

## **F SUSTAINABLE, INTEGRATED AGRICULTURE**

### **F.1 Overarching goal**

The overarching goal of the SIPDR for the agricultural sector is to strengthen and modernise the agricultural and agri-business sectors. Although agriculture should henceforth be viewed as a business (given sustainability preoccupations) and, consequently, include agri-business, the two aspects have been specified in the overarching goal in order to emphasise that the purpose of strengthening and modernising agriculture in Rodrigues is to ensure that it indeed becomes a business sector. Specifically, the process of strengthening and modernising agriculture include:

- Arresting the decline in production;
- Developing exports;
- Developing agro-industries;
- Fostering forward and backward linkages throughout the commodity value chains; and
- Preserving the natural resource base.

The various aspects of the overarching goal have been transcribed into a set of four strategies and eight goals.

#### **F.1.1 Strategies (see main SIDPR document)**

- Reverse the current system of agriculture from unsustainable to sustainable through Empowerment, Sustaining soil fertility, and Sustainable use of water;
- Integrated development by fostering forward and backward linkages and sharing of the natural resource base;
- Transform the agricultural sector into an Agri-business one which is commercial and export-oriented:
  - This is done by establishing a commercial system, professionalising the sector, and integrating primary production with other elements of the commodity supply chain; and
- Modernise the sector to enhance its competitiveness:
  - This is done by Integrating production with consumer and market requirements and leveraging latest advances in technology and agricultural sciences.

## F.1.2 Goals

### F.1.2.1 Goal 1: Increase the production of selected commodities to maintain or achieve self-sufficiency

#### Vegetables

The selected commodities consist of vegetables, fruits and a few other crops.

- The first important group of traditional vegetables consumed by the population is the **cucurbits**: cucumber, squash (giraumon), bottle gourd (calebasse), bitter gourd (margose) and sponge gourd (pipengaille). Other cucurbits in demand by the tourist industry are melon and baby button squash (patisson and courgette);
- The second important group of vegetables is the **crucifers**: heading cabbage, cauliflower, Chinese cabbages and radish. To these can be added broccoli and red cabbage for the tourist industry;
- The third important group are the **solanaceous crops**: tomato (pomme d'amour and tomate), potato, aubergine (bringelle and anghive), which can be extended to include cherry tomato and baby potato;
- Other popular vegetables are green beans and peas, heading lettuce, carrot, garden beet, okra (lalo). To these can be added the specialty types: curled lettuce and baby carrots, and a new crop, palm heart.

#### Fruits

The important and popular fruits are banana, pineapple, citrus (orange, mandarine and lime) and mango. The exotics which should be envisaged are litchi, papaya, carambola, annonas (ate and atemoya), jujube and breadfruit (for chips).

#### Other crops

Other crops, whose cultivation form part of the agricultural tradition of Rodrigues are onion, dry bean, maize, sweet potato and manioc. The latter three are also important as animal feeds. Their place in the future is not clear. Some see them as important for poverty alleviation; others suggest that they should make way for crops with higher-value. For the moment there is ample land for them to co-exist with the others which should be developed.

#### Livestock

The main traditional livestock of Rodrigues are pork, poultry, beef, sheep and goat. The extensive production of the latter three is unanimously accepted as the cause of the widespread degradation of land, essentially because of overstocking. Since their production is neither sustainable nor competitive on export markets, stakeholders agree that communal pastures should only be grazed to their carrying capacity. This implies production, first for the domestic market and, if there is any excess, for export.

In all meetings and workshops held in Rodrigues, the participants have drawn attention to the unsustainability of the current production system and to the damage being done to the resource base by these grazing species, hence the necessity to limit the number of animals to the carrying capacity of the pastures. The goal should be to produce for self-sufficiency and to export any excess.

### Poultry

Poultry is also viewed as non-competitive. It was found during the consultative process that the price of local chicken produced the traditional way is beyond the means of much of the population. This could explain why so much poultry is imported from Mauritius. The cost of commercially-produced poultry is likely to be higher than the imported product because of the need to airfreight day-old chicks and ship feeds. Consequently, there is a need to reduce these costs and to be self-sufficient in poultry, as is being proposed. The pork sector is different and will be taken up in the next section.

## ***F.1.2.2 Goal 2: Develop the production of selected commodities with high export potential***

### Crops

- The two crops which have been proposed in several studies are Mexican lime and chilli pepper. The evidence that Rodrigues has comparative advantage has not yet been seen, at least insofar as the fresh products are concerned. Perhaps this is not essential in the sense that even if the fresh product were not to be competitive on the Mauritian or international market, yet the processed products could still fetch remunerative prices. This underlines the absolute necessity, with these products as with other exports, to establish and conform to norms, to label, brand and market professionally, hence Goals 3 and 4;
- The two other possible export crops which have been mentioned in some reports are: dry bean and onion. Neither is now, or is likely in future to become, competitive on the Mauritian market. The possibility to process or brand them being remote, it is best to grow them for self-sufficiency. On the sandy soils of the coast where it is now widespread, there are no recognised alternatives to onion. In contrast, as a winter crop in the wetter interior zone, dry bean may have to compete with several vegetables and chilli pepper.

### Animal products

The two animal products which are deemed to be exportable are pork and honey.

- As was mentioned in connection with lime and chilli pepper, the competitiveness of Rodriguan pork has not yet been demonstrated. Nevertheless, with appropriate processing into selected products, for instance, ham and sausages, and with proper branding and aggressive promotion, we believe with many stakeholders that Rodriguan pork can find a market, first in Mauritius and later, elsewhere.
- Rodriguan honey, on the other hand, is already a winner and should be developed to the limit. The fact that sugar cane is not grown in Rodrigues and that, consequently, the local

honey is not contaminated with cane sugar has not been sufficiently highlighted. The scope for increasing production lies mainly on reforestation with tree species which produce nectar in abundance at various periods during the year.

