

Promoting a maize-to-livestock feed value chain in the Indian Ocean Islands

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Key messages

Developing regional agro-food value chains is increasingly being recognised as a means to promote agricultural transformation and food security in the Indian Ocean Islands (IOI) region of Eastern and Southern Africa, and maize has been earmarked as a key commodity to promote within this context.

Trade in maize for human consumption is limited in IOI, but the region's livestock feed processors are key sources of demand and have shown an interest in investing in Madagascar in order to help establish the country as a regional procurement base for maize.

Such investment could stimulate increased maize production in Madagascar, including for local consumption, but low productivity, a weakly organized local value chain, deficient infrastructure, a 'risky' investment climate, and complex export procedures discourage investment and limit possibilities for growing regional maize trade.

Appropriate regulatory reform coupled with coordinated public and private investment is needed to address these obstacles, and could be supported by the establishment of a public-private platform to facilitate dialogue between stakeholders in the region on priority interventions needed to boost maize trade in the region.

Introduction

This briefing note examines the potential for developing a maize-to-livestock feed value chain in the Indian Ocean Islands (IOI) region of Eastern and Southern Africa (defined here as comprising the countries of Comoros, Madagascar, Mauritius and Seychelles and the French territory of Réunion) in order to promote agricultural transformation and food security in the region. In doing so, the note identifies a number of obstacles to the development of such a value chain in IOI, including the challenges faced by businesses

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seeking to invest in and access the relevant regional markets. It also highlights existing initiatives upon which efforts to address these challenges and promote a regional maize-to-livestock feed value chain could build. Finally, the note provides some recommendations for facilitating effective dialogue among key stakeholders in this value chain in order to better connect private operators to regional markets.

The note, which seeks to contribute to national and regional policy processes to promote agricultural transformation, food security and intra-regional trade and investment in the IOI region, as well as to thinking by development partners on how to support such processes, is based on desk research carried out between January and June 2016, and interviews with stakeholders conducted in Mauritius (January 2016) and Madagascar (April 2016). The note also benefits from input from a number of individuals, including representatives from the Food and Allied Group (Mauritius), from the Chambres de Commerce et d'Industrie (CCI) Madagascar, the Economic Development Board of Madagascar (EDBM) and Agrifarm-Agrival (Madagascar), and from Urcoopa and CIRAD (Réunion).

Regional value chains for agricultural development and food security

The relationship between international trade, agricultural development and food security is complex, as greater involvement in trade can have both positive and negative impacts on factors such as incomes, employment, food costs, food availability, public and private investment and social spending, all of which are potentially important determinants of a country's agricultural development and food security (Diaz-Bonilla, 2013). Indeed, the limited evidence that exists on the impacts of trade on food security suggests that "how trade affects food security is largely context-specific" (FAO, 2015). Nevertheless, despite this mixed picture, it remains true that participating in international trade - and in the regional and global value chains that increasingly drive international trade today - provides opportunities for countries to boost their agricultural production (e.g. through enhanced access to inputs and the scale efficiencies permitted by specialisation and access to larger markets), diversify production away from primary agricultural commodities (e.g. by taking advantage of technology transfers to add value to agricultural produce) and promote domestic food security (e.g. by increasing rural employment and incomes and bringing down domestic food prices).

In Africa, where agriculture remains the backbone of many economies, and a source of employment for around half the population (NEPAD, 2013), there has recently been a "strong resurgence of interest" in promoting value chains in order to add value, lower transaction costs, diversify rural economies and contribute to higher rural incomes (Webber and Labaste, 2010). For the most part, Africa's agricultural value chains remain underdeveloped (Schaffnit-Chatterjee, 2014), a legacy of the continent's historical position in global agricultural trade as a producer and exporter of primary commodities (AfDB, OECD, UNDP, 2014). Developing the competitiveness of Africa's own agricultural value chains is increasingly being recognised as an effective way to generate economic growth and reduce rural poverty (e.g. by linking smallholder farmers to regional markets), both crucial elements in efforts to promote economic development and food security on the continent (Webber and Labaste, 2010).

This thinking is also influencing Africa's leaders and policymakers. For example, at the African Union Summit in Malabo, Equatorial Guinea, in 2014, African heads of state and government committed to tripling intra-African trade in agriculture and developing partnerships to promote agricultural value chains in order to achieve the agricultural transformation and food security objectives of the Comprehensive Africa Agricultural Development Programme (CAADP) (AU, 2014). In line with this focus, the Regional CAADP Compact of the Common Market for Eastern and Southern Africa (COMESA), of which Comoros, Madagascar, Mauritius and Seychelles are members, prioritises removing barriers to agricultural trade and linking farmers to markets, including through developing regional value chains. In order to give effect to this Compact, COMESA is currently working towards official endorsement of its Regional Investment Programme in Agriculture - Priority Area 2 (RIPA-II), which, among other things, seeks to establish public-private platforms for promoting regional value chains in strategic agro-food commodities.

