIPMENT	Tue, 05 Jun 2018	30 days
 MSC NICOLE	ZN823R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	DP WORLD MAPUTO CONTAINER TERMINAL	 TRAN-SHIPMENT	Tue, 19 Jun 2018	30 days
 MSC HINA	ZN825R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	DP WORLD MAPUTO CONTAINER TERMINAL	 TRAN-SHIPMENT	Tue, 03 Jul 2018	30 days
 MSC CAPRI	ZN826R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	DP WORLD MAPUTO CONTAINER TERMINAL	 TRAN-SHIPMENT	Tue, 10 Jul 2018	30 days
 MSC NICOLE	ZN827R	SOUTH AFRICA TO MOZAMBIQUE/MOMBASA SERVICE	DP WORLD MAPUTO CONTAINER TERMINAL	 TRAN-SHIPMENT	Tue, 17 Jul 2018	30 days

Durban, South Africa (ZADUR) to Port Louis, Mauritius (MUPLU)

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 MSC REGULUS	FY824R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	DIRECT	Sat, 23 Jun 2018	5 days
 MSC LUCIANA	FY825R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	DIRECT	Sat, 30 Jun 2018	5 days
 ARCHIMIDIS	FY826R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	DIRECT	Sun, 08 Jul 2018	5 days
 MSC JOANNA	FY827R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	DIRECT	Sat, 14 Jul 2018	5 days

Port Louis, Mauritius (MUPLU) to Durban, South Africa (ZADUR)

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 MSC SATURN	ZF819A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sat, 02 Jun 2018	4 days
 MSC ANTONELLA	ZF820A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sat, 09 Jun 2018	6 days
 MSC SAVANNAH	ZF821A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sat, 16 Jun 2018	4 days
 GULF BRIDGE	ZF822A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 24 Jun 2018	4 days
 SM NEW YORK	ZF823A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sat, 30 Jun 2018	4 days
 MSC EARTH	ZF824A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 08 Jul 2018	4 days
 MSC ALGECIRAS	ZF825A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sat, 14 Jul 2018	4 days
 MSC MARS	ZF826A	INGWE SERVICE	MAURITIUS CONTAINER TERMINAL	DIRECT	Sat, 21 Jul 2018	4 days

Port Louis, Mauritius (MUPLU) to Tamatave, Madagascar (MGTM)

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 MSC MIRELLA	KA822A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sat, 02 Jun 2018	3 days
 MSC JEANNE	KA823A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 10 Jun 2018	3 days
 MSC MIRELLA	KA824A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 17 Jun 2018	4 days
 MSC JEANNE	KA825A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 24 Jun 2018	4 days
 MSC MIRELLA	KA826A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 01 Jul 2018	4 days
 MSC JEANNE	KA827A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 08 Jul 2018	4 days
 MSC MIRELLA	KA828A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 15 Jul 2018	4 days
 MSC JEANNE	KA829A	INDIAN OCEAN RELAY SERVICE 1	MAURITIUS CONTAINER TERMINAL	DIRECT	Sun, 22 Jul 2018	4 days

Tamatave, Madagascar (MGTMM) to Port Louis, Mauritius (MUPLU)

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 MSC JEANNE	KA821R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	DIRECT	Tue, 05 Jun 2018	2 days
 MSC MIRELLA	KA822R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	DIRECT	Wed, 06 Jun 2018	2 days
 MSC JEANNE	KA823R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	DIRECT	Thu, 14 Jun 2018	1 days
 MSC MIRELLA	KA824R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	DIRECT	Sat, 23 Jun 2018	2 days
 MSC JEANNE	KA825R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	DIRECT	Thu, 28 Jun 2018	2 days
 MSC MIRELLA	KA826R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	DIRECT	Thu, 05 Jul 2018	2 days

Services between Madagascar and South Africa (transship via Port Louis)

Tamatave, Madagascar (MGTMM) to Durban, South Africa (ZADUR)