### ***F.1.2.3 Goal 3: Establish and enforce food safety norms***

This goal is about establishing (where they do not exist) and enforcing (where they already exist) food safety norms, which should be left to the Ministry of Health. As for branding, marketing and labeling, these should be taken over by the RTMC.

The Food Act already provides for food safety but most of its provisions are not enforced. It is important to vulgarise its provisions and to train operators before enforcing them, because the population deserves it, tourists demand it, and the export markets require it. This function should be left to the institutions within the Republic - The Ministry of Health in conjunction with the Ministry of Agro-industry and Fisheries – to which it has been attributed. There is no need to establish in Rodrigues any new agency or institution to take on this role. There is no need either, at least in the medium term, to construct laboratories. The new Food Technology Laboratory of the Ministry of Agro-industry and Fisheries should be in position to analyse all the necessary samples. A Memorandum of Understanding with the RRA is all that is required.

### ***F.1.2.4 Goal 4: Put into place a well-structured and efficient marketing system for exports***

No operator can hope, singly, to invest in prospecting, developing and exploiting niche markets. Besides, probably nobody in Rodrigues currently has the expertise. The development and exploitation of niche markets for the selected agricultural products should therefore be left to professionals within a well-structured institution.

The newly-incorporated Rodrigues Trade and Marketing Company (RTMC) could start operating as a parastatal (in the short term) to eventually become autonomous and be run by producer associations (see section below). In addition to prospecting and exploiting niche markets, it would promote Rodriguan products via standardisation, conformity to norms, labeling and branding. In due course, the possibility of acquiring geographic indications, which are superior forms of labeling, could be envisaged. These need not, and probably should not, be based on specificities of climate and soil, but rather on tradition e.g recipes typical and exclusive to Rodrigues. The only product which could perhaps benefit from a geographic indication based on geographical considerations, in this case, the absence of sugar cane, is honey. It is necessary here to underline that the RTMC should not take on the role of controlling and certifying food safety. This should be left to a state institution as mentioned in Goal 3 above, in order for it to avoid conflict of interests.

#### *Food safety tests*

The need for food laboratory in the short term, therefore, can be postponed due to conflict of interest. In the case of sugar in Mauritius, the Mauritius Sugar Syndicate (MSS) does not conduct food safety tests (microbiology, heavy metals etc.). It contracts these to the MSIRI so as to avoid conflict of interest. The RTMC will, like the MSS, be an exporter. It cannot expect

importers to accept its own tests. It is recommended that it contract the work out to the National Food Laboratory.

#### ***F.1.2.5 Goal 5: Strengthen the agri-business sector***

All recent analysis concur that the development of agriculture in Rodrigues depends critically on the emergence of a strong agri-business sector. SME's in the field of agro-industries can contribute much to the economic development of Rodrigues through more income generation and employment. It is emphasised in this report that the export sector can only succeed after value-addition of selected products through processing in Goal 2, through food safety norms in Goal 3 and appropriate labeling, branding and marketing in Goal 4. An additional objective of the modernisation of agriculture in Rodrigues should be to strengthen the agri-business sector. This entails more specifically to train existing agro-processors, to support the emergence of others through the provision of credit and to link them to producers and marketing agencies. Use should be made of institutions and programmes designed to promote entrepreneurships, such as Enterprise Mauritius and the Empowerment Fund.

#### ***F.1.2.6 Goal 6: Reform of the Agricultural Services***

A reform of the Agricultural Services is essential to achieve the overarching goal of strengthening and modernising the agricultural sector. None of the above-mentioned five goals is achievable without a well-structured, adequately-manned, and efficient service sector.

This reform entails a shift in working methods from traditional research and extension to a more proactive, demand-led and participatory approach which emphasises devolvement, capacity-building and training of operators to take control of their own future. The role of the Agricultural Services should be dual; on the one hand, to support the modernisation of agriculture by providing essential services such as clean seeds, planting material, breeding stock and technical advice; and, on the other hand, to spearhead the transformation of the sector by training and supporting emerging entrepreneurs in the agro-industrial sector.

It is proposed, in the section on the New Agricultural Set-Up below, to establish a High-Powered Committee on Agri-Business which will have executive powers. It is feared that failing to strengthen the institutional set-up in this way could lead to mixed results and even to the ineffectiveness of the framework. The High-Powered Committee on Agri-Business will be chaired by the Commissioner for Agriculture & Ors and will comprise the Director of the EPMU, and all stakeholders, including the private sector and institutions from Mauritius. A key mandate of the High-Powered Committee is to report on progress to the Commissioner for Agriculture so that bottlenecks could be eliminated within short delays.

#### ***F.1.2.7 Goal 7: Train operators and build capacity along the commodity supply chain***

There is an urgent need for training of operators all along the commodity supply chain. Firstly, in the Agricultural Services, where expertise in several key areas are currently totally missing (such as in marketing and business entrepreneurship), and where other areas need reinforcement (for instance, in plant protection and animal nutrition).

Secondly, in the primary production sector, where most crop and animal producers lack basic training in sustainable production methods and have low levels of technical know-how. Thirdly, in the agro-industrial sector where, in addition to technical know-how, there is also a need to master marketing and management.

#### ***F.1.2.8 Goal 8: Sustain the natural resource base***

The problems of soil erosion and overgrazing leading to land degradation will perdure unless all operators are first sensitised and then trained in the sustainable management of the resource base: land, water, forest, pastures and lagoon. Also badly required is agreement on the implementation of regulations protecting these resources. In addition to reinforcing the protection services and reviewing their working methods, there is a need to devolve the management of certain resources, perhaps at the watershed level, to communities living within the valleys.