In IOI, the role of regional trade and value chain development in promoting agricultural transformation and food security is particularly relevant, given that:

- a) Madagascar aside, IOI rely on imports from Asia, Europe and South America for a large part of their staple diet, making them particularly vulnerable to fluctuations in supply costs;

- b) Madagascar accounts for 98 percent of agricultural land (excluding sugar cane) in IOI, meaning it has the potential to play a much bigger role than it currently is in contributing to the food security of the region;² and
- c) significant investment is needed in Madagascar's agricultural sector to boost productivity and address Madagascar's own food security concerns, and at least some of this investment could come from within the region.

In this regard, the Indian Ocean Commission (IOC), an intergovernmental organisation to which IOI belong, has been exploring the potential for Madagascar to become the 'breadbasket' of the region (Le Mauricien, 2016), and has worked with the Food and Agricultural Organization of the United Nations (FAO) to formulate a food security programme for the region, the Programme Régional de Sécurité Alimentaire et Nutritionnelle (PRESAN).

PRESAN, which was officially adopted by the IOC at its 31st Council of Ministers Meeting in February 2016,³ aims to contribute to increased agricultural productivity, production, and trade in the IOC region, as well as to enhanced food and nutrition security (FAO, 2016). The development of regional agro-food value chains to contribute to these objectives is a key principle of the programme. Focusing largely on production in Madagascar, PRESAN seeks to promote the productivity and competitiveness of a number of priority agro-food value chains, including the maize value chain, as well as to support efforts to develop regional markets for these products (FAO, 2016).

The potential for a maize-to-livestock feed value chain in the Indian Ocean Islands

Demand for maize in IOI

In IOI, rice is the most important staple food, and maize is not as central to the diets of local populations as it is in other parts of Eastern and Southern Africa. Even in Madagascar, which produces a significant amount of maize as a staple crop (see below), and where consumption of maize (as the main staple in certain regions in the South of Madagascar or as a substitute by households that cannot afford to purchase rice) (USAID, 2013) has increased notably over the past two decades, the per capita consumption of maize and maize products is only around 21kg per year (USAID, 2013), which is four to five times less than in countries such as Malawi, Zambia and Zimbabwe (Ranum et al., 2014).

Given the small size of the region's population, and the fact that the region's biggest country, Madagascar, is largely self-sufficient in maize, it is not surprising that IOI is not a particularly large importer of maize and maize products. Trade figures from the International Trade Centre (ITC) show that there is very little intra-regional trade in maize and maize products in IOI and that most maize and maize products imported by countries in the region come from countries outside the region (Argentina, Paraguay and South Africa for maize, and South Africa, EU, US, China and India for maize products - see Table 1). These figures also show that, Réunion aside, Mauritius accounts for the bulk of maize imported into the region (with most of this maize coming from Argentina, and, to a lesser degree, Paraguay).

The main sources of demand for imported maize in IOI are the livestock feed processing mills in Mauritius and Réunion. Currently there are two major livestock feed producers in Mauritius (Livestock Feed Limited, part of the Food and Allied Group, and Meaders Feeds, part of Innodis), both of whom produce for the local and regional markets. Due to a lack of production in Mauritius, all the maize and soya bean (the two major inputs in feed production) utilised by Livestock Feed Limited and Meaders Feeds is imported, currently under contract from suppliers in South America.⁴ Meanwhile, the Urcoopa Group, which operates two feed mills in Réunion, imports its maize requirements from Europe.⁵

The fact that these processors have to import the bulk of their inputs from such remote sources of supply leaves them highly exposed to market risks and uncertainties, and forces them to maintain stocks that are cumbersome to manage and add to costs. This has prompted their interest in the potential of a viable

² See: www.agriculture-biodiversite-oi.org/en/Nature-agriculture/News-from-the-field/Articles/Food-security-a-priority-for-Indian-Ocean-islands

³ See <http://commissionoceanindien.org/activites/securete-alimentaire/la-coi-presente-son-programme-regional-de-securete-alimentaire-et-nutritionnel-presan-formule-avec-lappui-technique-de-la-fao-26-avril-16-antananarivo/>

⁴ Interview with Meaders Feeds, Riche Terre, Mauritius, 28 January 2016.

