



**New Partnership for  
Africa's Development (NEPAD)  
Comprehensive Africa Agriculture  
Development Programme (CAADP)**



**Food and Agriculture Organization  
of the United Nations  
Investment Centre Division**

## **GOVERNMENT OF THE REPUBLIC OF MAURITIUS**

### **SUPPORT TO NEPAD–CAADP IMPLEMENTATION**

**TCP/MAR/2904 (I)  
(NEPAD Ref. 05/16 E)**

**Volume II of VII**

### **BANKABLE INVESTMENT PROJECT PROFILE**

**Agricultural Diversification (Integrated Processing and Marketing)**

*February 2005*



## **MAURITIUS: Support to NEPAD–CAADP Implementation**

**Volume I: National Medium–Term Investment Programme (NMTIP)**

*Bankable Investment Project Profiles (BIPPs)*

**Volume II: Agricultural Diversification (Integrated Processing and Marketing)**

**Volume III: Mauritius Agricultural Information System (MAIS)**

**Volume IV: Sustainable Land and Water Management**

**Volume V: Community Development and Poverty Alleviation Project**

**Volume VI: Mauritius Agricultural Biotechnology Institute (MABI)**

**Volume VII: Strengthening the Agro–Processing Capacity of Rodrigues**



## NEPAD–CAADP BANKABLE INVESTMENT PROJECT PROFILE

<b>Country:</b>	Mauritius
<b>Sector of Activities:</b>	Agro–processing
<b>Proposed Project Name:</b>	<b>Agricultural Diversification (Setting–up of a Central Processing and Marketing Unit for Table Potato, Palm Heart and Deer Meat)</b>
<b>Project Location:</b>	Mauritius
<b>Duration of Project:</b>	8 years
<b>Estimated Cost:</b>	<b>Rs166,154,370</b>
<b>Suggested Financing:</b>	

<i>Source</i>	<i>US\$ million<sup>1</sup></i>	<i>Rs million</i>	<i>% of total</i>
<i>Government</i>	–	–	–
<i>Financing institution(s)</i>	–	–	–
<i>Beneficiaries</i>	–	–	–
<i>Private sector<sup>2</sup></i>	5.63	166.15	100
<i>Total</i>	<b>5.63</b>	<b>166.15</b>	<b>100</b>

---

<sup>1</sup> Exchange rate:  
 Currency: Mauritius Rupee (Rs)  
 US\$1 =Rs29.5  
 Rs1 = US\$0.0339

<sup>2</sup> The project is expected to be financed fully by the private sector, namely the three ‘filières’, ideally with the financing institutions/donor organisations contributing to providing access to the funds required.



## MAURITIUS:

### NEPAD–CAADP Bankable Investment Project Profile

#### *“Agricultural Diversification (Setting–up of a Central Processing and Marketing Unit for Table Potato, Deer Meat and Palm Heart)”*

---

#### Table of Contents

Abbreviations.....	iii
<b>I. PROJECT BACKGROUND.....</b>	<b>1</b>
<b>A. Project Origin .....</b>	<b>1</b>
<b>B. General Information.....</b>	<b>1</b>
<i>(i) Table Potato .....</i>	<i>1</i>
<i>(ii) Deer Meat .....</i>	<i>3</i>
<i>(iii) Palm Heart.....</i>	<i>4</i>
<b>C. The ‘Filières’ .....</b>	<b>5</b>
<i>(i) Table Potato .....</i>	<i>5</i>
<i>(ii) Deer Meat .....</i>	<i>6</i>
<i>(iii) Palm Heart.....</i>	<i>8</i>
<b>II. PROJECT AREA.....</b>	<b>9</b>
<b>III. PROJECT RATIONALE.....</b>	<b>9</b>
<b>IV. PROJECT OBJECTIVES.....</b>	<b>11</b>
<b>V. PROJECT DESCRIPTION .....</b>	<b>11</b>
<b>A. Table Potato .....</b>	<b>12</b>
<b>B. Deer Meat .....</b>	<b>13</b>
<i>Step 1: Processing from Intensive and Extensive Farming.....</i>	<i>13</i>
<i>Step 2: Central Processing Unit for Venison.....</i>	<i>13</i>
<b>C. Palm Heart .....</b>	<b>15</b>
<b>VI. INDICATIVE COSTS .....</b>	<b>15</b>
<b>VII. PROPOSED SOURCES OF FINANCING .....</b>	<b>16</b>
<b>VIII. PROJECT BENEFITS .....</b>	<b>17</b>
<b>IX. IMPLEMENTATION ARRANGEMENTS .....</b>	<b>18</b>
<b>X. TECHNICAL ASSISTANCE REQUIREMENTS .....</b>	<b>20</b>
<b>XI. ISSUES AND PROPOSED ACTIONS .....</b>	<b>21</b>
<b>XII. POSSIBLE RISKS .....</b>	<b>22</b>
<b>Appendix: Map of Potato, Deer Meat and Palm Heart CPMU .....</b>	<b>25</b>





### Abbreviations

ACP	African, Caribbean and Pacific [Countries]
AMB	Agricultural Marketing Board
AREU	Agricultural Research and Extension Unit
BIPP	Bankable Investment Project Profile
CAADP	Comprehensive Africa Agriculture Development Programme
CPMU	Central Processing and Marketing Unit
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
MAFTNR	Ministry of Agriculture, Food Technology and Natural Resources
MCA	Mauritius Chamber of Agriculture
MDFCS	Mauritius Deer Farming Cooperative Society Ltd
MMA	Mauritius Meat Authority
MMPA	Mauritius Meat Producers Association
MSIRI	Mauritius Sugar Industry Research Institute
NEPAD	New Partnership for Africa’s Development
NMTIP	National Medium–Term Investment Programme
NSSSP	Non Sugar Sector Strategic Plan (2003–2007)
PPD	Plant Pathology Division [of MAFTNR]
SEA	Strategic Environmental Assessment



## I. PROJECT BACKGROUND

### A. Project Origin

I.1. In view of world trade liberalisation in agriculture, which will lead to greater exposure of Mauritius to competition and to possible significant displacement effect on the domestic industries, the *Ministry of Agriculture, Food Technology and Natural Resources* (MAFTNR) has proposed a series of reforms for the non-sugar sector of the economy through the *Non-Sugar Sector Strategic Plan* (NSSSP). The latter lays emphasis on the need to develop a modern and more efficient sector in order to enhance its competitiveness while at the same time optimising the use of resources. In this context, one of the measures proposed in the NSSSP is to encourage the grouping of producers, who are involved in the production of the same commodity. The *Mauritius Chamber of Agriculture* (MCA) fully supports this orientation and has been encouraging its members, who are involved in the same commodity production, to regroup themselves in ‘*filières*’, whereby an integrated approach is adopted from field to consumption.

I.2. The MCA regroups practically all agricultural producers of Mauritius as well as other persons or commercial firms having an interest in agriculture. Its membership comprises about 100 companies/producer groups/individuals, representing more than 20,000 sugar cane producers, including millers, miller-planters and a large number of small planters, as well as vegetable producers and agro-industries. Its basic objective is to promote and safeguard the interests of the agricultural community. In this respect, it provides the necessary forum where agricultural problems are debated and recommendations are made concerning the development of agriculture and agricultural industries.

I.3. Three *filières* have hence been created in the *table potato*, *deer meat* and *palm heart* sub-sectors and there is a real willingness from these large producers to set up a *Central Processing and Marketing Unit* (CPMU) for these three products. The MCA has recently commissioned a feasibility study which has made favourable recommendations for the setting up of the CPMU. The project would be implemented on a two-phase basis each spreading over a period of 4 years. The outlay for the two phases has been estimated at around Rs100 million and Rs67 million respectively. The proposed project is in line with the objectives of the NSSSP for a better organisation of production and marketing in the foodcrop sector and the promotion of value addition and transformation with the development of the local agro-processing industry. The project fully supports the NEPAD-CAADP pillar of increasing food supply where the coming together of the large producers of palm heart, deer meat and table potato will help achieve higher production with better quality. The project has also been approved by the Government of Mauritius in a recent Cabinet meeting.