This was one of the solutions proposed during the consultative process, and especially in the TWG meeting on the productive sector. Prior to proposing specific projects, modalities or inputs at this stage, it is recommended that the local communities be consulted first to determine whether they agree with the proposal and whether they feel confident about taking up the challenge (and if so, under what conditions). At a later stage, prior to implementation of the initiative, the local authorities who are currently responsible for the management of these natural resources (if they also agree with the recommendation), could work out the details, perhaps first on a pilot basis.

The recurrent problem of scarcity of water for agriculture deserves special attention. The Agricultural Services should team up with farmer organisations to make more water available, and to manage the available water optimally.

*Logical framework for the agricultural sector*

*Goal 1: Increase the production of selected commodities to maintain or achieve self-sufficiency*

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
<p><b>Overarching goal:</b></p> <p><i>Strengthen and modernise the agricultural and agri-business sectors so as to arrest the decline in agricultural production, to develop the export sector, to stimulate the development of agri-businesses, to foster forward and backward linkages throughout the commodity value chain and to preserve the natural resource base.</i></p>			
<p><b>Goal 1: Increase the production of selected commodities to maintain or achieve self-sufficiency</b></p>	<p>1.1 Self-sufficiency is maintained in most common vegetables: cucurbits, crucifers, solanaceous crops, onion, garlic, ginger</p> <p>1.2 Self-sufficiency is maintained in most common fruits: banana, pineapple, papaya, mango</p> <p>1.3 At least 50% of requirements is produced by 2012, and self-sufficiency achieved by 2015 in selected vegetables: baby carrots, baby squash, sweet</p>	<p>1.1.1 Annual Report of Agricultural Services</p> <p>1.1.2 Import statistics of Ministry of Trade and Shipping</p> <p>As above, 1.1.1 &amp; 1.1.2</p> <p>As above, 1.1.1 &amp; 1.1.2</p>	<p>Except in the event of cyclones</p>

	pepper, potato 1.4 At least 25% of requirements is produced by 2015 and 50% by 2018 in selected fruits: litchi, pitaya, orange, mandarine, breadfruit	As above, 1.1.1 & 1.1.2	
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Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
	1.5 Self-sufficiency is maintained in poultry, egg, beef, goat and mutton***  1.6 Production of milk is increased by 20% by 2010 and 40% by 2015	1.5.1 Annual Report Agricultural Services  1.5.2 Import Statistics of Ministry of Trade & Shipping  As at 1.5.1 & 1.5.2 above	
Objective 1: Ensure a steady supply of seeds of common vegetables	1.1 Vegetable seed requirements obtainable from Barkly Experiment Station and private importers are totally covered annually	1.1.1 Annual lists of imports from Barkly ES	<ul style="list-style-type: none"> <li>• Barkly Experiment Station and private importers don't run out of stocks</li> <li>• Cold store of Agricultural Services is operational</li> </ul>

	<p>1.2 Adequate seed buffer stocks are maintained and renewed annually</p> <p>1.3 Seed production is planned and ensured in case of local varieties not available</p>	<p>1.3.1 Seed production statistics of Agricultural Services</p>	<ul style="list-style-type: none"> <li>Funds are available for buffer stocks</li> </ul>
<p><i>*** In view of the unsustainable nature of the production of ruminants on pastures, it is suggested that the goal in these cases be limited to maintaining self-sufficiency, in line with the various suggestions over the past decades, to destock the pastures (and with the meaning S in SIDPR).</i></p>			

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
Objective 2: Ensure a steady supply of planting materials of selected fruits	<p>2.1 Planting materials of common fruits are available at all times</p> <p>2.2 Planting materials of new fruits are made available on request within 6 months</p>	<p>2.1.1 Production and sale statistics of Agricultural Services</p> <p>2.1.2 Waiting lists at Agricultural Services</p> <p>As above, 2.1.1 &amp; 2.1.2</p>	

<p>Objective 3: Prepare and distribute recommendation sheets on cultural practices for all vegetables</p>	<p>3.1 Recommendation sheets have been prepared on all common vegetables by end 2008 and on new ones by 2010</p> <p>3.2 Recommendation sheets have been prepared on all common fruits by end 2008 and new ones by 2010</p>	<p>3.1.1 Inventory of documentation at Agricultural Services Library</p> <p>As above, 3.1.1</p>	
<p>Objective 4. Organise regular visits of extension officers to registered growers</p>	<p>4.1 All registered vegetable growers are visited at least every fortnight</p> <p>4.2 All registered fruit growers are visited at least every month</p>	<p>4.1.1 Monthly progress reports of Extension Officers</p> <p>As above</p>	<ul style="list-style-type: none"> <li>• Agricultural Services has been reformed as per Goal 7</li> <li>• Sufficient officers have been recruited and remain in service</li> </ul>
<p>Objective 5: Extend support to growers who need them for mechanical land preparation, spraying and specialised operations (e.g crop drying and shelling)</p>	<p>5.1 All requests for mechanical land preparation of flat land are entertained not later than 15 days after the start of the planting season</p>	<p>5.1.1 Monthly progress reports of officer responsible for mechanisation service</p>	<p>As above, 4.1.1</p>
<p>Activities (under Objective 5)</p>	<ul style="list-style-type: none"> <li>• The AS to undertake a survey of needs</li> <li>• Purchase of sufficient equipment</li> <li>• Training of drivers</li> </ul>		