⁵ Telephone interview with Urcoopa, 3 June 2016.

regional procurement base and supply chain, with Madagascar the main focus due to its potential to produce a marketable surplus of maize. Indeed, the Food and Allied Group already procures maize in Madagascar through its local subsidiary, LFL Madagascar, while Urcoopa has explored the feasibility of investing in maize production in the country.⁶ As important sources of demand for maize in IOI, these livestock feed processors could act as key drivers of a maize-to-livestock feed value chain in IOI. Importantly, they could offer producers in Madagascar, who already supply locally-based livestock feed producers, a new market for their maize, and could also potentially crowd in much-needed investment into agricultural production in Madagascar.

Table 1: IOI* imports of maize, maize seed and maize products, 2013-2015 (USD '000s)

	2013	2014	2015	Main supplying markets
Total agricultural imports	1,977,315	2,069,660	1,607,221	
Maize	33,975	23,224	21,585	Argentina, Paraguay, South Africa
Maize as % of total agricultural imports	1,7%	1,1%	1,3%	
Maize (Mauritius only)	30,712	19,725	18,877	Argentina, Paraguay
Maize seed	99	4,749	158	Argentina (2014)
Maize products and byproducts (i.e processed maize, maize bran, flour, groats, meal, oil, oil-cake and starch)	1,963	1,458	4,047	South Africa, EU, US, China, India

Source: Own calculations using ITC Trademap database (www.trademap.org). *Excluding Réunion

Production of maize in Madagascar

In IOI, only Madagascar currently produces significant quantities of maize (366,000 tonnes in 2014 according to FAO estimates),⁷ and, given the lack of cultivable land in the rest of IOI, Madagascar is the only country in the region with the potential to produce significant surpluses of maize for regional export. Maize is the fourth most important crop in Madagascar in terms of volume produced, after rice, cassava and potatoes, and is currently grown throughout the country, with the main production areas concentrated in the Middle West, the Central Highlands and the Southwest of the country (USAID, 2013). Low productivity of staple crops, including maize, is a major issue in Madagascar, where maize yields average around 1.3 tonnes per hectare (See Table 2 below). This low productivity results from, among other things, heavy dependence on subsistence agriculture, limited use of improved inputs (e.g. seeds and fertilisers), lack of infrastructure (e.g. irrigation), issues around land use and land tenure and periodic natural disasters such as cyclones and locust swarms. Despite maize availability in most surplus production areas, poor road conditions due to heavy rains limit the movement of surplus maize to deficit areas (USAID, 2013).

Table 2: Maize production in Madagascar, 2010-2014

	2010	2011	2012	2013	2014
Production (tonnes)	411,914	428,390	447,948	381,000	366,000
Area under harvest (Ha)	293,313	301,589	300,000	280,000	280,000
Average yield (Hg/Ha)	14,043	14,204	14,932	13,607	13,071

Source: FAOSTAT (<http://faostat3.fao.org/>)

As with other crops, maize production in Madagascar is undertaken by (relatively unproductive) small-scale producers, with around 700,000 maize producers producing on approximately 262,000 hectares of land.⁸ Aggregating this scattered production is a big challenge, and a lack of adequate transportation, storage or processing infrastructure in the country adds significant marketing costs (USAID, 2013). The maize value

⁶ Telephone interview with Urcoopa, 3 June 2016.

⁷ See <http://faostat.fao.org/>

⁸ Interview with Livestock Feed Ltd., Pailles, Mauritius, 26 January 2016.

chain in Madagascar is, nevertheless better organised than other staple crop value chains in the country, because it is partly driven by the agribusiness industry (around 75 percent of maize produced in Madagascar is for human consumption,⁹ but the remainder is mostly used as an input into the production of livestock feed for the local market) (USAID, 2013). In the domestic maize-to-livestock feed value chain in Madagascar, producers sell their surplus production to collectors, who work with brokers (commissionaires). Collectors then sell to wholesalers who store maize in their own facilities and supply Madagascar's three major livestock feed producers - LFL Madagascar, SABMA and Agrifarm-Agrival.¹⁰ Some collectors also export small quantities to Réunion where the maize is used as poultry feed.¹¹

A former Malagasy government promoted maize production through the *Projet National Maïs* (1989-2002) (FAD, 2004), but the current government does not have any policies or programmes in place dedicated specifically to encouraging maize production. The government has, however, recently developed a number of policies and policy frameworks to support agricultural development more generally in Madagascar, including its national CAADP Compact, the *Programme Sectoriel Agriculture Elevage Pêche* (PSAEP) and *National Investment Plan for Agriculture, Livestock and Fisheries* (PNIAEP), as well as an agricultural sector development plan, the *Lettre de Politique Sectorielle Agriculture, Elevage et Pêche* (LPAEP) (World Bank, 2016). The government is also implementing a strategy to promote private sector investment in agribusiness – with EDBM playing a leading role in driving relevant reforms – and preparing legislation for *Agricultural Investment Zones*.¹²