### B. General Information

#### (i) Table Potato

I.4. **Raw State.** The total consumption of fresh potato is around 22,000 to 23,000 tonnes and is made up of locally produced and imported varieties. With a per capita consumption of 19 kg per year, potato remains a preferred commodity for the local market. The country produces some 16,000 tonnes during the period June to January and some 7,000 tonnes are imported for the rest of the year, with a glut occurring during the month of November and December. Prior to 1998, the *Agricultural Marketing Board* (AMB) was the sole importer of potatoes for the local market and the government was granting a subsidy to the AMB to cover the price of imported potatoes which was higher than the local wholesale price. Partial liberalisation of imports took effect as from January 1998 and as from year 2000, subsidies were totally withdrawn. Despite the allocation of quotas equivalent to 50 percent

of the country’s requirements to private importers, the AMB is still the most important importer accounting for about 75 percent of imports. Of the total requirements for locally produced potatoes, sugar estates supply around 33 percent, the *National Federation of Young Farmers’ Club* around 10 percent, and the rest is shared between the *Mauritius Agricultural Marketing Cooperative Federation* and the independent growers. The main production areas lie in the cooler districts of the island. The coastal regions are less suitable to potato production due to frequent adverse climatic conditions and lack of irrigation facilities. Potato is cultivated in pure stand on sugarcane rotational lands as well as in the interline of new sugarcane plantations. The table below shows the total acreage under potato cultivation for the period 1998–2003.

	1998	1999	2000	2001	2002	2003
Pure stand (ha)	407	460.4	384.1	363.4	492.7	466
Interline (ha)	846	357.4	447.1	832.5	226.7	243.8
(Pure stand equivalent)	423	178.6	237.9	415.6	115.5	121.5
<b>Total acreage</b>	<b>830</b>	<b>639</b>	<b>622</b>	<b>779</b>	<b>608.2</b>	<b>587.5</b>
Rivière du Rempart	43.7	20.1	21.2	31.4	28	40.2
Pamplemousses	92.2	34.8	94.7	107.5	80.4	72.
Moka	293.1	181	151.6	177.7	124.2	136.3
Flacq	40.5	33.4	28.3	44.4	50.4	29.5
Black River	41.5	4.1	7.3	32.8	55.3	19.4
Plaines Wilhelms	113.3	112.5	109.6	138	127.8	77.7
Grand Port	65.3	11.7	12.6	36.6	48.7	28.5
Savanne	140	241.9	196.8	210.5	93.4	183.8

Source: CSO, Digest of Agricultural Statistics

I.5. Although the product is sold according to market forces of supply and demand, the sector remains regulated by the AMB, which is the sole importer of seeds and it also guarantees a minimum price determined by the *National Potato Committee* to registered dealers. The main varieties produced are Spunta and Mondial. The government has expressed its policy for the potato sector in the NSSP 2003–2007, which includes the identification of new varieties and less dependence on the import of seeds. The MCA has set up a system of filières for its members and it has 12 producers in the potato filière, with an annual production of 4,200 tonnes. However, the potato filière has not known any development since the past twenty years except for research on production techniques. There does not exist any marketing strategy for the filière and hence the need for a CPMU.

I.6. **Processed State.** Locally produced potatoes are used for the production of potato chips. Locally processed potatoes in the form of “chips” are found on the shelves of various stores and supermarkets. There are two types of “chips” made in Mauritius. The simplest form of “chips” sold on the local market is made in an artisanal manner. Potatoes are sliced, deep fried and packed in plastic bags of various sizes. The second type of “chips” is manufactured on an industrial scale from imported raw material. To date at least three local companies are involved in the industrial manufacturing of this item. Fries made out of locally grown potatoes are also available in small restaurants and snacks. No proper records exist to trace the extent to which locally produced potatoes are processed in the form of chips and fries. Potato is also imported in its processed forms from various sources. The most important items of processed potato are potato flour, flakes of potato, potato starch, frozen preserved processed potatoes and non-frozen processed potatoes.

I.7. **Legal and Institutional Framework.** Potato is one of the most important vegetables consumed in Mauritius, so much so that the commodity has been declared “controlled product” under the *Mauritius Agricultural Marketing Act* of 1963. Institutions directly involved in the potato sector include the AMB (created under the above-mentioned Act), the *Agricultural Research and Extension Unit* (AREU), the *Mauritius Sugar Industry Research Institute* (MSIRI) and the *Plant Pathology Division* (PPD) of MAFTNR. The AMB imports seed and table potatoes for the local market while AREU offers extension service to potato producers and collects useful statistics on the industry. The MSIRI is responsible for the multiplication and certification of locally produced seeds, monitoring of imported seeds and for carrying research on improvement of crop husbandry practices. It also has a plan for the breeding of clones for local conditions. The PPD has among its responsibilities to monitor the quality of potatoes imported into the country.

(ii) **Deer Meat**

I.8. Over the past 25 years, the deer industry has gradually been shifting from a game activity towards a semi-intensive livestock enterprise. Venison is currently the main domestic red meat sector and is the only meat other than poultry, which is consumed by all components of the population. The deer meat sub-sector has high market potentials, both in domestic and export markets where the quality of the local meat has been found to be superior to venison from temperate deer species. In fact, Mauritius was previously exporting venison to the region namely to Reunion Island and Madagascar but the activity was stopped because of failure to conform to international standards of food quality and safety.

I.9. **Raw State.** Deer farming is carried out in almost all parts of Mauritius and under different climatic conditions. It currently occupies some 25,000 hectares of land devoted to both ‘extensive’ and ‘intensive’ farming. Of the 25,000 ha, 15,000 are privately owned and the rest is state lands which is rented out to deer farmers in the form of “*chassées*”. Extensive farming is mainly concerned with hunting over a period of four months ranging from June to September each year. Intensive farming, which is characterised by rearing in feedlots, occupies only around 1,200 ha and animals are slaughtered at any time of the year. The national herd of deer is estimated at 70,000 heads and actual production amounts to 450 tonnes with nearly 90 percent coming from extensive farming. This explains that deer meat is in profusion during the hunting season and in limited supply during the rest of the year. About 20,000 persons are directly or indirectly involved in the deer sector. Deer farmers are regrouped within the *Mauritius Meat Producers Association* (MMPA) which has some 54 members on its roll. Potential production is estimated at 600 tonnes without any expansion in land acreage.

I.10. Most of the produce reaches the consumer through traditional butchers. Around 25 percent of the kill is kept for members of the “*chassée*” while the rest is sold to butchers and members of the public. On the other hand, the *Mauritius Deer Farming Cooperative Society Ltd* (MDFCS) sells mainly deer shot in feedlots during the off hunting season. The animals are purchased from feedlots, slaughtered and sent to the *Mauritius Meat Authority* (MMA) for evisceration, inspection and distribution to the points of sales. Consumption of venison is very low, around 4,000 kg during the off hunting season and it shoots up during the hunting season to reach 105,600 kg.

I.11. The policy of the government, as expressed in the NSSSP, makes provision for revitalising the livestock sector, in particular the production of venison. In this context, the NSSSP provides for the conduct of a feasibility study on the setting up of a modern slaughterhouse for deer so that the meat may conform to international food quality and safety norms. The plan provides for the setting up of a technical committee to study the issue of carcasses emanating from “*chassées*” and to make

recommendations on inspection of meat in conformity with required norms. The NSSSP also proposes to strengthen legislative measures to address the acute problem of poaching.

Table 2: Monthly Supply of Venison, 1999–2003 (during Hunting Season)

Year	June		July		August		September		Total	
	N° of Carcasses	Tonnes	N° of Carcasses	Tonnes	N° of Carcasses	Tonnes	N° of Carcasses	Tonnes	N° of Carcasses	Tonnes
1999	2,730	99	2,835	103	2,940	106	1,995	72	10,500	380
2000	2,574	97	2,772	104	2,970	112	1,584	60	9,900	372
2001	2,565	95	3,135	116	2,470	95	1,330	46	9,500	352
2002	2,279	82	2,852	107	2,514	94	1,437	53	9,082	336
2003	2,458	92	2,623	98	3,170	111	1,589	57	9,840	359

Source: Mauritius Chamber of Agriculture

I.12. **Processed State.** Carcasses sold to the public are dressed in various cuts to include shoulder, haunch, filet, offal, paunch and paws. Butchers dress carcasses in the traditional way whereas the supermarkets have their own processing rooms and purchase the carcass from the MDFCS. There is little deer processing at present and the only processed item found in most supermarkets is deer sausage. Only one independent meat shop offers several types of deer meat preparations such as terrine, sausage, ham and burger.

I.13. **Legal and Institutional Framework.** Deer rearing and hunting is regulated by the *Wildlife and National Parks Act* of 1993. The official hunting season starts on 1<sup>st</sup> June and ends on 30 September of any year. It is prohibited to shoot deer outside the hunting season in “chassées”. Deer reared under feedlot conditions may be slaughtered all year around following approval and inspection from the Veterinary Services for sale on the local market. The MMPA, which regroups deer producers, has as main role to safeguard the interest of its members and to work towards the improvement of the local livestock sector. As such, it provides the necessary means for collective representations to be made to the authorities and to international institutions on issues which are of direct concern to its members and to the sector in general. The MMA provides its services for the processing and distribution of deer carcasses for the MDFCS and for other deer producers. Sale of deer meat is regulated by the *Meat Shop Regulation* of 1980 and the *Meat Act* of 1974.