	<ul style="list-style-type: none"> <li>• Ensure proper planning and scheduling</li> <li>• Ultimately, the AS must enlist the support of private enterprises</li> </ul>		
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Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
	<p>5.2 All requests for spraying are attended to within one week of schedule</p> <p>5.3 At least two regional maize shellers (to reduce the drudgery) and two bean threshers (essential if bean production is to increase) are commissioned</p>	<p>5.2.1 Monthly progress report of Officer in charge of spraying</p> <p>5.3.1 Annual report of Agricultural Services</p> <p>5.3.2 List of new acquisitions</p>	<ul style="list-style-type: none"> <li>• Sufficient tractors and implements have been purchased and are maintained in working order.</li> </ul> <p>As above, 4.1.1</p> <ul style="list-style-type: none"> <li>• Sufficient sprayers have been purchased and maintained in working order</li> <li>• Sufficient funds have been made available for these equipment.</li> </ul>
Objective 6: Ensure a regular and adequate supply of animals for production	6.1 The air freighting of day-old chicks have been	<p>6.1.1 Monthly progress reports of officer responsible</p> <p>6.1.2 Statistics of</p>	

	<p>organised on request to supplement private sector initiative, if necessary</p> <p>6.2 Sufficient piglets have been produced to supply the totality of demand for fattening on request</p>	<p>importation from Veterinary Services</p> <p>6.2.1 Monthly progress report of Officer responsible</p> <p>6.2.2 Waiting list of Agricultural Services</p>	
Objective 7: Ensure a regular and adequate supply of animal feeds	7.1 Sufficient feeds have been imported to avoid disruption of supply at all times	<p>7.1.1 Monthly progress reports of relevant service</p> <p>7.1.2 Import statistics of Ministry of Trade and Shipping</p>	<ul style="list-style-type: none"> <li>• Adequate supplies are available from Mauritius</li> </ul>

<b>Narrative summary</b>	<b>Indicators of achievement</b>	<b>Means of verification</b>	<b>Risks &amp; assumptions</b>
	7.2 Buffer stocks have been maintained		<ul style="list-style-type: none"> <li>• Sufficient operating funds are available to constitute buffer stocks</li> </ul>
Objective 8: Provide all essential veterinary services to livestock producers	<p>8.1 At least two state veterinarians are posted in Rodrigues</p> <p>8.2 An adequate stocks of veterinary medicine and semen</p>	<p>8.1.1 Annual report of Agricultural Services</p> <p>8.2.1 Monthly stocklist of veterinary supplies at</p>	

	<p>for A.I are maintained at all times</p> <p>8.3 All requests for A.I Services are attended to promptly</p>	<p>Veterinary Services</p> <p>8.3.1 Monthly progress report of veterinarian or stockman for A.I Services</p>	
<p>Objective 9: Construct and operate an abattoir conforming to acceptable norms</p>	<p>9.1 A multipurpose central abattoir has been constructed according to EU norms (costs to be estimated once all stakeholders would have agreed on the quantum of production, for domestic and export purposes)</p> <p>9.2 No more than 5% of cattle, sheep, goat and pigs are slaughtered outside the abattoir</p>	<p>9.1.1 RRA's records</p> <p>9.1.2 Annual reports of Central Abattoir</p> <p>9.2.1 Police records</p>	<ul style="list-style-type: none"> <li>Funds have been made available for the Central Abattoir</li> </ul>

*Goal 2: Develop the production of selected commodities with high export potential*

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
<p><b>Goal 2: Develop the production of selected commodities with high export potential</b></p>	<p>2.1 Production of selected commodities is increased</p> <p>- lime by 25% in 2010, 100% in 2013 and 200% in 2015</p>	<p>2.1.1 Statistics of agricultural exports</p>	<ul style="list-style-type: none"> <li>Agricultural Services has been reformed</li> <li>Other goals of SIDPR are in place</li> </ul>

	<ul style="list-style-type: none"> <li>- chilli pepper by 25% in 2009, 100% in 2011 and 200% in 2013</li> <li>- dry bean by 50% in 2009, 100% by 2011 and 100% in 2013</li> <li>- honey by 50% in 2009, 100% in 2011 and 200% in 2013</li> <li>- pork products by 25% in 2009, 50% in 2011 and 100% in 2013</li> </ul>	<p>Same as above</p> <p>Same as above</p> <p>Same as above</p> <p>Same as above</p> <p>Same as above</p>	<ul style="list-style-type: none"> <li>• Same as above</li> <li>• Same as above</li> <li>• Same as above</li> <li>• Same as above</li> </ul>
Objective 1. Identify all agricultural commodities with high export potential	<p>1.1 Comparative advantage of Rodrigues has been worked out by 2008 for lime, chilli pepper, dry bean, honey and pork, ideally by the specialists of the FAO in commodity chain analysis**</p> <p>1.2 Specific products have been identified by 2008 through Commodity Chain Analysis</p>	<p>1.1.1 Consultancy study report on comparative advantage of each undertaken under an FAO's TCP project</p> <p>1.1.2 Commodity Chain Analysis report on each</p> <p>1.2.1 As at 1.1.1 and 1.1.2 above</p>	<ul style="list-style-type: none"> <li>• Consultancy is funded</li> <li>• As above</li> </ul>

	1.3 Export markets and approximate demands have been identified by 2008	1.3.1 As at 1.1.1 ad 1.1.2 above	
<p><i>** It is important to recognise that such matters cannot be undertaken in the framework of a strategic document whose scope, purpose and objectives are different from a topical consultancy report.</i></p>			

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
Objective 2. Identify commercial producers of each selected commodities	2.1 All interested producers have been registered by 2008 2.2 Suitable land has been allocated to each by 2008 2.3 Credit for production has been provided	2.1.1 Register of crop producers at Agricultural Services  2.2.1 As at 2.1.1 above	<ul style="list-style-type: none"> <li>• Funds for start-ups made available</li> </ul>
Objective 3. Organise production of each selected commodity	3.1 Production plots have been established by 2009 3.2 Producer groups (existing or new, if any) have been organised along the proposed commodity chains (ideally one group per commodity as recommended by various	3.1.1 Monthly progress reports of Extension Officers  3.2.1 As above  3.3.1 As above	

	stakeholders and reports) 3.3 Extension Service follows and trains producer groups		
Objective 4: Organise processing of each selected commodity	4.1 Processors have been registered and permits allocated  4.2 Processor have received training	4.1.1 Register of businesses at Central Administration  4.1.2 Monthly progress reports of Agricultural Services	<ul style="list-style-type: none"> <li>Funds for start-up made available</li> </ul>
Objective 5. Organise marketing and export of each selected commodity	5.1 Marketing/ Export agencies have been registered and permits allocated  5.2 Operators have been trained	5.1.1 As at 4.1.1 above  5.2.1 Monthly progress reports of Agricultural Services	<ul style="list-style-type: none"> <li>As above</li> </ul>