There appears to be significant agreement that Madagascar has the agroecological potential to become an even bigger producer of maize than it currently is, and that if the various policy, organisational, institutional and infrastructural challenges that hamper the productivity of the maize sector are addressed, the country could become a competitive supplier to livestock feed producers in IOI, as well as a bigger contributor to the region's food security.¹³

Trade and investment agreements between IOI

A viable regional value chain requires not only sufficient demand and supply, but also an enabling environment for regional trade and investment. Such an environment is already partly in place in IOI. Trade between IOI has been liberalised through a number of trade arrangements to which some, if not all, IOI are party. These include the COMESA Free Trade Area (for all IOI except Réunion), the Southern African Development Community (SADC) Protocol on Trade (for all except Comoros and Réunion) and preferences granted under the IOC (currently only being applied for trade between Mauritius and Madagascar). Through these arrangements, goods traded between IOI are exempt from import duties, provided they meet the relevant rules of origin. In addition, exports from Comoros, Madagascar, Mauritius and Seychelles to Réunion benefit from various duty-free quota-free arrangements offered by the European Union (EU), although agro-food exports do need to comply with the strict sanitary and phytosanitary (SPS) controls imposed by the EU. Other trade-related bilateral agreements have also been signed by IOI (including a number between Madagascar and Mauritius) to promote bilateral trade and investment. These include a Protocol on Veterinary Services (specifically related to exportation of animal feed to Madagascar; 2008), a Memorandum of Understanding on Phytosanitary Cooperation (2008),¹⁴ and a Protocol on Special Economic Zones (SEZs) (2016).¹⁵

Madagascar and Mauritius have also signed and ratified a bilateral investment treaty, the Agreement on the Promotion and Protection of Investments between the Governments of the Republic of Mauritius and the Republic of Madagascar (2004).¹⁶ This treaty protects investments made between the two countries from arbitrary expropriation and other such risks. To further promote investments between the two

⁹ Interview with expert from EDBM, Antananarivo, Madagascar, 5 April 2016.

¹⁰ Interviews with LFL (Food & Allied Group), MADCO Madagascar and Entreprise céréalière Madagascar, Antananarivo, Madagascar, 6 April 2016.

¹¹ E-mail correspondence, Responsible for Genetics and Breeding, CIRAD, 15 June 2016.

¹² Telephone interview with Urcoopa, 3 June 2016.

¹³ Interviews with various stakeholders, Mauritius, January 2016, and Madagascar, April 2016.

¹⁴ See:

<http://agriculture.govmu.org/English/Legislation/MoU's,%20International%20Agreements%20and%20Conventions/Pages/MoUs.aspx>.

¹⁵ Through this Protocol, Madagascar seeks to implement the special economic zone model used successfully by Mauritius. Interview with expert from EDBM, Antananarivo, Madagascar, 5 April 2016.

¹⁶ For the full text of the agreements, see: <http://investmentpolicyhub.unctad.org/IIA/IIAsByCountry#iialnnerMenu>.

countries, Madagascar's EDBM and Mauritius' Board of Investment (BOI) recently signed a memorandum of understanding to strengthen cooperation between the two institutions.

Challenges to promoting a regional maize-to-livestock feed value chain in IOI

Despite existing demand in IOI for maize for human consumption (especially in Madagascar) and as an input into livestock feed production (especially in Mauritius and Réunion), and the agroecological potential Madagascar possesses to increase its maize production and meet this demand, there are a number of interrelated challenges that need to be overcome in order to realise increased maize production in Madagascar and to develop a viable maize-to-livestock feed value chain in the region. These include obstacles to investment in the maize value chain in Madagascar, obstacles to upgrading this value chain and obstacles to maize value chain operators in Madagascar accessing regional markets. The most prominent of these are explored below.

Low agricultural productivity in Madagascar

The viability of a maize-to-livestock feed value chain in IOI will depend on increasing maize production in Madagascar and ensuring that production in the country becomes more competitive vis-à-vis maize produced elsewhere. As noted above, most agricultural production in Madagascar is still undertaken on a small scale with low productivity levels, high post-harvest losses and low quality due to, among other things, poor soil fertility management and use of local seeds (World Bank, 2016).¹⁷ This is true for maize production as well, and maize producers typically lack access to inputs and technology, leading to recurring struggles to satisfy local demand. Where livestock feed producers from the region find themselves competing with Malagasy consumers for limited supply, this might trigger a backlash against maize exports from Madagascar based on the notions, already prevalent in the country, that maize should be primarily for human consumption, rather than for animals, and that Madagascar should focus on producing food for itself rather than for export.¹⁸ There is therefore undoubtedly need for transformation of maize production in Madagascar in order to boost local supply potential. Investment in the sector is crucial, as is the introduction of better technologies and capacity building for farmers.