### (iii) Palm Heart

I.14. **Raw State.** In Mauritius, palm heart is considered a high value product and is grown commercially for its heart. Although several species of palms grow in Mauritius, the most commonly grown is the Hurricane palm, also known as *Palmiste Blanc de Maurice*. The acreage under production has evolved from 285 ha in 1999 to 327 ha in 2003 and total sales in 2003 amounted to some 44,000 units. 95 percent of total supply comes from the sugar estates and palm hearts are sold fresh to the high-end markets including hotels and restaurants.

I.15. The MCA instituted the “*Groupement Palmiste*” in 1995 and has 14 members. Up to now, palm has been grown on marginal lands exclusively, which explains the low level of production and supply. There does not exist any specific marketing strategy with the result that the product is sold at an artificially high price. The palm hearts are also imported in its preserved forms and may be found in small quantities in supermarkets.

I.16. **Processed State.** The harvested palm sheaths are sold in their fresh state by producers and no processing is done on the farm. Intermediaries who collect the produce from the farm carry out

primary processing by removing the sheath and dipping the heart in permitted chemicals to prevent browning. The majority of the sheaths are sold as such to hotels and restaurants which open the sheaths just before use. Palm hearts are not further processed and packed like the imported produce. Heart of palm is processed into pickles in small amounts in the traditional manner for sale on the local market. One local agro-industrial company transforms local palm hearts into pickles for sale on the local as well as export markets.

Table 3: Import of Preserved Palm Heart, 1999–2003

Source	1999		2000		2001		2002		2003	
	kg	CIF (Rs)	kg	CIF (Rs)	kg	kg	CIF(Rs)	kg	CIF(Rs)	kg
South America	161	5,171	2,354	94,213	119	6,297	830	46,057	1,208	66,601
France	1,315	40,308	1,817	77,946	819	34,247	1,041	41,240	1,670	56,328
Spain					235	10,743	219	12,059	304	20,924
China							126	5,899		
India									706	22,058
South Africa									19	1,062
Thailand									272	10,784
<b>Total</b>	<b>1,476</b>	<b>45,479</b>	<b>4,171</b>	<b>172,159</b>	<b>1,173</b>	<b>51,287</b>	<b>2,216</b>	<b>105,255</b>	<b>4,179</b>	<b>177,757</b>

Source: Mauritius Chamber of Commerce and Industry

### C. The ‘Filières’

#### (i) Table Potato

I.17. The potato filière groups members of the Chamber who produce and sell table as well as seed potatoes. The filière as established by the MCA groups 12 producers as listed below:

Table 4: Members of the Potato Filière

Beau Champ Sugar Estate	Highlands Sugar Estate
Beau Plan Sugar Estate	Labourdonnais Sugar Estate
Bel Air Sugar Estate	Medine Sugar Estate
Bel Ombre Sugar Estate	Mon Désert Alma
Belle Vue Sugar Estate	Riche Terre Sugar Estate
Britannia Sugar Estate	Union Sugar Estate

I.18. The most important producers of table potato in the MCA filière are Britannia, Beau Champ, Beau Plan/Belle Vue and Mon Desert Alma. Members of the filière grow table potatoes for the market and seed potatoes which are sold to the AMB. It is estimated that the potato filière as set up by the MCA produces about 33 percent of the total annual local production of table potatoes, representing an annual output of some 4,000 tonnes. Table potatoes are planted in both first and second seasons. The first planting season extends from late March/start of April to June while the second planting season extends from July to September. Crop of the first season is harvested from beginning of July to end of September and may extend into mid October. Harvest of the second planting season starts around mid October and ends in December/start of January of the next year.

I.19. The filière has the potential to produce up to 5,000 tonnes if an acreage of some 280 ha are devoted to the cultivation of table potatoes at an average yield of some 20 tonnes per hectare. Under favourable climatic conditions, the figure for total production could reach some 6,000 tonnes. Some 94 percent of potatoes produced in the first season is sold ex field direct to merchants and some 6 percent is sent to the AMB. In the second season, some 72 percent of harvest is sold ex field direct to

merchants while the rest is sent to the AMB under the *Guaranteed Producer Price Scheme*. Merchants who purchase from producers are the same who are registered as Traders at the AMB. They number between 200 to 250, however only some 50 to 75 of them are regular and important traders. The AMB is considered as the buyer of last resort although it offers a guaranteed producer price above the average prevailing market price. However, producers have to grade their produce, do not have a guaranteed market for small size potatoes and they need to incur additional costs to transport the crop to the AMB.

Year	2001	2002	2003
Seeds used (tonnes)	691	548	481
Area cultivated (hectares)	283	253	195
Production (tonnes)	4,372	4,106	4,261
Yield (tonnes/ha)	15.5	16.2	22.0

Source: Mauritius Chamber of Agriculture

Buyer	2001	2002	2003
Merchants	77	95	90
AMB	23	5	10

Source: Mauritius Chamber of Agriculture

I.20. The prices obtained from the merchants vary as harvest progresses while the AMB fixes the Guaranteed Producer price at the start of harvest. Producers obtain the highest price at start of the first season harvest and as harvest progresses, the price falls due to abundance of the produce on the market and due to competition from other growers. Proceeds from the sale of potatoes to merchants and to the AMB represented an annual turnover of Rs38.5m in 2001, Rs45.5m in 2002 and Rs49.4m in 2003, generating profits of Rs12.6m, Rs13.8m and Rs12m, respectively.

Year	1 <sup>st</sup> Season		2 <sup>nd</sup> Season		Average Price	AMB Price
	Start	End	Start	End		
2001	14,500	8,000	9,500	6,300	8,840	9,600
2002	13,000	10,500	10,600	5,250	10,550	10,730
2003	14,700	12,500	13,000	10,300	11,665	11,885

Prices in Rs per tonne.

Source: Mauritius Chamber of Agriculture

## (ii) *Deer Meat*

I.21. Most deer farmers are regrouped within the MMPA. The Association regroups 54 deer members including the MDFCS and the MCA provides part of the logistics for the running of the Association. The near totality of deer meat supplied to the market is produced by members of the MMPA. Most of the supply of deer meat comes during the hunting season (June–September) from extensive farming. The MDFCS supplies meat during the off hunting season from feedlots used in intensive farming. This filière has no marketing strategy and 75 percent of the produce reaches the consumer through traditional butchers. Deer killed on “chassées” are collected and transported to a central collection unit called the “*lieu de partage*” where they are sold. It is estimated that butchers



purchase the near totality of carcasses put on sale by “chassées” whereas deer shot through stoaking are sold to supermarkets through the MDFCS.

**Table 8: Monthly Sales of Deer Meat through the MDFCS, 1999–2003**

Month	1999		2000		2001		2002		2003	
	N°	kg	N°	kg	N°	kg	N°	kg	N°	kg
March	92	2,886	198	5,731	122	3,889	33	959	64	2,012
April	90	2,730	89	2,580	87	2,405	105	3,089	77	2,328
May	159	4,657	122	3,517	146	3,933	162	4,499	96	3,007
June	40	1,013								
July										
August										
September										
October	133	4,299	138	4,301	103	2,949	163	5,359	52	1,875
November	252	7,575	201	6,038	141	4,311	163	4,840	137	4,976
December	380	11,242	390	12,073	218	6,465	248	7,829	367	11,145
January	199	5,936	185	5,284	130	3,721	72	2,147	75	2,215
February	198	5,722	127	4,095	74	2,332	82	2,676	95	3,087
<b>Total</b>	<b>1,543</b>	<b>47,060</b>	<b>1,450</b>	<b>43,619</b>	<b>1,021</b>	<b>30,005</b>	<b>1,028</b>	<b>31,398</b>	<b>963</b>	<b>30,645</b>

Source: Mauritius Deer Farming Cooperative Society Ltd

I.22. The MMPA works out a minimum recommended price for the sale of carcasses to its members during the hunting period. This recommendation gives an idea of the average prevailing price at which carcasses are sold. The price of venison has generally been on the increase and between 1999 and 2003, the price of venison has increased by about 20 percent.

**Table 9: Minimum Selling Price of Venison, 1999–2004**

Year	Butchers		Others	
	Rs./kg	% increase	Rs./kg	% increase
1999	85		90	
2000	91	7	97	7.7
2001	96	5.5	102	5.1
2002	100	4.1	108	5.8
2003	102	2	110	1.8
2004	102	0	110	0

Source: Mauritius Meat Producer's Association

I.23. Members of the filière have made heavy investments to consolidate their activity. These investments have focussed on the development of pasturelands, fencing of ranches, purchase of breeding animals and the setting up of adequate structures for the cutting of culled deer. The filière believes that deer production has a big potential for the local as well as for the export markets. The present market size has been estimated using sale figures of “chassées” and those of the MDFCS. Average monthly figures of carcasses supplied by “chassées” and the MDFCS were computed to determine the monthly supply.