*Goal 3: Establish and enforce food safety norms*

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
<b>Goal 3. Establish and enforce food safety norms</b>	3.1 Norms have been prepared for all major processed foods on the market by 2010  3.2 All agro-processors have been	3.1.1 Published norms in official regulations	

	<p>sensitised to these norms by 2011</p> <p>3.3 Sufficient sanitary inspectors have been recruited and trained</p> <p>3.4 Regular control and analysis is effected on the market</p>	<p>3.2.1 Lists of trained operators at Agricultural Services</p> <p>3.3.1 Establishment of Sanitary Division of Ministry of Health</p> <p>3.4.1 Monthly reports of sanitary Division of Ministry of Health</p>	<p>The Food Technology Laboratory of Ministry of Agro Industry &amp; Fisheries agrees to conduct the analysis</p>
Objective 1. Prepare food safety norms for all major processed foods	<p>1.1 Food safety norms exist as from 2010 for: pickled lime, other lime products, pickled chilli pepper, other chilli pepper product, honey and pork products</p> <p>1.2. Labelling requirements have been prepared for all of above by 2010</p>	<p>1.1.1 Official regulations in Gazette</p> <p>1.2.1 As at 1.1.1 above</p>	
Objective 2. Sensitise processors to norms	<p>2.1 All processors have followed a one-day training course prior to permit allocation or re-allocation by 2011</p>	<p>2.1.1 List of trained processor at Sanitary Division</p>	

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
Objective 3. Inspect processed foods on the market regularly	3.1 Sufficient sanitary officers have been trained in norms 3.2 Agreed routine sampling frame is followed 3.2 Regular analysis is done by Food Technology Laboratory (FTL) in Mauritius	3.1.1 List of trained officers at Sanitary Division 3.2.1 Monthly progress reports of Sanitary Division 3.3.1 Annual compiled analysis reports at FTL	MoU signed by RRA and FTL

*Goal 4: Put into place a well-structured and efficient marketing system for exports*

<b>Goal 4: Put in place a well-structured and efficient marketing agency for export</b>	4.1 The <i>modus operandi</i> of the Rodrigues Trade and Marketing Company has been established by October 2008 4.2 Its staff has been recruited and trained by end 2008 4.3 Its budget for 2008-2009 has been approved	4.1.1 RRA establishment list 4.2.1 Staff list of RTMC 4.2.2 List of trained personnel 4.3.1 Line item in RRA budget for Commission for Agriculture	
Objective 1. Establish the	1.1 As at 4.1, 4.2 and 4.3 above	1.1.1 As at 4.1.1, 4.2.1,	

Rodrigues Trade and Marketing Agency		4.2.2 and 4.3.1 above	
Objective 2. Prepare the RTMC's work programme	<p>2.1 Discussions on work programme with stakeholders completed at end 2008</p> <p>2.2 Provisional list of export commodities prepared by end 2008</p>	<p>2.1.1 Annual Reports of RTMC</p> <p>2.2.1 Provisional list with RTMC</p>	

<b>Narrative summary</b>	<b>Indicators of achievement</b>	<b>Means of verification</b>	<b>Risks &amp; assumptions</b>
Objective 3. Conduct commodity chain analyses on each potential export commodity	<p>3.1 Consultants selected by end 2008</p> <p>3.2 Consultants work completed by mid-2008</p>	3.2.1 Consultants Report	<ul style="list-style-type: none"> <li>Adequate funds are earmarked</li> </ul>
Objective 4. Study potential markets for each commodity and establish requirements	4.1 Market study and requirements completed by end 2009	4.1.1 RTMC's market study report	
Objective 5. Create Rodrigues labels for each exportable products	5.1 Rodrigues labels have been created for each product by end 2009	5.1.1 Special RTMC document	
Objective 6. Organise the	6.1 A specified number of	6.1.1 Annual Reports of	Funds are earmarked

promotion of the selected exports	promotion campaigns are organised every year as from 2009	RTMC	
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*Goal 5: Strengthen the agri-business sector*

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
<b>Goal 5: Strengthen the agribusiness sector</b>	5.1 At least 5 agri-businesses are set for each exportable product by 2009, increasing by 15% each year thereafter  5.2 Effective linkages have been established between the Agricultural Services and specified institutions as from 2009, e.g Empowerment Fund, Enterprise Mauritius, RTMC	5.1.1 Annual Reports of Agricultural Services  5.2.1 MoU's signed by RRA and each individual institutions	Funds are earmarked for start-ups
	5.3 All willing agribusinesses are enrolled in appropriate clusters by	5.3.1 Annual Report of Agricultural Services  5.3.2 Annual Report of	

	commodity by 2009	RTMC	
Objective 1. Set up a one-stop desk to register agri-businesses	<p>1.1 Agri-business facilitation desk set up at Agricultural Services by end 2008</p> <p>1.2 All necessary papers/permit forms/documentation available on request</p>	<p>1.1.1 New organigramme of Agricultural Services</p> <p>1.1.2 Register of businesses at RRA and Registrar's Office</p>	