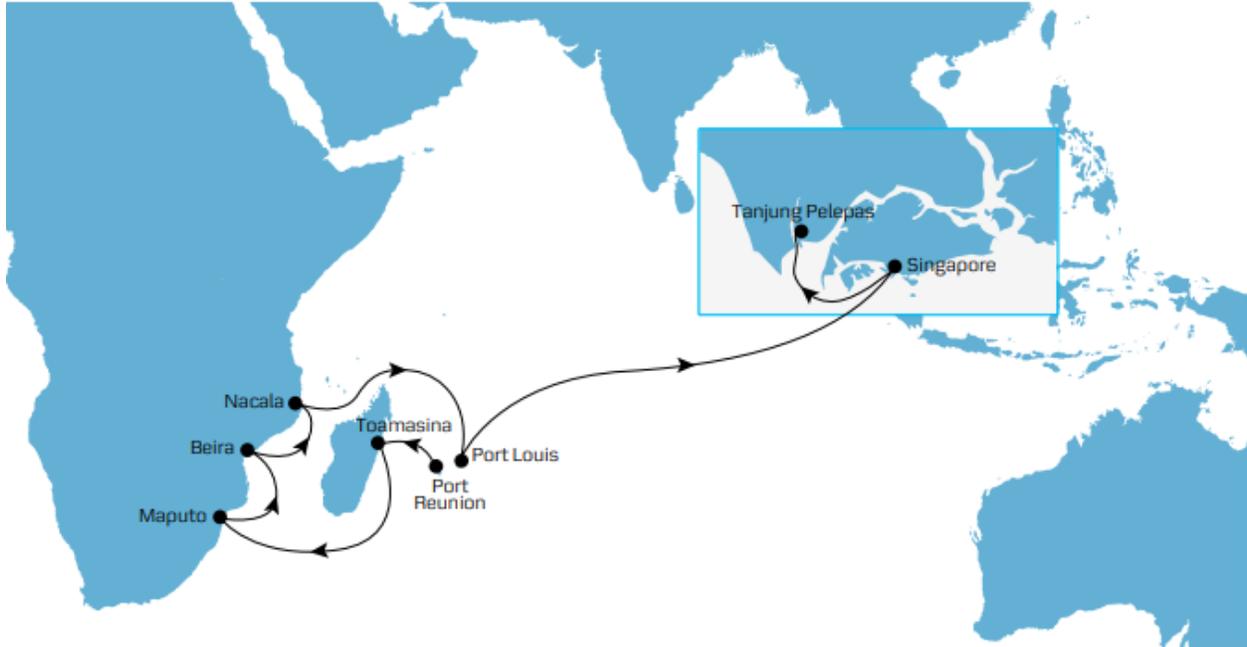
Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit	Arrival Date
 MSC JEANNE	KA821R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	 TRAN-SHIPMENT	Tue, 05 Jun 2018	6 days	Mon, 11 Jun 2018
 MSC MIRELLA	KA822R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	 TRAN-SHIPMENT	Wed, 06 Jun 2018	6 days	Tue, 12 Jun 2018
 MSC JEANNE	KA823R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	 TRAN-SHIPMENT	Thu, 14 Jun 2018	6 days	Wed, 20 Jun 2018
 MSC MIRELLA	KA824R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	 TRAN-SHIPMENT	Sat, 23 Jun 2018	6 days	Fri, 29 Jun 2018
 MSC JEANNE	KA825R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	 TRAN-SHIPMENT	Thu, 28 Jun 2018	6 days	Wed, 04 Jul 2018
 MSC MIRELLA	KA826R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	 TRAN-SHIPMENT	Thu, 05 Jul 2018	6 days	Wed, 11 Jul 2018
 MSC JEANNE	KA827R	INDIAN OCEAN RELAY SERVICE 1	TAC - MICTSL (MADAGASCAR INTERNATIONAL CONTAINER T	 TRAN-SHIPMENT	Thu, 12 Jul 2018	6 days	Wed, 18 Jul 2018

Durban, South Africa (ZADUR) to Tamatave, Madagascar (MGTMM)

Vessel	Voyage	Service	Terminal	Service Type	Departure Date	Transit
 MSC REGULUS	FY824R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	 TRAN-SHIPMENT	Sat, 23 Jun 2018	8 days
 MSC LUCIANA	FY825R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	 TRAN-SHIPMENT	Sat, 30 Jun 2018	8 days
 ARCHIMIDIS	FY826R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	 TRAN-SHIPMENT	Sun, 08 Jul 2018	8 days
 MSC JOANNA	FY827R	AFRICA EXPRESS	DURBAN CONTAINER TERMINAL	 TRAN-SHIPMENT	Sat, 14 Jul 2018	8 days