Insufficiently organised value chain

While the maize value chain in Madagascar is better organised than other agricultural value chains in the country, the value chain is still not sufficiently organised. This is especially true at the production end of the chain where the multitude of scattered smallholder farmers are not effectively organised (e.g. into functioning producer associations and cooperatives) and do not have much bargaining power in the value chain. One result of this is that maize producers struggle to get their product to processors and become heavily reliant on collectors. The latter generally have the capacity to transport and store harvested maize and are able to deal directly with processors and exporters. They are, however, perceived as taking advantage of this situation (as well as the fact that farmers lack access to market information, cannot store their produce and require upfront cash payment), by paying low prices to farmers. Having collected maize from producers, collectors also have the ability to manipulate prices paid by processors and consumers.¹⁹

Given the important (if somewhat controversial) role they play in the Malagasy maize value chain, it would be difficult to remove collectors from the picture completely. Moreover, for some producers, collectors represent the only realistic market for their produce and for breaking out of pure subsistence farming.²⁰ There is, however, need for better organisation of the value chain, perhaps initially through the organisation of farmers into cooperatives or producer associations, and in the longer run through the establishment of an interprofessional organisation that brings together stakeholders from along the value chain. Better organisation of the value chain is crucial for ensuring that value produced along the chain is shared in a more equitable way, and that farmers – particularly small-scale producers – are able to generate greater incomes. It is difficult to see how smallholder production in Madagascar can be scaled up if farmers are not adequately incentivised to invest in increased production.²¹

¹⁷ E-mail correspondence, General Director, EDBM, 9 June 2016.

¹⁸ Interview, Director of Agriculture, Ministry of Agriculture, Antananarivo, Madagascar, 4 April, 2016.

¹⁹ Interview, Agriculture Experts, World Bank, Antananarivo, Madagascar, 6 April, 2016.

²⁰ E-mail correspondence, Responsible for Genetics and Breeding, CIRAD, 15 June 2016.

²¹ Interview, Agriculture Experts, World Bank, Antananarivo, Madagascar, 6 April, 2016

Poor infrastructure

The lack of adequate transportation and trade infrastructure in Madagascar also hampers the ability of Malagasy maize producers to partake in regional and global trade. The country has three ports of sufficient capacity to handle the volumes of maize trade that would be involved in a regional maize-to-livestock feed value chain in IOI - the Port of Tamatave (Toamasina) on the east coast of the country, northeast of the capital Antananarivo, the Port of Diego Suarez (Antsiranana) in the far northeast of the country and the Port of Fort Dauphin on the southeast coast, in the Anosy Region. The poor quality of many roads in Madagascar, however, means that getting maize to these ports, potentially from areas quite far away, would involve very high transport costs, discouraging potential exporters.²² Indeed, poor transport infrastructure and high transportation costs constrain the movement of maize from surplus to deficit areas within Madagascar. The constraints could be somewhat alleviated in the case of exports if such production for export was encouraged close to the aforementioned ports, but doubts exist as to how ideal the areas around these ports are for maize production (e.g. in terms of soil fertility).

Another crucial infrastructural shortcoming in Madagascar that inhibits the development of a regional maize-to-livestock feed value chain is the lack of sufficient and adequate post-harvest infrastructure in the country, including storage and treatment facilities and processing plants. Investment in such infrastructure - whether from public or private sources - is badly needed to promote better post-harvest management of maize production in Madagascar, a key necessary condition for greater maize production in Madagascar and the development of a regional maize-to-livestock feed value chain.

Investment disincentives in Madagascar

Another big challenge for the promotion of a maize-to-livestock feed value chain in IOI is that despite the fact that Malagasy agriculture badly needs investment, the economic and political environment in Madagascar has not been considered to be particularly conducive to investment in agribusiness (World Bank, 2016),²³ and foreign investors in particular are perceived to face certain risks when investing in the country. Uncertain land rights are one of the major constraints to agricultural investments in Madagascar, and poorly managed large scale land acquisitions in Madagascar in the past - notably the aborted procurement by Korean company Daewoo in 2008 of 1.3 million hectares of land to produce maize and palm oil for export back to Korea - led to serious conflicts that were an aggravating factor for the 2009 political crisis in Madagascar (World Bank, 2016). Similarly, the recent signing of the SEZ Protocol between Madagascar and Mauritius was apparently opposed by those in Madagascar who disapprove of the autonomy such a protocol would give to foreigners on Malagasy soil.²⁴

Most investments in Madagascar requiring land are "imposed in a top-down manner", generally to the disadvantage of both local communities and investors (World Bank, 2016). For potential investors in Madagascar's agricultural sector, access to agricultural land involves risks that could jeopardise their investments, as there is no relevant mechanism to guide such investments. For smallholders in Madagascar, agreements with investors can be beneficial so long as their land rights are respected, but due to past experiences there is currently a negative attitude towards foreign investment in agricultural land in Madagascar (World Bank, 2016).