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
Objective 2. Sign MOUs with all appropriate agencies/ institutions in the sector	2.1 MOU's signed with Enterprise Mauritius, Empowerment Fund, RTMC ... by 2008.	2.1.1 MOU's at Commission for Agriculture	
Objective 3. Create clusters for each exportable product	<p>3.1 All willing agribusiness enrolled in appropriate clusters by 2008</p> <p>3.2 Role and responsibility of operators in each cluster</p>	<p>3.1.1 Composition of clusters per commodity at nexus points (Agricultural Services?)</p> <p>3.2.1 <i>Modus operandi</i> of clusters available at nexus</p>	

	defined	points	
Objective 4. Train operators in each cluster	<p>4.1 The curriculum of the following core subjects have been prepared: legal management of clusters, contracts and agreements, business management, health and safety, food safety, product norms and labeling, marketing</p> <p>4.2 A minimum of 50% operators in each cluster has been trained by end 2009 and all registered operators have been trained by end 2010.</p>	4.1.1 Curriculum of courses approved by MQA	<ul style="list-style-type: none"> <li>• Sufficient trainers can be recruited</li> </ul>

*Goal 6: Reform of the Agricultural Services*

<b>Narrative summary</b>	<b>Indicators of achievement</b>	<b>Means of verification</b>	<b>Risks &amp; assumptions</b>
<b>Goal 6. Reform the Agricultural Services (AS)</b>	6.1 A new organigramme has been prepared for the AS by end 2007	6.1.1 Annual Report of AS	<ul style="list-style-type: none"> <li>• Personnel with adequate</li> </ul>

	<p>6.2 Personnel has been redeployed and if necessary, additional ones recruited by end 2008</p> <p>6.3 Complementary changes have been brought to the Commission for Agriculture by mid-2009</p>		competence can be recruited
Objective 1. Reorganise the Agricultural Services	<p>1.1 A consultancy has been commissioned to prepare a reorganisation plan by end 2008</p> <p>1.2 RRA implements the reorganisation plan of AS as from beginning of 2009</p>	1.1.1 Consultancy Report at RRA	<ul style="list-style-type: none"> <li>Staff resistance to change is overcome through dialogue</li> </ul>
Objective 2. Prepare new work plan for Agricultural Services	<p>2.1 New work plan agreed by mid 2009, complete with mission, vision and logframe with indicators of performance</p> <p>2.2 New working methods are implemented</p>	<p>2.1.1 Corporate plan of AS</p> <p>2.1.2 Logframe of AS</p>	

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
Objective 3. Implement a staff performance appraisal system	3.1 A staff performance appraisal system in place by mid 2009  3.2 All supervisory personnel trained in appraisal system by end 2009  3.3 A personal staff development and reward system is implemented as from mid 2009	3.2.1 Appraisal manual  3.3.1 Staff development and reward system available at AS	<ul style="list-style-type: none"> <li>Appraisal system is reviewed after 2 years</li> <li>RRA agrees to implement reward system</li> </ul>
Objective 4. Review the role of the Commission to align it with that of the ‘Agricultural Services’	4.1 The roles of the Commission for Agriculture and of the Agricultural Services have been re-aligned by mid-2009		<ul style="list-style-type: none"> <li>RRA agrees to re-alignment</li> </ul>

*Goal 7: Train operators and build capacity along the commodity supply chain*

<b>Goal 7. Train operators</b>	7.1 Training needs of	7.1.1 Training needs in	
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<b>along the commodity supply chains</b>	operators in each cluster have been established by mid 2009	consultancy report as at 1.1.1 (Goal 6)	
	7.2 A comprehensive training programme has been prepared by mid 2009 for each cluster and implemented as from end 2009	7.2.1 Training programme at Commission for Agriculture	<ul style="list-style-type: none"> <li>Funds have been earmarked</li> </ul>

*Goal 8: Sustain the natural resource base*

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
<b>Goal 8. Sustain the natural resource base</b>	8.1 General level of soil erosion has been reduced to 50% of sustainable level by 2010 and 80% by 2015  8.2 Availability of water for irrigation and livestock increased by 25% by 2010 and 50% by 2015  <i>[More generally, this should be read in conjunction with the set of</i>	8.1.1 State of the Environment reports (Ministry of Environment)  8.1.2 Annual Report of Agricultural Services  8.2.1 Annual Report of Agricultural Services	<ul style="list-style-type: none"> <li>RRA agrees to enforcement of regulations</li> <li>Adequate funds are earmarked specifically for water capture and storage for agriculture</li> </ul>

	<i>7 objectives and their indicators below]</i>		
Objective 1. Review cattle walk regulations	<p>1.1 New cattle walk regulations in place by end 2008</p> <p>1.2 Agricultural Services empowered to implement cattle walk</p>	<p>1.1.1 New regulations in gazette</p> <p>1.2.1 New organigramme of Agricultural Services</p> <p>1.2.2 Monthly progress reports of Land Division of Agricultural Services</p> <p>1.2.3 Statistics of appropriate court of justice</p>	<ul style="list-style-type: none"> <li>• RRA agrees to promulgate new regulations</li> </ul>

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
Objective 2. Review land use regulations	<p>2.1 Land use plan prepared and disseminated by 2008</p> <p>2.2 All new land leases subject to new regulations</p> <p>2.3 Agricultural Services empowered to implement all lease regulations</p>	<p>2.1.1 New land use plan at Cadastral Office at RRA</p> <p>2.2.1 New land use regulations in gazette</p> <p>2.3.1 Monthly progress reports of Land Use Division of Agricultural Services</p> <p>2.3.2 Statistics of</p>	<ul style="list-style-type: none"> <li>• RRA agrees to promulgate new regulations</li> </ul>

		appropriate court of justice	
Objective 3** - Pursue with search for more water for agriculture	<p>3.1 A master plan of water resources for Rodrigues is commissioned by mid 2008</p> <p>3.2 Agricultural Services conduct an audit of water resources available for agriculture</p> <p>3.3 Water users associations created for each regional water source</p>	<p>3.1.1 Master plan report</p> <p>3.2.1 Audit report of Agricultural Services</p> <p>3.3.1 Lists of water users associations and their elected members at registrar's office</p>	<ul style="list-style-type: none"> <li>• Funds are earmarked for this study</li> <li>• RRA agrees on a water share for agriculture (perhaps on a regional basis)</li> </ul>