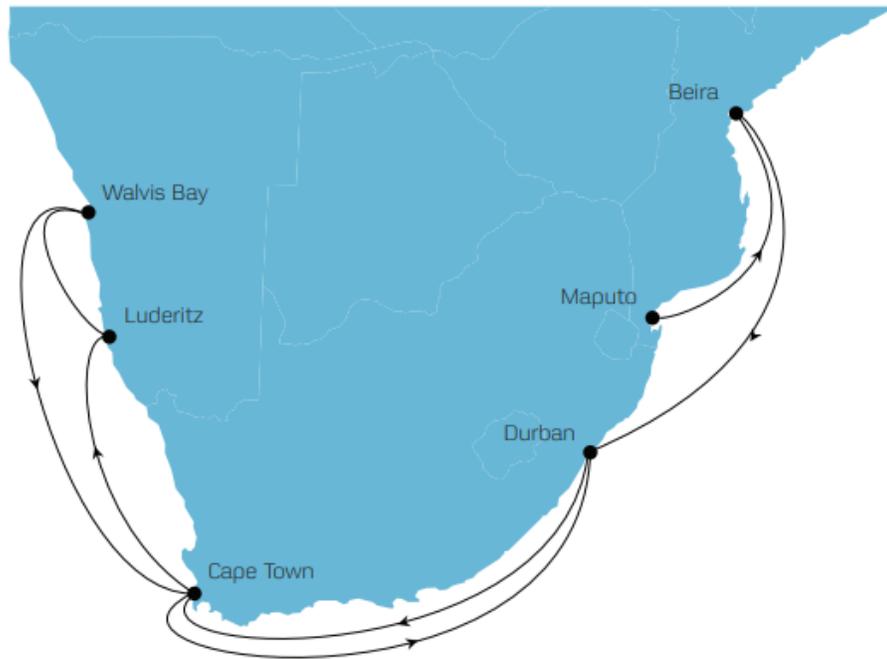
Maersk

M-Express BH



Port	Arrives	Departs	Transit (Days)
PORT REUNION, Reunion	--	Friday	--
TOAMASINA, Madagascar	Saturday	Sunday	1
MAPUTO, Mozambique	Thursday	Friday	6
BEIRA, Mozambique	Monday	Thursday	10
NACALA, Mozambique	Wednesday	Sunday	19
PORT LOUIS, Mauritius	Monday	Tuesday	31
SINGAPORE, Singapore	Sunday	Monday	44
TANJUNG PELEPAS, Malaysia	Monday	--	45

23C - MOZAMBIQUE FEEDER



Port	Arrives	Departs	Transit (Days)
MAPUTO, Mozambique	Fri	Sun	42
BEIRA, Mozambique	Thu	Sat	4
DURBAN, South Africa	Tue	Wed	9
CAPE TOWN, South Africa	Tue	Wed	16
LUDERITZ, Namibia	Fri	Sat	19
WALVIS BAY, Namibia	Mon	Fri	22
CAPE TOWN , South Africa	Tue	Wed	30
DURBAN , South Africa	Mon	Wed	36

IOI-Service



Port	Arrives	Departs	Transit
Salalah, Oman	TUE	WED	--
Port Reunion, Reunion	TUE	WED	7
Port Louis, Mauritius	WED	FRI	9
Toamasina, Madagascar	MON	TUE	13
Victoria, Seychelles	THU	FRI	17
Salalah, Oman	TUE		

Annex 4: APEI+ Crop Production**Average annual crop production, 2012-2016 in tons**

	Mauritius	Seychelles	Madagascar	Mozambique	Malawi	Zambia
Beans, dry			85,952	147,470	183,311	**
Beans, green	1,455		1,167			**
Cashew nuts, with shell			7,087	79,246		**
Cassava	616	232	2,994,412	7,595,305	4,920,820	1,021,020
Chick peas					66,625	
Chillies and peppers, dry			2,010		2,524	621
Chillies and peppers, green	1,606		347			
Cinnamon (canella)		15	2,407			
Cloves			19,071			
Coffee, green			49,748	841	6,515	6,446
Cotton lint			5,033	53,333	53,733	56,863
Cow peas, dry			6,055	103,660	34,094	**
Garlic	115		2,718			
Ginger	792		53			
Grapes			13,060			**
Groundnuts, with shell	422		48,291	132,933	339,266	136,151
Lentils			819		1,091	
Maize	507		368,133	1,519,930	3,276,492	2,845,486
Nutmeg, mace and cardamoms			15		94	
Nuts, nes			37		3,691	
Onions, dry	7,301		10,281	112,829	52,872	38,791
Peas, dry			20,986		41,233	
Peas, green	6		1,343		1,439	
Pepper (piper spp.)			5,601		1,875	66
Pigeon peas					310,071	
Potatoes	17,916		235,555	221,493	2,364,262	32,112
Pulses, nes			11,505	206,193	**	31,455
Rice, paddy	734		3,935,458	143,265	112,663	38,379
Seed cotton			14,652	86,045	129,209	149,038
Sesame seed				67,242		
Soybeans			41	**	120,825	186,270
Sugar cane	3,923,034		2,937,330	3,205,081	2,876,990	4,067,694
Sunflower seed				7,935	13,937	36,853
Tea	1,458	22	384	28,331	46,115	918
Tobacco, unmanufactured	69		1,707	80,455	107,438	112,983
Vanilla		0	2,985		20	
Vegetables, leguminous nes					910	
Wheat			6,000	19,106	1,375	220,475

** indicates commercial quantities available (for some reason not reported in FAOStat data)

Source: FAOSTAT, Accessed 29 June 2018.