There is also a perception that the Malagasy government has not done enough in the past to assist investors when they face challenges in Madagascar. The increasingly prominent role of the EDBM in promoting investment in agriculture and agribusiness is a positive sign in this regard. Better institutional capacity for land management and land use planning in Madagascar is, however, also required in order to facilitate the sustainable investments in maize production that are required to develop the country's potential as a maize exporter and to promote a regional maize-to-livestock feed value chain in IOI.

In addition, the value added tax (VAT) regime in place in Madagascar does not incentivise investment in industrial livestock feed processing. While industrially produced feed is exempt from VAT, processors are obliged to pay VAT of 20 percent on maize and other goods and services required for production. At the

²² The costs involved in transportation in Madagascar also discourage internal trade, e.g. from the maize-producing Northern part of the country to the famine-hit South. These costs can quadruple the price of maize. Telephone interview with Urcoopa, 3 June 2016.

²³ As was expressed by various stakeholders, Antananarivo, Madagascar, April 2016.

²⁴ Telephone interview with Urcoopa, 3 June 2016.

same time, informal feed producers can avoid paying VAT. This results in industrially produced feed being less competitive vis-à-vis the lower quality product produced by informal producers.²⁵

Trade barriers

Although the trade regime among IOI is relatively open, with few obvious restrictions on trade in goods, stakeholders in Madagascar note a number of challenges they face when attempting to export goods to the region. They report, for example, that the decentralisation of Malagasy institutions and the various procedures and rules applied by these different institutions, create delays and increase the costs involved in exporting. Rules for exporting are also perceived as changing with changes in government, creating problems for buyers and exporters. In addition, exporting also requires a significant amount of paperwork (requirements for exporting to Réunion are noted as being particularly complex), leading to a discouraging administrative burden.²⁶ In this regard, the Ministry of Trade and Consumption in Madagascar is currently in the process of finalising the creation of a centralised unit for export, aimed at: unifying all procedures to reduce costs and delays; creating one point for information on export procedures; and simplifying the administrative procedures required for exporting. Some Malagasy stakeholders also note language barriers as impediments to exporting to Anglophone markets.²⁷

Finally, stakeholders in Madagascar also mention difficulties arising from a lack of norms and standards among IOI, but this may not be such an issue for maize as the ISO9001 quality standard has been adopted for maize in Madagascar. There are currently, however, no formally accredited laboratories in the country and so samples that need to be tested in order to ensure compliance with certain SPS regulations have to be sent to laboratories abroad to be analysed.²⁸ While it is possible to carry out certain analyses in Madagascar, Mauritius and Réunion, in the case of controls on, for example, aflatoxins, samples of maize intended for export from Madagascar to Réunion have to be sent to laboratories in France, and it can take weeks before these are sent back. In order to avoid such delays, financing is currently being secured for the establishment of an accredited laboratory in Madagascar.²⁹

Initiatives to build on for a maize-to-livestock feed value chain in IOI

While the challenges highlighted above are not insignificant, efforts to develop a maize-to-livestock feed value chain would not have to start from scratch. Instead, they will be able to build on past and existing initiatives in Madagascar and the region, and could also potentially benefit from the various sources of support (including financial support) mobilised under the relevant policy frameworks for promoting agricultural transformation, agribusiness development, trade and value chain promotion and food security in IOI. Relevant in this regard is the COMESA Regional CAADP Compact, which seeks to promote regional agricultural value chains in Eastern and Southern Africa, and COMESA's RIPA-II, which seeks to support the development of regional agro-food value chains by attracting public and private support for the establishment of value chain-specific public-private dialogue platforms at a sub-regional level. Also relevant is the IOC-FAO PRESAN, which seeks to promote regional trade in a number of specific commodities - including maize - in order to boost food security in the IOC region. PRESAN has already attracted the interest of the International Fund for Agricultural Development (IFAD) and the European Union (EU), which, under the 11th European Development Fund (EDF11) has earmarked €17 million for supporting food security in the IOC (FAO, 2016).

The IOC, in collaboration with CIRAD, has also established a Regional Platform for Agricultural Research for Development (PReRAD - Plateforme Régionale de Recherche Agronomique pour le Développement), based in Réunion. The aim of this platform is to strengthen agricultural research (including research into diseases, seeds, post-harvest management and storage) in the Indian Ocean and mobilise regional stakeholders more effectively around food security objectives in the Indian Ocean.