**Table 10: Market Size for Deer Meat**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Present supply (kg)	3,861	3,582	3,095	2,626	3,922	93,200	105,600	103,600	57,600	3,757	5,548	97,508

Source: Mauritius Chamber of Agriculture

I.24. In its efforts to improve the profitability of the industry, the filière has diversified its activities to include special hunting trips and sightseeing for tourists. In line with its policy aiming at further developing the industry, members of the filière have commissioned a study on the sector which has revealed, amongst others, that the potential demand for venison on the local market is around 600 tonnes and that the distribution and sale of venison has to be better organised to attract consumer acceptance.

(iii) *Palm Heart*

I.25. In 1995, the MCA set up the *Groupement Palmiste* which comprises 14 members with the aim of promoting the technical, agronomical and commercial aspects of the product. The groupement accounts for some 90 percent of national palm heart production. The members of the *Groupement Palmiste* are:

Belle Vue Sugar Estate/Beau Plan Sugar Estate	Deep River Beau Champ Sugar Estate
Bel Air Sugar Estate	FUEL Sugar Estate
Bel Ombre Sugar Estate	Mon Trésor Sugar Estate
Britannia Sugar Estate	Savannah
Cascade Ltd	Société de la Réserve
Constance Sugar Estate	Union Sugar Estate

Year	1999	2000	2001	2002	2003
Hectares	285	290	314	357	327
Units sold	n.a.	46,115	43,347	44,402	43,796

Source: Mauritius Chamber of Agriculture

I.26. The *Groupement Palmiste* has so far initiated three major studies to consolidate its members’ knowledge on palm heart, its consumption, ways to add value to the product and on varieties that can adapt to local conditions. The commercial aspects of the results of these studies indicate that the production of palm heart is a profitable enterprise and that the commodity has a ready internal market. Demand by far exceeds supply and there is no cultural barrier to its consumption. Individual buyers find the price of a heart of palm to be expensive however hotels and restaurants are ready to pay the price charged by sellers.

I.27. The studies revealed that the local palm heart has a very short shelf life which may be prolonged by chemical treatment. The product is most of the time sold fresh and little processing is done. The primary product may be transformed into pickles and may be preserved using chemical treatment. There is a substantial local and export market for palm heart pickles. A new variety of palm imported from South America — the *pejibaye* — shows good growth characteristics under the local agro-climatic conditions. This new variety has given promising results and will be grown on commercial scale by the *Groupement Palmiste*. However, the produce has yet to undergo the test of severe cyclones to determine its vulnerability.

I.28. Palm heart is harvested all along the year depending on the demand. Members of the *Groupement Palmiste* dispose a small proportion of their harvest by selling direct to individuals, hotels, restaurants, and supermarkets. Otherwise, the majority of palm heart produced reaches the consumer through intermediaries as shown in the table below:

Buyer	2001	2002	2003
Restaurants	10	11	8
Hotels			3
Individuals			3
Supermarkets			1
Intermediaries	42	44	85

Source: Mauritius Chamber of Agriculture

I.29. Information obtained from the MCA and producers indicate that the price of palm hearts has increased along time, confirming the high exotic value of the commodity. In 2001, the lower grades were sold at Rs100 per unit while the higher grades were selling for Rs200. In 2003, the price reached Rs200 for the lower grades and the higher grades were sold at Rs300. The total revenue of the industry has kept increasing along the years as shown in the table below:

Grades	2001		2002		2003	
	Low	High	Low	High	Low	High
Unit Price (Rs)	100	200	165	250	200	300
Units Sold	6,502	36,845	6,661	37,741	6,570	37,226
Revenue (Rs)	650,200	7,369,000	1,099,065	9,435,250	1,314,000	11,167,800
Total Revenue	8,019,200		10,534,315		12,481,800	
Total Cost	1,430,451		1,465,266		1,445,268	
Net Revenue	6,588,749		9,069,049		11,036,532	

## II. PROJECT AREA

II.1. The feasibility report has not made any recommendations on the most appropriate geographical location for the CPMU. Given the concentration of the production of the three products in the midlands, the filières are currently considering the setting up the CPMU in Nouvelle France. Further information about the project area will be known at a later stage.

## III. PROJECT RATIONALE

III.1. The imminent decrease in the guaranteed price of sugar exports by the ACP Community (37 percent decrease by 2007) has pushed forward the urgency of improving the efficiency of the diversification policy in the agricultural sector (as proposed in the NSSSP). Mauritian agriculture has always been dominated by the cultivation of sugar cane, whose contribution to value added in agriculture stands high at over 50 percent. The threats of world liberalisation on the sugar industry call for a reorientation of the non-sugar sector from the traditional practices to a modern, sophisticated and technology based approach with focus on self-sufficiency, meeting quality exigencies and developing the local agro-processing industry amongst others.

III.2. **Development of Agro-processing Industry.** As stated in the NSSSP, the “future of the Mauritian agriculture and expansion of its export opportunities rests largely on the development of its agro-industry, in view of the highly perishable nature of fresh food together with the distance of Mauritius from its traditional niche markets”. Till recently, the local agro-processing industry was

importing most of its raw materials because of the unavailability or sub-standard quality of local produce. The setting up of the CPMU looks to exploit the processing/transformation potential in the filières of palm hearts, potatoes and deer meat by monitoring the production and quality aspects of the products. The CPMU will transform the three products into several processed states to create value added. The processing of potatoes would consist in the production of French fries and chips, while raw palm hearts will either undergo minimal processing (wrapped and vacuum packed or sold in jars) or be processed as pickles. There will be minimal processing for deer meat which will be retailed as choice cuts and in ‘barquettes’. As per the NMTIP, value addition through transformation and processing has been identified as a key priority for the non-sugar sector.

III.3. **Diversification of Sugar Industry (Alternative Source of Revenue and Job Creation).** With the advent of world trade liberalization and changes occurring in the ACP/EU agreements, major structural changes will occur in the agricultural and food commodity sectors. This offers justification for developing a structured diversification project to protect sugar industries, which make up most of the membership of these filières, against these economic risks. The setting up of the CPMU will play an important part in the sustainable development of the Sugar Estates. This project is in line with the objectives of the NSSSP to modernize the agricultural sector whereby the members of the three filières will become more efficient and competitive.

III.4. Besides supporting the development of the agro-processing industry and creating an alternative source of income for the sugar industries, the proposed project comes in at the right time to address several constraints facing the non-sugar sector. The CPMU would lead the way in improving the planning of production and the marketing of agricultural produce, whilst concentrating on the notion of quality.

III.5. **Marketing and Quality.** Profitability to planters has often been questionable in view of the poor marketing system under which they operate presently. A majority of planters still resort to auctioneers to market their produce at the local level. Marketing at market places is also being done under poor sanitary conditions, which affects the overall quality and marketability of the produce, as well as, puts at risk the safety of customers. The absence of a proper marketing strategy is another major constraint to the development of the Mauritian non-sugar agricultural sector. In the present practice, there has been no efficient link between the production line and the marketing system, such that it has, up to now, not been possible to effectively plan production according to the market demand.

III.6. Under this project, a CPMU will be set up to handle the marketing aspects of the commodities, purchase of the produce, provide storage if necessary, grade the commodities and pack and label the produce, hence generating value added. At present, there is an evident lack of a well-conceived marketing strategy for the three filières. This issue will hence be addressed by this project which provides for the design of an effective marketing strategy that would entail, amongst others, the establishment of a distribution chain to cover the island at least once a week. The CPMU will establish contacts with retailers, supermarkets and other retail outlets for the distribution of its products.

III.7. **Planning of Production.** It is evident that production in Mauritius is self-regulated, and not based on any scientific data. Production in Mauritius at the planters level has been done mostly based on experience of planters accrued over the years, which somehow provide useful indications. However, a good reflection of climatic, seasonal, geographical and market indexes is essential in the optimisation of agricultural production, which has however so far not been taken into consideration while planning production. The vision of a planned production within agriculture forms the basis of the proposed reform at the planters’ level. The feasibility study has taken all these factors into consideration in making well-conceived production forecasts for the CPMU. Production plans have

also been formulated in line with market potential and lifestyle and projections have been made for the production and processing of the respective filières over an 8–year period.

#### IV. PROJECT OBJECTIVES

IV.1. The *primary objective* of the project is to set up an organised structure for the production, processing and marketing of the products of the three filières.

IV.2. *Specific objectives* are as follows:

- Increasing and optimising their production capacity, in line with the production potentials of the three filières;
- Reducing production cost and hence increasing the competitiveness of the produce, through the benefits of organised and ‘centralised’ production, storage and transformation;
- Improving their revenue, profit margin and market share;
- Adding value to their produce, mainly through the transformation and processing of the products;
- Implementing a competitive pricing policy to the benefit of consumers;
- Ensuring that the product conforms to food safety standards;
- Reducing the country’s dependency on food imports thereby enhancing household food security;
- Contributing in fighting poverty, through job creation;
- Improving natural resource management;
- Serving as model for small producer groups, thereby helping to improve their members’ welfare.

