3 HIGHLIGHTS OF THE FISHING SECTOR IN MAURITIUS

3.1 ARTISANAL FISHERIES – NATIONAL OVERVIEW

From the Annual Report 2010 - Ministry of Fisheries and Rodrigues - Fisheries Division, to date about 60% of fish harvested by the artisanal fisheries is still from the lagoon. Most artisanal fishers operate in the areas inside the fringing reef, using hook and line, basket traps and beach seines. Reef fish particularly groupers, mullet, parrotfish and goatfish are targeted.

Table 3-1 below shows the catch in and off lagoon from 2006 to 2010.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CATCH IN TONNES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LAGOON</td>
<td>OFF-LAGOON</td>
</tr>
<tr>
<td>2006</td>
<td>579</td>
<td>371</td>
</tr>
<tr>
<td>2007</td>
<td>354</td>
<td>286</td>
</tr>
<tr>
<td>2008</td>
<td>367</td>
<td>315</td>
</tr>
<tr>
<td>2009</td>
<td>496</td>
<td>324</td>
</tr>
<tr>
<td>2010</td>
<td>515</td>
<td>316</td>
</tr>
</tbody>
</table>

The total production of lagoon fisheries has decreased from 579 tonnes in 2006 to 354 tonnes in 2007 and back to 515 tonnes in 2010; still 9% less than in 2006. In the same period the off lagoon fisheries yielded around 300 tonnes per annum. The total fish landings of artisanal fishers have decreased from 2006 to 2010 by 13%. Reason for the decrease in artisanal fish landings are:

- heavy exploitation of the fish stocks in the lagoon
- pollution by agricultural runoff water containing pesticides and herbicides
- increasing global temperatures
- loss of habitat due to coral reef bleaching

Fish stocks in the lagoon and off-lagoon are exploited to their maximum sustainable yield (MSY) levels. A series of restrictions are implemented to remedy this situation, such as:

- closed season of six months for net fisheries
- ban on imports of small hooks
- licensing of fishing net imports
- crackdown on illegal fishing

With these measures the Fisheries Division of the Ministry of Fisheries is trying to help the fish stocks to recover (1).

From the Annual Report of the West Indian Ocean Fish Database on small-scale fisheries in Mauritius (2), we can see that there is need for improvement of fisheries management plans and co-management initiatives.

The report on the Value Chain Analysis of the Mauritian Artisanal Fisheries (3) notes that an impact assessment of fish gears used by the artisanal fisheries on the marine ecosystem and non-targeted fish species has to be carried out so as to improve fisheries management and conservation policies. The actual coastal fisheries management and conservation measures cannot yield the expected results because of the prevailing open-access environment, which is tantamount to the high risk of overexploitation of the fish stocks.

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1 Annual Report 2010 - Ministry of Fisheries and Rodrigues - Fisheries Division
2 A catalogue of small-scale fisheries of the Western Indian Ocean - WIOFISH DATABASE - Annual Report Sept. 2011
3 Value Chain Analysis of the artisanal fisheries – Mauritius - June 2012 - Smartfish SF/2012/8 - Commission Ocean Indien
stocks. The number of non-registered active, amateur and sport fishers active in coastal fisheries significantly exceeds the number of registered fishers.

A large number of incentives have been introduced by the Ministry of Fisheries to divert fishing efforts from the coastal fishing zones to deep-sea FAD and demersal fisheries. However, the mobility of traditional fishers is usually very slow, due their aversion to new technologies and reluctance to change and their unwillingness to invest in modern fishing equipment.

The readiness of Mauritian artisanal fishermen to exit a declining fishery was investigated by Tim Daw et al., who compared the attitude of Mauritian artisanal fishers with those in the Seychelles, Madagascar, Kenya and Tanzania. In their article they conclude that fishers in the poorer countries would more readily change to other professions, when fishing would not yield sufficient income. 60% of the Mauritian artisanal fishers would not stop fishing when catches would decline with 50% or more. According to the study this is also linked to the fact that in Mauritius fisheries consisted only for 5–10% of their primary occupation of those who were interviewed. The resistance of the Mauritian artisanal fishers to change is remarkable, as the article of Tim Daw details that the biomass of reef fish in kg/ha in Mauritius is one of the lowest in the region.