²⁵ E-mail correspondence, Chief Corporate Affairs Officer, LFL (Food & Allied Group), 21 June 2016.

²⁶ Interview, CCI Coordinator, Federation of Chambers of Commerce and Industry from Madagascar, Antananarivo, Madagascar, 7 April, 2016 and follow-up e-mail correspondence, 16 May 2016.

²⁷ E-mail correspondence, CCI Coordinator, Federation of Chambers of Commerce and Industry from Madagascar, 16 May 2016.

²⁸ Interview, Project Manager, Agrifarm-Agrival, Antananarivo, Madagascar, 6 April 2016.

²⁹ Telephone interview with Urcoopa, 3 June 2016

There are also a number of specific projects (especially in Madagascar) that efforts to develop a regional maize-to-livestock feed could benefit from, connect to, or build on. For example, in 2014 the Malagasy Employers Association (FIV.MPA.MA), which represents a number of agribusinesses in Madagascar, established, together with the Malagasy Ministry of Agriculture, a National Maize Platform to bring together the various maize value chain actors in the country to reflect on ways to boost domestic production. The initiative is currently dormant due to a lack of financial support and leadership, but attempts to reinvigorate the platform are being explored by FIV.MPA.MA.³⁰

The development of Pôles Intégrés de Croissance (PIC),³¹ or Integrated Growth Poles, is a World Bank supported initiative by the Government of Madagascar to increase economic growth, focusing on certain poles (areas), while supporting a number of promising subsectors. The project focuses on the agribusiness sector, including on both subsistence and export crops. PICs are demand driven projects in rural areas that build on existing initiatives and growth potential and seek to establish public-private partnerships (PPPs). In the South Eastern region of Madagascar, there is a PIC which focuses on the production of maize for animal feed, with the objective of promoting exports to the region (Mauritius, Mayotte and Réunion) and potentially beyond (China). The PICs are still at a very early stage of development and are actively seeking 'champions' to drive the PPPs.

Other relevant projects and initiatives in Madagascar include: the identification of Agricultural Investment Zones (World Bank, 2016) by the Ministry of Agriculture and preparation of corresponding legislation; a World Bank supported initiative on Agricultural Growth and Land Management (World Bank, 2016); an Investment Promotion Support Project (PAPI) by the African Development Bank (AfDB, 2015); and investment by the International Finance Corporation (IFC) to, among other things, help build the capacity of farmers in Madagascar that supply maize for use in livestock feed production.³² It is interesting to note that many donor supported agricultural programmes are being implemented in the more food insecure southern half of Madagascar, while the northern half of the country arguably holds more potential for the development of agricultural activities that can drive agricultural transformation and economic development in the country.

Conclusion and recommendations

In IOI, a lot of focus is currently being put on promoting regional trade and value chains as a means to boost food security, and maize has been identified as one of a number of priority crops to be promoted in this context. The thinking behind this is that Madagascar has the agroecological potential to produce more maize than it currently does and that increased production in the future would be able to both satisfy domestic demand (for human consumption and for input in livestock feed production) and yield surpluses that could be exported to the region. Demand for imported maize in the region comes mostly from the region's livestock feed producers, based in Mauritius and Réunion, who currently procure maize from distant sources. The fact that these companies have demonstrated an interest in the development of a procurement base in Madagascar suggests that promoting maize production in Madagascar could improve food security in the region directly – through increased maize on the market for human consumption in Madagascar – and indirectly – through higher earnings for Malagasy producers and lower costs for the region's livestock feed producers.

This last outcome would be relevant for food security in IOI, as livestock feed constitutes a major expense for livestock producers in the region, accounting for as much as 80 percent of the costs involved in producing broiler chickens in Seychelles, for example.³³ Given that the livestock feed producers mentioned in this note supply their products throughout the region, any benefits they gain from lower costs due to a more efficient regional supply chain could be partly passed on to consumers throughout the region, including small- and medium-scale livestock producers. This in turn would help support the development of local livestock farming in, for instance, the Seychelles, where liberalisation of the agricultural sector, and a subsequent rise in imports has had a particularly detrimental effect on the local poultry industry.

³⁰ Interview, Malagasy Employers Group, FIV.MPA.MA, Antananarivo, Madagascar, 5 April 2016.

³¹ See: <http://www.pic.mg/>

³² See

<http://ifcextapps.ifc.org/ifcext%5CPressroom%5CIFCPressRoom.nsf%5C0%5C4C63AE15C84B592942257F7E0038BCF2>

³³ Discussions with stakeholders in Beau Vallon, Seychelles, July 2015.