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
Objective 4** - Rehabilitate existing and contract additional water capture and storage structures	<p>4.1 Half of all existing water capture and storage structures rehabilitated by 2009 and the totality by 2011</p> <p>4.2 New structures are constructed in 50% of potential sites by end 2010 and 75% by</p>	<p>4.1.1 Annual report of Irrigation Division of Agricultural Services</p> <p>4.2.1 As at 4.1.1 above</p>	<ul style="list-style-type: none"> <li>• Sufficient funds are earmarked</li> <li>• As above</li> </ul>

	2013		
Objective 5** - Improve water use efficiency	<p>5.1 Half of all existing irrigation methods converted to drip/mini/micro sprinkler systems by 2009 and 100% by 2011</p> <p>5.2 The totality of water for irrigation and livestock distribution systems has been checked for leaks and losses checked by 2009 and repaired by 2010</p>	<p>5.1.1 Annual Report of Agricultural Services</p> <p>5.2.1 Annual Report of Irrigation Unit of Agricultural Services</p>	
Objective 6 - Implement <i>in situ</i> water capture systems for selected crops	6.1 The feasibility of <i>in situ</i> (micro-catchments) is demonstrated on tree crops (e.g lime) by 2010 and generalised by 2012	6.1.1 Annual Report of Agricultural Services	

Narrative summary	Indicators of achievement	Means of verification	Risks & assumptions
	6.2 The principle of micro-		

	<p>catchment of water is extended to other crops</p> <p>6.3 At least 50% of crop producers are trained in new water capture methods by 2010 and all interested growers by 2013</p>	<p>6.3.1 List of trained producers at Agricultural Services</p>	
<p>Objective 7. Reduce losses in the water distribution system</p>	<p>7.1 The domestic water supply and the agricultural water supply system have been totally separated by 2010</p> <p>7.2 Tapping of the domestic water supply for irrigation purposes has been reduced by 50% by 2010 and 100% by 2013</p> <p>7.3 Encourage the collection of rainwater for households for individual vegetable gardens</p>	<p>7.2.1 Annual Report of Water Resource Division</p>	<ul style="list-style-type: none"> <li>• RRA agrees to implement sanctions for contraveners</li>   <li>• RRA to only approve construction plans embodying water collection structures</li> </ul>
<p><i>** These are also given in the Annexures on the outcome of the workshop on sustainable use of natural resources (from which these have been lifted)</i></p>			



*Rodrigues Regional Assembly  
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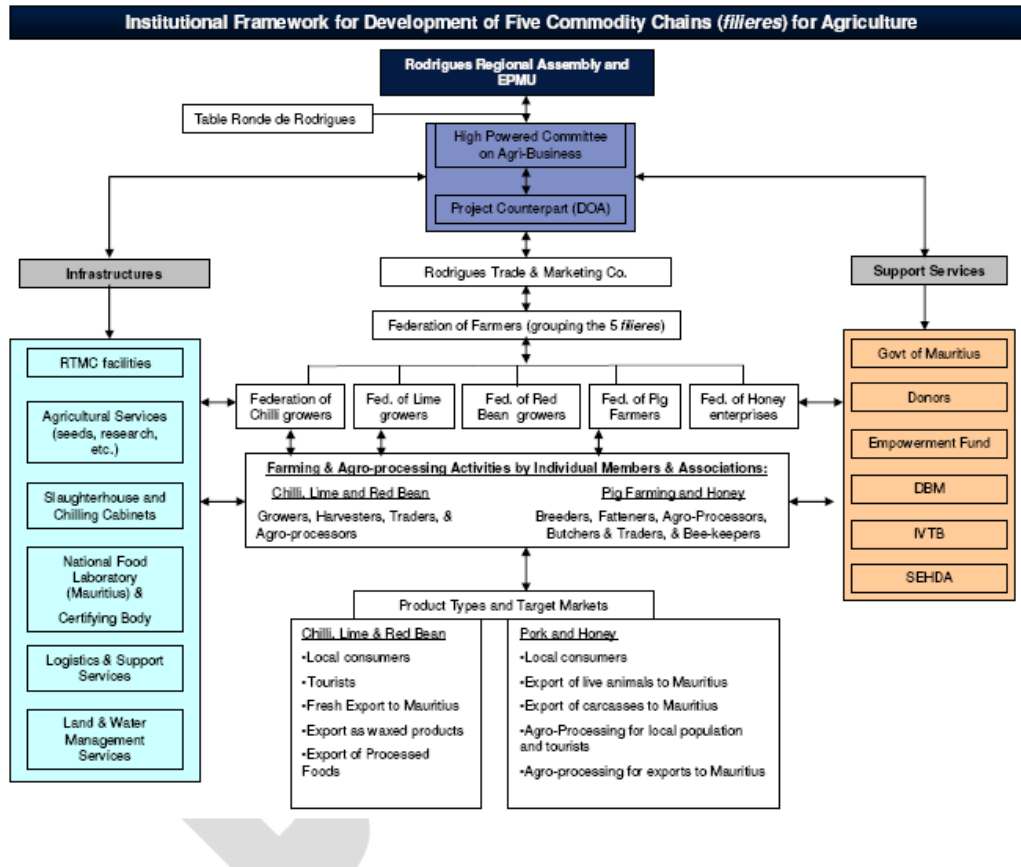
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## **F.2 The New Agricultural Set-up**