#### V. PROJECT DESCRIPTION

V.1. A conceptual framework for a CPMU has been designed with building infrastructure for processing, storage and research as well as administrative facilities and logistics. After discussion with members of all three filières and representatives of the MCA, the concept was adapted to reality with a two–phase implementation over a period of eight years. The new framework caters for a gradual increase in production and storage capacity and has been designed in an optimal and modular manner. This concept provides for stand–alone facilities for each filière and includes industrial transformation and innovative product lines. Thus, the physical framework of each filière has been planned to operate separately. (see Appendix).

V.2. An in–depth financial study has been carried out on the commercial viability of the three filières and the results have shown that potato and palm heart are very profitable ventures and that comparatively, the deer meat would take more time to recoup the costs of investment. The financial analysis has also explored the profitability of different processed items and has concluded that: table

potato will be sold raw and processed into French fries and chips, deer meat will undergo minimal processing to be retailed as fresh meat or chilled meat in ‘*barquettes*’, palm heart will be sold in raw state, vacuum packed or processed into pickles. An expert in Environmental Studies has also conducted a *Strategic Environmental Assessment* (SEA) in order to assess the consequences of the policies and plans on the environment. The assessment came up with the following main recommendations:

- Composting of potato and palm sheath waste into compost at the CPMU;
- The use of bio-degradable packing materials for ecological reasons;
- The use of appropriate technology for wastewater and effluent disposal.

#### A. Table Potato

V.3. **Storage.** Growers will have to deliver their raw products to the CPMU. Purchase of locally produced potatoes will be carried out through purchase contracts signed with members of the filière. Potatoes are stored at +5°C and 98 percent RH. It is proposed to store 400 tons of table potatoes during the first season and 600 tons during the second season in modular cold rooms of 300 tons capacity each. Each modular cold room would measure 24 m x 12 m x 6 m high and would be stacked within 21 rows of crates separated by a central alley of 4 metres. Each crate would measure 1m x 1m x 1m, made up of slatted wood and containing 600 kg of potatoes. The cold rooms would be erected within a structural steel building measuring 26 m x 30 m and would thus have a 6 m x 26 m loading bay in front of the doors which would be insulated to serve as conditioning space to bring the potatoes back to 15°C prior to delivery.

V.4. **Processing.** The processing of potatoes would consist in the production of French fries and of chips. The basic data given above indicate that one could install a production line of 100–500 kg per hour for French fries and one line of 100–500 kg/hour for potato chips. The equipment will have an estimated cost of Rs11m. The required outputs would be obtained by modulating the hours of production into one or two shifts of varying number of hours. The table below provides the infrastructure cost for potato storage and processing.

Lot	Year 1		Year 5	
	Storage	Processing	Storage	Processing
Cost of land	450,000	450,000		
Cost of building	4,290,000	1,716,000	5,740,988	2,296,395
Refrigeration equipment	5,000,000	1,000,000	6,691,128	1,338,226
Insulation panels/doors	6,200,000		8,296,999	
Car park and driveway (asphalting)	300,000	300,000		
Fencing	200,000	200,000		
Processing equipment:				
– French fries (100–500 kg/hour)		15,000,000		
– Chips (100–500 kg/hour)		11,000,000		
Other equipment		500,000		669,113
Utilities and M&E services	2,500,000	2,500,000	3,345,564	3,345,564
<b>Total</b>	<b>18,940,000</b>	<b>32,666,000</b>	<b>24,074,679</b>	<b>7,649,297</b>
All figures in Rs.				

## B. Deer Meat

### Step 1: Processing from Intensive and Extensive Farming

V.5. Currently, the animals are killed in the contention rooms at the farms (intensive farming) and are transported to the MMA abattoir at Roche Bois for processing. The MMA delivers the carcasses to buyers as per a delivery list issued to them by the MDFCS. The project proposes an improvement to the process whereby the MDFCS will deliver the live animals to the abattoir, where they would be slaughtered and processed in conditions that would meet fully the hygiene requirements. As regards extensive farming, the carcasses are actually eviscerated in dressing rooms located at the different chassées. The existing dressing rooms have rudimentary processing facilities and some of them have been improved to tend towards hygienic conditions acceptable to the food industry. It is proposed that the filière organise for as many animals as possible to receive a preliminary evisceration as they lie where killed, within one hour of having been shot. The animal would then be transported to the dressing room of the chasse or to a regional dressing room where it can be opened, eviscerated and stocked.

### Step 2: Central Processing Unit for Venison

V.6. **Carcasse Reception.** Carcasses are received in Zone V2 which consists of a docking tunnel of 6 m x 2 m to discharge the carcasses from the lorry, hang them on the overhead rails and weigh through suspended scales. A refrigerated trunk will be used to collect deer carcasses from chassées on a regional basis and transport them to the CPMU. Such a lorry with a carriage capacity of 4 tonnes approximately and will cost around Rs2m. The table below gives the projections for carcasse reception.

	Unit	Year 1 2005	Year 2 2006	Year 3 2007	Year 4 2008	Year 5 2009	Year 6 2010	Year 7 2011	Year 8 2012
Carcasses	t	145	155	173	193	292	336	420	464
	No.	4,200	4,500	5,000	5,500	8,500	9,600	12,000	14,000
Carcasses to stock per week (Basis: 16 week hunting period)	No.	260	280	310	350	525	600	750	830
Carcasses to process daily (Basis: 5 days per week)	No.	52	55	62	70	105	120	150	166

V.7. **Carcasse Storage at +2°C.** The storage of carcasses on rails at +2°C would grow over the years as per the following table.

	Unit	Year 1 2005	Year 2 2006	Year 3 2007	Year 4 2008	Year 5 2009	Year 6 2010	Year 7 2011	Year 8 2012
Space required Cumulated	m <sup>2</sup>	78	90	102	126	192	252	312	420
Estimated cost of building	Rs	858,000				2,296,395			
Estimated cost of rails		2,050,000				2,729,980			
Estimated cost of refrigeration equipment		1,000,000				2,676,451			
Estimated cost of insulation panels		1,220,000				3,265,270			
<b>Total</b>		<b>5,128,000</b>				<b>10,968,097</b>			

V.8. ***Carcasse Processing at +10°C and Storage at +2°C.*** Processing of deer meat will be restricted to choice cuts and to packing in ‘barquettes’, following the conduct of a market survey. Initially, the latter showed an interesting market potential for processed deer meat (burgers and sausages, minced meat and roasted). However, these products have not passed the commercial viability assessment, where the cost per unit would be much higher than the current selling price on the market. The following table indicates the requirements for processing over the 8–year period.

	Unit	Year 1 2005	Year 2 2006	Year 3 2007	Year 4 2008	Year 5 2009	Year 6 2010	Year 7 2011	Year 8 2012
Space required (cumulative)	m <sup>2</sup>	78				156			
Estimated cost of building	Rs	429,000				574,099			
Estimated cost of equipment		1,500,000				669,113			
Estimated cost of insulation panels		750,000				1,003,669			
Estimated cost of refrigeration equipment		600,000				802,935			
<b>Total</b>		<b>3,279,000</b>				<b>3,049,816</b>			

V.9. ***Meat Processing (Cuts and Barquettes) at +10°C and Storage at +2°C.***

	Unit	Year 1 2005	Year 2 2006	Year 3 2007	Year 4 2008	Year 5 2009	Year 6 2010	Year 7 2011	Year 8 2012
Product	t	50	55	60	75	120	158	200	270
Space requirement	m <sup>2</sup>	780				78			
Cost of building	Rs	429,000				574,099			
Cost of equipment		400,000				535,290			
Cost of insulation panels		750,000				1,003,669			
Cost of refrigeration equipment		600,000				802,935			
<b>Total</b>		<b>2,179,000</b>				<b>2,915,994</b>			

V.10. ***Administration and Sales.*** It is proposed to allocate one bay of 6 m x 26 m to the above mentioned activities. The ground floor would be occupied by the sales and delivery activities and the staff facilities. Offices would be located on the first floor.

V.11. The ***surface and cost of land*** occupied by the project is as indicated in the following table:

	Unit	Year 1 2005	Year 2 2006	Year 3 2007	Year 4 2008	Year 5 2009	Year 6 2010	Year 7 2011	Year 8 2012
Land for buildings	m <sup>2</sup>	468				312			156
Land for driveways and car parking		700				700			
<b>Total land</b>		<b>1,168</b>				<b>1,168</b>			
Buying cost of land	Rs	300,000							
Cost of asphaltting, drive way and car parking		800,000							
Fencing		80,000							
<b>Total</b>		<b>1,180,000</b>							



### C. Palm Heart

V.12. It is assumed that the producers will deliver their product to the Central processing unit according to an agreed programme.