Ultimately the viability of a regional maize-to-livestock feed value chain in IOI will depend on Malagasy maize becoming more competitive vis-à-vis maize produced elsewhere, and this in turn will depend largely on the effectiveness of efforts to increase production and productivity in Madagascar, including through promoting increased use of intensive agricultural methods and more efficient aggregation of smallholder production. Investment will be crucial in this regard, especially in order to address current shortcomings in: farm-level productivity; post-harvest handling; and storage, transportation and trade infrastructure. While some of this investment (e.g. in transport and trade infrastructure) will probably need to come from public sources (i.e. the Government of Madagascar), possibly with support from development partners (e.g. the European Union) and international financial institutions (e.g. the World Bank), private investment - including foreign investment - will be crucial in facilitating the transfer of technology, know-how and capital to producers and traders in Madagascar, and in spurring transformation of at least that segment of the agricultural sector in the country.

Livestock feed producers in IOI have already demonstrated an interest in investing in Madagascar, but they are unlikely to make large-scale investments in maize production or feed processing in the country if corresponding (public) investments are not made in the public goods that an efficient value chain requires, such as adequate infrastructure. They are also unlikely to invest unless they consider the potential returns to be worth the risk involved. There are a number of options for altering the risk-return equation for potential investors, including reform of the regulatory environment (e.g. ensuring a more secure land rights regime in Madagascar, and a more attractive VAT regime for investment in industrial feed production), and provision of subsidised risk financing to support investments with a public-good element. There is therefore need for some level of dialogue between public and private stakeholders to ensure coordinated investments and policy reforms and to ensure that reform processes respond to the needs of the region's businesses as well as the concerns of civil society. Such dialogue should also help identify who best to take the lead with regard to addressing the specific bottlenecks identified in this note, and whether there is scope for reviving, connecting or building on existing initiatives in the region in order to promote the development of a regional maize-to-livestock feed value chain in IOI.

In order to ensure that this is done in an inclusive and transparent way, it is important that key relevant stakeholders are involved in the process, including: livestock feed producers in IOI (LFL, Meaders, Urcoopa, Agrifarm-Agrival, SABMA) and other potential investors; representatives of maize farmers (including smallholder farmers), collectors and wholesalers in Madagascar; relevant civil society organisations (e.g. FIV.MPA.MA), government bodies, public agencies (e.g. EDBM) and regional organisations (e.g. COMESA and IOC); technical and development partners (e.g. CIRAD, FAO, EU); and financial institutions (e.g. World Bank). One way to achieve this would be to establish, in line with COMESA's RIPA-II, a regional public-private dialogue platform involving these stakeholders. This platform could then be used to stimulate a frank discussion on the specific policy reforms and investments required to overcome the most significant obstacles to the development of a maize-to-livestock feed value chain in IOI, and the appropriate role of the public sector, private sector and development partners in supporting these interventions. The advantage of such an approach is that continued dialogue can help to build trust between those stakeholders who are best placed to identify and implement the key interventions needed to promote a viable regional value chain.

While it would be up to the stakeholders in such a platform to identify and prioritise these interventions, and to agree on the most appropriate actor(s) to undertake them, possible areas for intervention suggested by this study include:

- 1) addressing productivity constraints (e.g. through efforts to provide maize farmers in Madagascar with better training and access to inputs and technology, as well as through initiatives to better aggregate production);
- 2) better organising the value chain (e.g. through the organisation of small producers into cooperatives, and, perhaps at a later stage, the creation of an inter-professional organisation which brings together producers, traders and processors in order to address their shared concerns and issues arising between them);
- 3) improving storage, transportation and trade infrastructure in Madagascar (e.g. through investments in storage and treatment facilities and better quality roads linking producer areas to ports and consumer areas);
- 4) addressing concerns related to investment climate in Madagascar (e.g. through a more clearly articulated regime for investment in land and related rights and more effective avenues for addressing investment-related concerns); and

- 5) eradicating any remaining barriers to intra-regional trade in IOI (e.g. through simplifying procedures for exportation from Madagascar).

As a first step towards the establishment of a regional public-private dialogue platform (potentially within the framework of COMESA's RIPA-II), a workshop involving all key stakeholders (including ones not identified in this note) could be organised for these stakeholders to discuss the possibility of establishing such a platform. If amenable to such an idea, the stakeholders could also initiate more in-depth discussion on the intervention areas highlighted above with a view to identifying and prioritising the initial key focus areas of the platform and who should take the lead on these interventions. Finally, the stakeholders could also discuss what sort of operating modalities and governance structure would be most appropriate and effective for such a platform.

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