The exhibit below depicts the new set-up which is expected to become fully operational within one year. The agricultural sector needs well-functioning markets to drive growth, employment and economic prosperity. The new framework, which is expected to provide dynamism and efficiency into the marketing system, can only be successful if, as a strict minimum, the following ingredients are assembled together:

- 1 Setting-up of a High-Powered Committee with executive powers to be chaired by the Commissioner for Agriculture and comprising key stakeholders, including the Director of EPMU (as described above);
- 2 Operationalisation of the RTMC with a mandate and powers as described below. In essence, the RTMC will seek to: prevent market failures (maintaining price stability and predictability) by regulating the market but also performing marketing functions; increasing returns to farmers by eliminating merchants and middlemen. However, the RTMC will operate more as an “Agricultural Board” than as a private company in that it will comprise several members including farmers’ organisations and cooperative societies. The RTMC will operate essentially in the interests of farmers;
- 3 Creation of a distinct *filière* for each of the five selected agricultural products selected to become flourishing sub-sectors on their own;
- 4 Grouping of farmers in *filières*. These can take several forms such as cooperative societies, farmers’ organisations, small and medium enterprises, or even groups of individual households;
- 5 Award of quality certifications in terms of a “Rodrigues Label”, hence the need to have proper testing laboratories and a certifying body, as elaborated below;
- 6 Financial support to farmers. This could be provided by the existing, traditional channel (DBM) but also by encouraging the creation of credit societies among farmers themselves;
- 7 Infrastructural developments (see below);
- 8 An efficient logistic system with appropriate vehicles and communication channels;
- 9 Involvement of educational institutions in capacity building. This starts at the school level (see also Chapter 21 on “Education for a Sustainable Future” in the main SIDPR document);
- 10 Efficient communication links with all other related sectors. This could be enhanced by choosing the right persons to sit on the various institutions proposed (High-Powered Committee, Table Ronde de Rodrigues, Thematic Working Groups and so forth).

*A New Framework for Selected Products of the Agricultural Sector*



**F.2.1 Operationalising the RTMC**

**F.2.1.1 Role and functions**

- The RTMC will be involved in all aspects of marketing, which implies it will facilitate all activities involved in the flow of product from the first point of production to final consumption. It will thus be involved not only in advising the RRA on policy but also in the whole range of buying, grading, processing, selling, transportation, standardisation, facilitating finance, risk bearing, market intelligence and information;
- It will also maintain a reference or benchmark price for selected products in order to ensure ready availability of the products concerned on the market throughout the year. In the short term, only four products are proposed, namely, two agricultural crops (Chilli and Lime), and two animal products (Honey and Pork);

- Its overriding operating principle will be based on maximising efficiency across supply chains with rationalised trade practices and procedures. By so doing, it will minimise farmers’ costs and maximise profitability. One key way of doing so is to promote the adoption of latest and best technology and to build capacity at all levels.
- Operations will include eliminating bottlenecks and creating marketing infrastructures such as cold storage rooms, storage godowns, auction platforms, track roads (where required). The RTMA will also liaise with other authorities (such as the Agricultural Services department, Public Infrastructure, and private organisations) to provide other supporting services and facilities (such as arranging for fencing and irrigation facilities). It will also introduce standard marketing practices, ensure correct sorting and grading, better prices and timely payment.

### **F.2.2 How to kick-start the process in Rodrigues**

- 1 It all starts with the organisation of a full-day National Workshop entitled “Modernising and Strengthening the Agri-Business Sector of Rodrigues.” Stakeholders from Mauritius and regional countries should also be convened so as to see for themselves that the RRA means business insofar as supporting the sector within the broader framework of sustainable development and the ‘Rodrigues-on-Business Initiative’ (‘ROBI’) are concerned;
- 2 During the Workshop, the Plan of Action for the next five years will be announced. The Plan will be fine-tuned by the Commission for Agriculture in close collaboration with the EPMU, Civil Society and the private sector using the framework suggested in the main SIDPR document. The approach will be participatory but the starting point is non-negotiable (i.e., immediate focus on five *filières*). Thus who are not involved in one of the *filières* would be encouraged to do so (as these *filières* will be given full attention and support on a pilot basis in the immediate term.

### **F.2.3 Infrastructural requirements**

Some of the infrastructures required for the above to function efficiently and effectively are listed below. They are elaborated further in the STAP.

**Infrastructural Requirements in the Agri-Business Sector**

S.N.	Sub-sector	Required
1	Chilli Pepper	<ul style="list-style-type: none"> <li>• Reconditioning of the multipurpose cold store at Citronnelle (one room reserved for chilli, other rooms for other commodities such as seed potato, ware potato etc.)</li> <li>• Processing equipment for agro-procesors (assistance to be provided to individuals or groups to ensure finance is not an impediment in launching small enterprises)</li> </ul>

2	Mexican lime	<ul style="list-style-type: none"> <li>• One room in the above multipurpose cold store</li> <li>• One central washing, drying and waxing platform</li> <li>• (No central processing required but this should be left in private hands, as above)</li> </ul>
3	Dry red beans	<ul style="list-style-type: none"> <li>• Two mobile bean threshers mounted on tractors</li> </ul>
4	Honey	<ul style="list-style-type: none"> <li>• One central packaging plant</li> <li>• Individual apiculturists/groups to purchase their own extractors</li> </ul>
5	Pork	<ul style="list-style-type: none"> <li>• A modern slaughterhouse (for pigs and for other animal species such as beef, sheep and goats)</li> <li>• One central chill room at the level of the RTMC (to keep carcasses and processed products prior to sale to local distributors or to export)</li> <li>• Chilling cabinets to be purchased by private processors</li> </ul>
6	Marketing	<ul style="list-style-type: none"> <li>• Setting up of a network of sale points locally in Rodrigues, in Mauritius and, as and when necessary, internationally</li> <li>• A specialised section/department of the RTMC to take care of promotion, especially of exports</li> </ul>