V.13. **Processing for delivery of fresh raw palm hearts (protected by their inner sheaths).** It is envisaged to remove the sheaths mechanically, to seal the ends with paraffin wax and to wrap in transparent foil. The product would be stored in a cold room at +4°C, ready for sale.

V.14. **Processing for delivery of fresh raw palm hearts, vacuum packed in whole or in slices.** The removal of the outer sheaths would be done mechanically; the last inner sheaths would be removed manually. Citric acid will be applied as a preservative and the product wrapped and vacuum packed and stored in a cold room at +4°C, ready for sale

V.15. **Processing for pickles.** The palm hearts of grades B and C as well as the off-cuts from the processing of Grade A hearts will be cut in slices or otherwise. The raw material shall be blanched or boiled or utilised raw to give crispiness. Ingredients will be added, according to the different recipes. The product will be packed in jars to ensure a shelf-life of five years. The jar shall be topped up with oil to ensure preservation.

V.16. The **budget for the palm filière** (exclusive of administration equipment, vehicles and working capital) is as follows:

Lot	Year 1	Year 5
Land	260,000	
<b>Buildings:</b>		
– Palm heart	850,000	1,137,492
– Compost	250,000	
<b>Equipment:</b>		
– Sheath remover	500,000	
– Processing/cooking and packing equipment	1,500,000	2,007,338
– Shredder for compost	500,000	
– Cold room	200,000	267,645
– Mechanical and electrical services	1,200,000	1,003,669
<b>Utilities</b>	500,000	669,113
<b>Total</b>	<b>5,760,000</b>	<b>5,085,257</b>

## VI. INDICATIVE COSTS

VI.1. The project would be implemented in two phases at a total cost of Rs166.15m, incorporating working capital of Rs10m. Phase 1 and Phase 2 would each be implemented over a 4-year period at a cost of Rs99.24 and Rs66.91m respectively. Working capital has been estimated to meet initial payments for the starting months for direct operating expenses, payments to suppliers of raw materials and retailed items, payment for consumption of utilities and labour costs amongst others. The other major investment cost represents machinery and equipment for the storage and manufacturing activities. In view of the investment which the project requires, the Mechanical/Electrical Engineering Consultant and the Food Technologist have had recourse to specialised suppliers of infrastructure,

machinery and equipment with relevant cost estimates required for such an investment. The table below gives a breakdown of the total project cost over the two phases.

Item	Phase 1				Phase 2			
	Potato	Palm	Deer	Total	Potato	Palm	Deer	Total
Land	1,900,000	260,000	1,180,000	3,340,000				
Reception Handling & Storage	18,490,000	1,990,000	14,182,000	34,662,000	24,599,678	1,425,210	18,032,589	44,057,477
Processing	31,716,000	3,290,000	5,199,000	40,205,000	7,649,297	3,432,548	3,986,574	15,068,420
Administration	1,350,000	670,000	5,263,000	7,283,000	1,806,605	829,700	5,152,168	7,788,473
Pre-operational Costs	1,500,000	750,000	1,500,000	3,750,000				
Working Capital	4,000,000	1,500,000	4,500,000	10,000,000				
<b>Total</b>	<b>58,956,000</b>	<b>8,460,000</b>	<b>31,824,000</b>	<b>99,240,000</b>	<b>34,055,580</b>	<b>5,687,459</b>	<b>27,171,331</b>	<b>66,914,370</b>

VI.2. The table below provides a breakdown of the pre-operational costs of the project:

Item	Potato	Palm	Deer	Total
Consultancy Fees	640,000	320,000	640,000	1,600,000
Research and Development	400,000	200,000	400,000	1,000,000
Travelling Abroad	160,000	80,000	160,000	400,000
Marketing & Launching Costs	300,000	150,000	300,000	750,000
<b>Total</b>	<b>1,500,000</b>	<b>750,000</b>	<b>1,500,000</b>	<b>3,750,000</b>

## VII. PROPOSED SOURCES OF FINANCING

VII.1. The three filières, through the MCA, have not approached the financing sources as yet. The project will be fully financed by the beneficiaries and the latter would be expecting financial assistance from international donors and financing institutions.

VII.2. The feasibility report has made recommendations on the capital structure that would be most appropriate for the venture. The report thus recommends that the debt ratio be 50 percent for the first phase, that is, the capital structure would be made up of 50 percent debt and 50 percent equity. The proposed capital structure would allow the company to benefit from a cheaper source of capital (debt) but at the same time not place it in a position where volatile cash flows can put it in financial distress. The capital structure takes into consideration the following factors:

- Given the huge investments in capital equipment, the company would in the first years end up without any taxable income to absorb any interest payment. A high debt financing is thus not an attractive option in that case.
- The company’s earnings would be quite volatile in the first years of operations as reflected by uncertainty of activity levels. Debt financing would thus put the company in an adverse position to face its commitments towards debt holders.
- The company’s assets, although tangible, are not liquid due to their specialised function. This makes debt a less attractive option as such assets could not be sold easily or sold at a reasonable price if the company finds itself in financial distress.

VII.3. It is also worth noting that local financial institutions commonly finance at parity or at a slighter higher ratio. On this basis, the project could positively envisage a 60 percent debt financing ratio although a 50 percent debt leverage would appear more prudent. In view of the substantive reserves that will be generated over the first phase period, it is proposed that the financing ratio for the second phase be 75 percent equity and 25 percent debts.

## VIII. PROJECT BENEFITS

VIII.1. The main benefits of the project would accrue to the members of the filière who would be collectively organised in the production, processing and marketing of their produce. The MCA is of the view that the setting up of the CPMU, based on a more dynamic and efficient market-orientated agricultural sector, will create the right environment to enable the sector to exploit competitive and comparative advantage at both local, regional and international levels. The project will help to enhance local production and thus help in reducing the country's dependency on food imports, contribute to food security and environment protection, strengthen the socio-economic development of rural areas and hence, participate in the national fight against poverty.

VIII.2. *Diversification Policy for Sugar Industries.* The members of the three filières are mostly sugar estates. Given the pressures imposed upon by world trade liberalization, the proposed project will provide sugar industries with a structured diversification policy whereby they would not have to rely only on the production of sugar for their survival and development. The sugar estates were looking to optimise the production of the sugar cane by-products in view of the proposed decrease in guaranteed sugar prices. Now with the setting up of the CPMU, the sugar estates will have other lines of products to tap into.

VIII.3. *Integrated Marketing and Processing Approach.* By regrouping in the CPMU, an integrated marketing and processing approach can be adopted as a result of the possibility to handle a sufficient critical mass which is much difficult to attain individually by each member. This will give the operators of all three agricultural subsectors a competitive edge in marketing their produce. The development of an effective marketing strategy, with reduced dependence on intermediaries, will imply that the produce will be able to fetch higher competitive prices. Grading, labelling, processing, post harvest technology, storage and marketing are a few examples of product specialisation which can thus be achieved given the relatively large scale of operations of the filières.

VIII.4. *Economies of Scale.* By grouping together, the CPMU will thus benefit from synergy and economies of scale effects. It will also be possible to set up a centralized computerized distribution and labelling unit as the CPMU achieves sustainable growth over the years. All these will lower cost, hence making the CPMU competitive.

VIII.5. The agricultural sector, as a whole, will benefit from the proposed project, both economically and socially.

VIII.6. *Job Creation.* The CPMU will create jobs within the agricultural and processing sectors and increase the lines of products available to the consumer community. In its first implementation phase, the project will employ some 50 people. With the proposed extension and centralisation of the filières, more job opportunities will be created. Market surveys have revealed that there is a strong demand for the proposed products and some products such as palm heart, which were deemed luxury goods, will now be accessible to a larger segment of the population.

VIII.7. ***Contributing to Food Security.*** Other than addressing the issues of quality, food norms and standards, planned production and marketing, the setting up of the CPMU will also aim at increasing production, hence reducing the country’s dependency on imports. The project will give a boost to the local agro–industry and can in the long term contribute to a sustainable reduction in the import food bill. The expected improved efficiency and competitiveness of the members of the filières also opens up export possibilities in the region.

## **IX. IMPLEMENTATION ARRANGEMENTS**

IX.1. The present structure involves the interest of various stakeholders namely the members of the filières and therefore requires a corporate structure which is at the same time flexible, dynamic and transparent. The MCA will be providing a supporting and facilitator role for this project while the filières will be responsible for the implementation of the various project components. The consultants have made recommendations on the organisation that needs to be set up, for the first phase of the CPMU, in terms of:

- the internal organisation structure and the necessity to implement specialized divisions within the CPMU
- the human resource architecture

IX.2. The model organigramme in the following page provides the most lean–effective organisational structure for the operational implementation of the CPMU. It comprises the following features:

- A centralisation of the Accounting Department, Administration & IT Department and the Marketing & Distribution Department
- Each product category, though will be monitored by a centralised Operations and Department, will have their own Reception, Handling & Storage Unit and Processing Unit.