Another factor that plays an important role in the resistance to change is the fact that artisanal fishers receive considerable benefits from government. In 2009 the Ministry of Social Security, National Solidarity and Senior Citizens Welfare and Reform Institutions has paid a mean sum of Rs 26 175 in the form of various allowances to the 2303 registered fishers. The number of registered fishers is declining because of retirement age and this trend will continue. Children of fishers are reluctant to join the fishing sector as better employment is now available in the tourism and manufacturing sector. The mean age group of fishers is 45–50 years. The annual report for 2011 of the Fisheries Division lists for 2010 a number of 1770 registered fishers. At present the number of active full time fishermen is estimated at 400.

### 3.2 Artisanal Fisheries in the South East of Mauritius

The number of registered fishers in 2012 in the Mahebourg lagoon is according to figures supplied by the Ministry of Fisheries of 208. Most of the fishers (54%) operate out of Mahebourg, 43% from Bambous Virieux and 3% from G.R.S.E. Most of the fish caught in the lagoon is landed in Mahebourg (85%). In 2012 the fishers in the Mahebourg lagoon landed a total of 54 tonnes of fish at the official fish landing stations. No fish landings are reported from G.R.S.E. fishers. The fishers from Bambous Virieux landed 89 kg of fish each in 2012 and the fishers from Mahebourg 412 kg each. If these figures are correct then the majority of the fishers in Bambous Virieux only work as fishers on part time basis.

### 3.3 Aquaculture

Growing fish in cages is becoming an important alternative for the artisanal fishers. Recently small fish cages have been placed all around the island, which are managed by local groups of fishers. The only larger scale marine cage farm at present operating in the lagoon is Ferme Marine de Mahebourg. Figure 3-1 below shows two cages of artisanal fishers anchored in front of the hatchery of FMM in Pointe aux Feuilles.

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4 Governance des Pêches Maritimes dans l’Ouest de l’Océan Indien - REPORT/RAPPORT: SF/2012/07. June/June 2012 - SmartFish Programme, Indian Ocean Commission
The production of aquaculture in Mauritius (which consists of ponds, barachois and cages in the lagoon) is now 566 tonnes. Of the aquaculture production 500 tonnes is produced in the lagoon, the balance on land. The total fish yield from the lagoon, consisting of artisanal fisheries and aquaculture combined, was in 2010 some 1.015 tonnes. At present 49% of that amount of fish is originating from aquaculture. One could also say that the aquaculture production in the lagoon equals the fisheries yields of the artisanal fisheries.

Table 3-2 below shows the aquaculture production from 2006 to 2010

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>TYPE</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARACHOIS</td>
<td>Fresh</td>
<td>3.5</td>
<td>1.7</td>
<td>1.8</td>
<td>2.2</td>
<td>2.0</td>
</tr>
<tr>
<td>PONDS (PRAWN &amp; FISH)</td>
<td>Fresh</td>
<td>19.5</td>
<td>16.8</td>
<td>61.7</td>
<td>102.6</td>
<td>65.1</td>
</tr>
<tr>
<td>MARINE AQUACULTURE (CAGE)</td>
<td>Fresh</td>
<td>447.0</td>
<td>550.0</td>
<td>181.0</td>
<td>330.1</td>
<td>498.4</td>
</tr>
</tbody>
</table>

Table 3-2: Aquaculture Fish Production in Tonnes (in fresh-weight equivalent)
(Source: Ministry of Fisheries)

It is not likely that either the fisheries inside and outside the lagoon will yield much larger catches and any growth in local coastal marine fish production will thus have to come from the development of aquaculture. With the growing engagement of local fishermen in cage farming, aquaculture will surpass that of catch fisheries in the lagoon.