IX.3. Mention has also been made in the organigramme for the number of people to be employed under the different functions and positions which shall be crucial to the entity in the forthcoming eventuality that the CPMU is a successful business enterprise and undertakes further expansion or ventures into other fields of activities.

IX.4. A ***General Manager*** shall be the strategic head of the CPMU and monitor the various activities and functions of the CPMU. The strategic motives and operational objectives of each function should be clearly identified and communicated to the core management team. The proposed structure consists of a core management team, which shall consist of an *Operation Manager*, a *Marketing & Distribution Manager* for the two core aspects of the CPMU, an *Accountant* and a *System Administrator*.

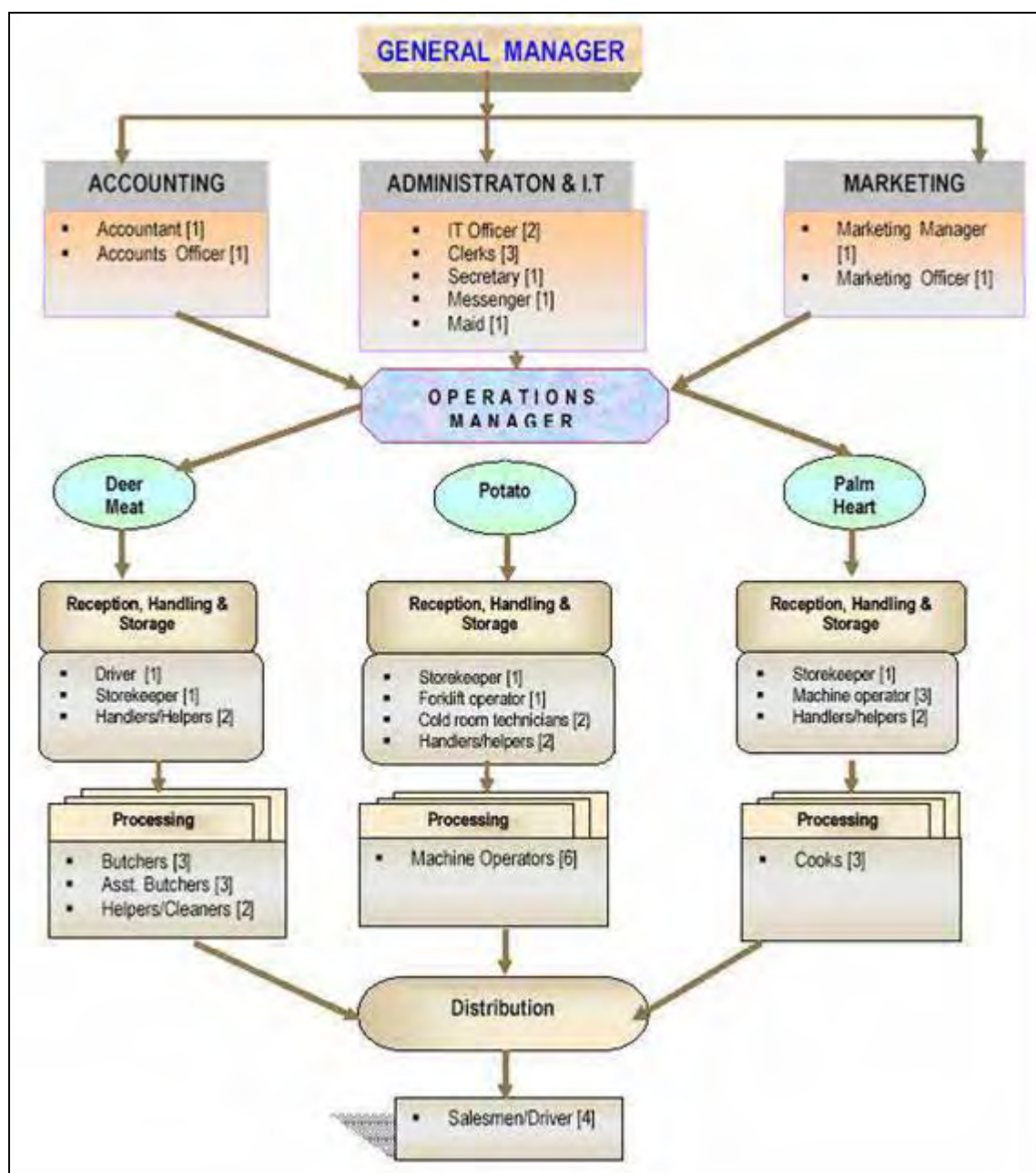


Figure 1: Model Organigramme for the Operational Implementation of the CPMU

IX.5. *The Operation Department* shall be headed by an experienced *Operations Manager* already engaged in the processing of some or all of the agricultural products to be processed by the CPMU. The human resource needs of the Operation Department, as shown below, have been derived from the project level of activity and scope of handling, storage, semi-processing and advanced processing of each product filière.

- *Deer Meat:*
  - 1 driver, 1 storekeeper and 2 handlers/helpers are needed for the reception, handling and storage of deer meat to be procured by the CPMU;

- 3 butchers, 3 assistant butchers and 2 helpers/cleaners are required at the processing level.
- Table Potato:
  - 1 storekeeper, 1 forklift operator, 2 cold room technicians and 2 handlers/helpers are needed for the reception, handling and storage of table potato procured by the CPMU;
  - 6 machine operators should be recruited at the processing level for French fries and potato chips.
- Palm Heart:
  - 1 storekeeper, 3 machine operators and 2 handlers/helpers are needed for the reception, handling and storage of palm heart;
  - 3 cooks will be required for processing the product into pickles.

IX.6. ***The Marketing & Distribution Department*** will be headed by a *Marketing & Distribution Manager* who has a strong marketing experience preferably in the agricultural or food sector. Most of the daily marketing tasks shall be carried out by a marketing officer, who shall report on a daily basis to the marketing manager. He will be responsible for customer relations and communications function as regards the CPMU’s strategic clients and major accounts. He will also be involved in sales management function like clients’ contacts, sales follow-ups, and compiling of sales and clients statistics to be used by the marketing department. Last, but not least, 4 salesmen/ driver will ensure the proper distribution of the 3 product filières.

IX.7. ***The Administration & IT Department*** will comprise of 2 IT officers who will be responsible for maintaining the IT infrastructure of the CPMU, 3 clerks to handle back office, human resource management and general administrative tasks, 1 secretary, 1 messenger and 1 maid.

IX.8. ***The Accounting Department*** shall be headed by a qualified accountant assisted by an accounts officer to handle all accounting issues of the CPMU.

## **X. TECHNICAL ASSISTANCE REQUIREMENTS**

X.1. Whilst the services of several experts such as Food Technology and Civil & Mechanical Engineering consultants have been hired for the conduct of the feasibility study, there has been no specific identification of technical assistance requirements for the project as yet. Following the submission of the feasibility report, the members of the filières have been working on the different aspects of the CPMU including the geographical location. The technical assistance requirements will be known when the filières would have completed the refinement of the propositions of the feasibility study.

X.2. The consultants have proposed, amongst others, that training courses be imparted to the operators in the fields of food handling and advance processing but at this stage of the project, it is yet to be determined whether the members of the filière will have the in-house capacities or whether the training will be outsourced. The success of the project hinges on a successful marketing strategy that would aim at creating awareness and building a brand for the produce of the filières. Whether the filières will hire the services of a marketing expert will also be determined in the later stages of the project.

## XI. ISSUES AND PROPOSED ACTIONS

XI.1. **Staffing and Training.** The proposed organisational structure, management and human resource architecture proposed above shall be called upon to evolve in response to the expected volume to be processed at the CPMU and in the second phase of the project. More people might be required in the existing departments and new cells might emerge, for instance, a scientific and technical research cell, a Market Research cell among others when the project shall reach its cruising speed with a much higher level or range of activities. A strategic human resources policy will be designed to support the project objectives of the CPMU and help the organisation attain its organisational objectives. It should among other salient issues, address a list of training courses to be provided to the operators, such as food handling and advance processing techniques for the deer, potato and palm filières.

XI.2. The plan should also spell out the organisational support to be provided to the operators to develop their skills. This could take the form of multi-skilling possibilities and job rotation practice within the workplace.

XI.3. **Marketing Strategy.** Developing a brand name for the products is key to the success of the filières. Thus the marketing strategy will initially seek to create customer awareness regarding products offered, develop the customer base and work toward building customer loyalty. Given that each product differs in maturity, it is also important to develop proper advertising strategies for each. The CPMU should seek to communicate the message that it is a high quality and professional producer for each product. This method will be communicated through a variety of methods. The first method will be advertising. Some of the advertisements can be co-branded with certain specific partners or markets. Other advertisements will be solely CPMU advertisements. The ads will be placed in both the local newspaper as well as the local food/entertainment paper.

XI.4. The message should also be communicated to the different restaurants through networking with owners and managers. Not only is there a Mauritian-based restaurant association which is a formal group of restaurants, but because Mauritius is a fairly intimate community, the CPMU will communicate its message through informal gatherings and networking with restaurant owners.

XI.5. **Regional Possibilities.** Export of venison has ceased as a result of the inability of Mauritius to conform to international food quality and safety norms. For Mauritius to be in a position to revamp its export activities, it is essential to ascertain that the appropriate slaughtering logistics are in place to ensure conformity with export norms. The project does not recommend the setting up of an abattoir at the CPMU but proposes to use the facilities at the MMA. At this stage, the low cost of slaughtering of the MMA rules out the setting up of an abattoir unit. The abattoir is embarking in a rehabilitation programme to meet the exigencies of the law and to satisfy the EU norms by the end of this year. As regards spare capacity at the MMA, there will be no problem for the latter to take on the additional slaughtering demands from intensive farming. The MMA has a capacity to process about 800 heads per normal working day and it is actually well under-utilised.

XI.6. Local production for certain products, such as potatoes, is still not sufficient for the Mauritian market itself. Thus, the Mauritian market may not yet be sufficiently mature to venture into global/regional strategies for export.

## XII. POSSIBLE RISKS

XII.1. **Participation/competition.** It is assumed that all members of the filière would participate in the venture. The financial feasibility analysis was based on the assumption that there would be a gradual intake of members in the filières as the project progresses. Competition from other stakeholders in the three sectors should also be considered. Some Sugar Estates, which do not form part of the Grouping, are ready to review their present structure and they can come up with something similar to the CPMU and increase competition. Large independent producers can also choose to supply a segment of the market independently. The filières will also be competing with established producers of processed food items, mostly overseas, and these companies have already established a well-developed distribution logistics and an established market.

XII.2. **Size and Nature of Market.** The relatively small size of the island, together with the cultural background of the Mauritian population, may act as constraints to the venture. Although market surveys have indicated the potential market for the proposed products, personal tastes and preferences will matter. Mixing certain types of cuisine with pickles or fresh palm may not always be appealing. Also, export potential for the products have to be assessed against what the competitors are currently offering. Should the filières produce mainly for the local market, the full benefits of economies of scale might not be achieved.

XII.3. For some products, the market is not mature enough to forecast a real potential and as such the market potential as revealed by the consultants’ survey may not be reflective of the real situation. The growth potential of the three filières have been estimated linearly, on the assumptions of a smooth pattern of growth. However, this may not be the case taking into account the various factors acting upon demand such as lifestyles, climate and availability of substitute products.

XII.4. **Seasonality and Vulnerability to Unfavourable Climatic Conditions.** Two filières are also adversely affected by production seasonality which are inherent: deer and table potato. They are not produced evenly over the year as the hunting period last for four months only and potatoes have to be imported during the period of January to June each year. These factors are likely to cause operational disruption in production logistics as certain facilities may remain idle.

XII.5. Palm heart and potatoes are particularly vulnerable to adverse climatic conditions compared with deer farming. Shortages of foodcrops commonly arise after the passage of cyclones so much so that the AMB has often recourse to storing potatoes. The filières need to have their contingency plans ready to address this unpredictability in production.

### XII.6. *Risks within the filières:*

- Palm heart filière
  - Palm heart is seen as a luxury product and a marketing strategy has to be devised to rebrand the product and make it accessible to a larger segment of the population. People’s taste and liking for the product will have to be developed through well-devised marketing strategies.
  - Production of palm heart is relatively limited in quantity, although minimal investment is necessary to support additional production. The problem of availability of palm heart would imply that the distribution channels need to open their doors to new dealing methods.

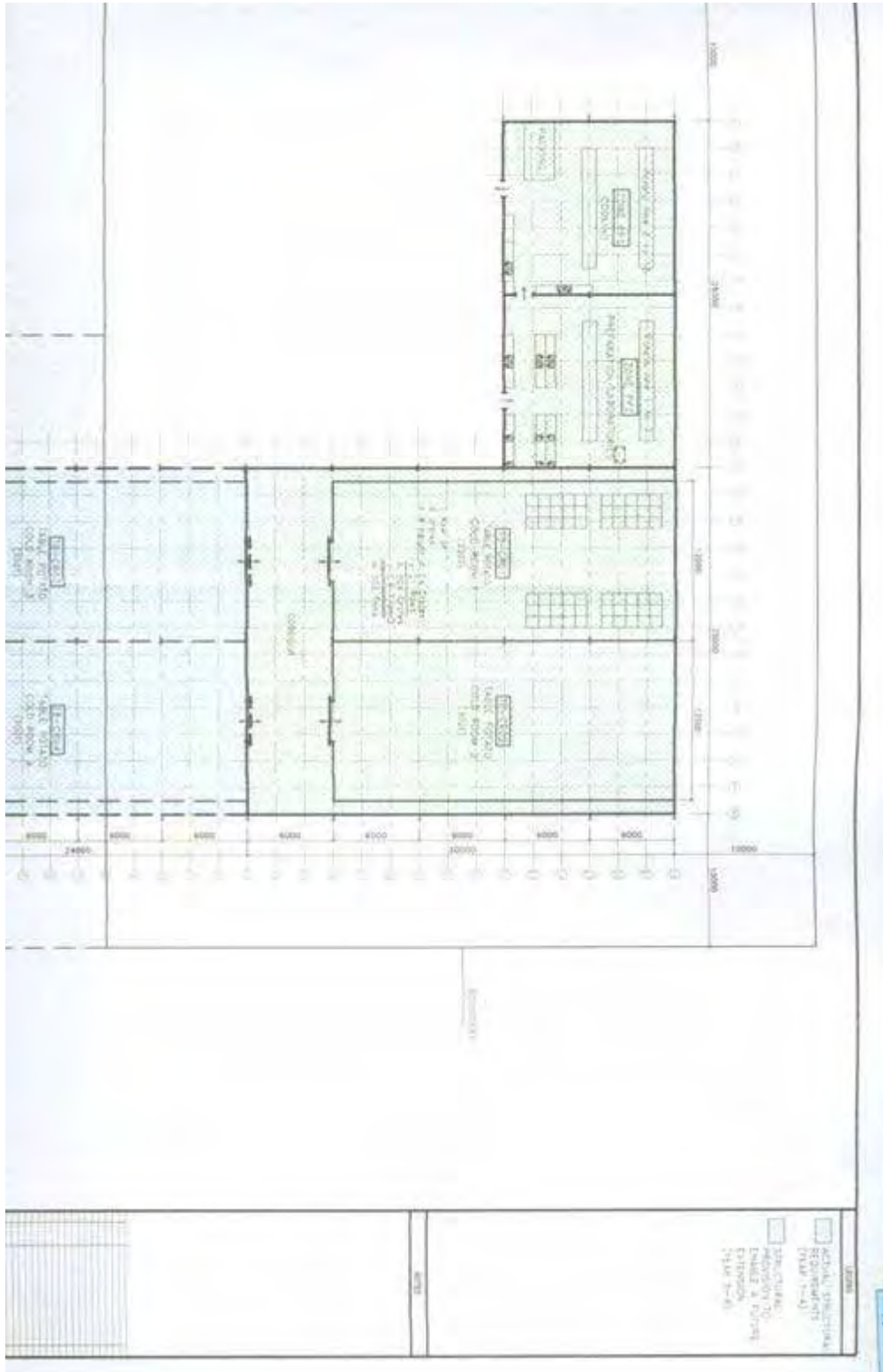


- *Deer meat filière*: One limitation of deer meat remains its uneven distribution availability on the market. During the hunting period which runs from June to December, there is a considerable volume of meat on the market compared to the off-hunting season. The investment required to develop this filière which requires high standards of food and hygiene conditions is enormous.
  
- *Potato filière*
  - The role of the AMB as a market regulator of the price and supply of potatoes is a significant issue. Although there does not exist political or restrictive controls over the production and supply chain, the emergence of a private sector unit with centralised operations may be viewed as a threat and the reaction of the AMB has to be considered with due care. Small planters are actually benefiting from government support through the Ministry (AREU) and it is essential to consider equivalent support to small-scale producers who wish to supply the CPMU. The role of the state in the business implementation process requires careful attention to ensure the existence of a suitable environment for sustainable business development.
  - The potato subsector is mature and operates in almost complete product saturation. It is particularly sensitive in terms of the constant quest by customers for innovative products

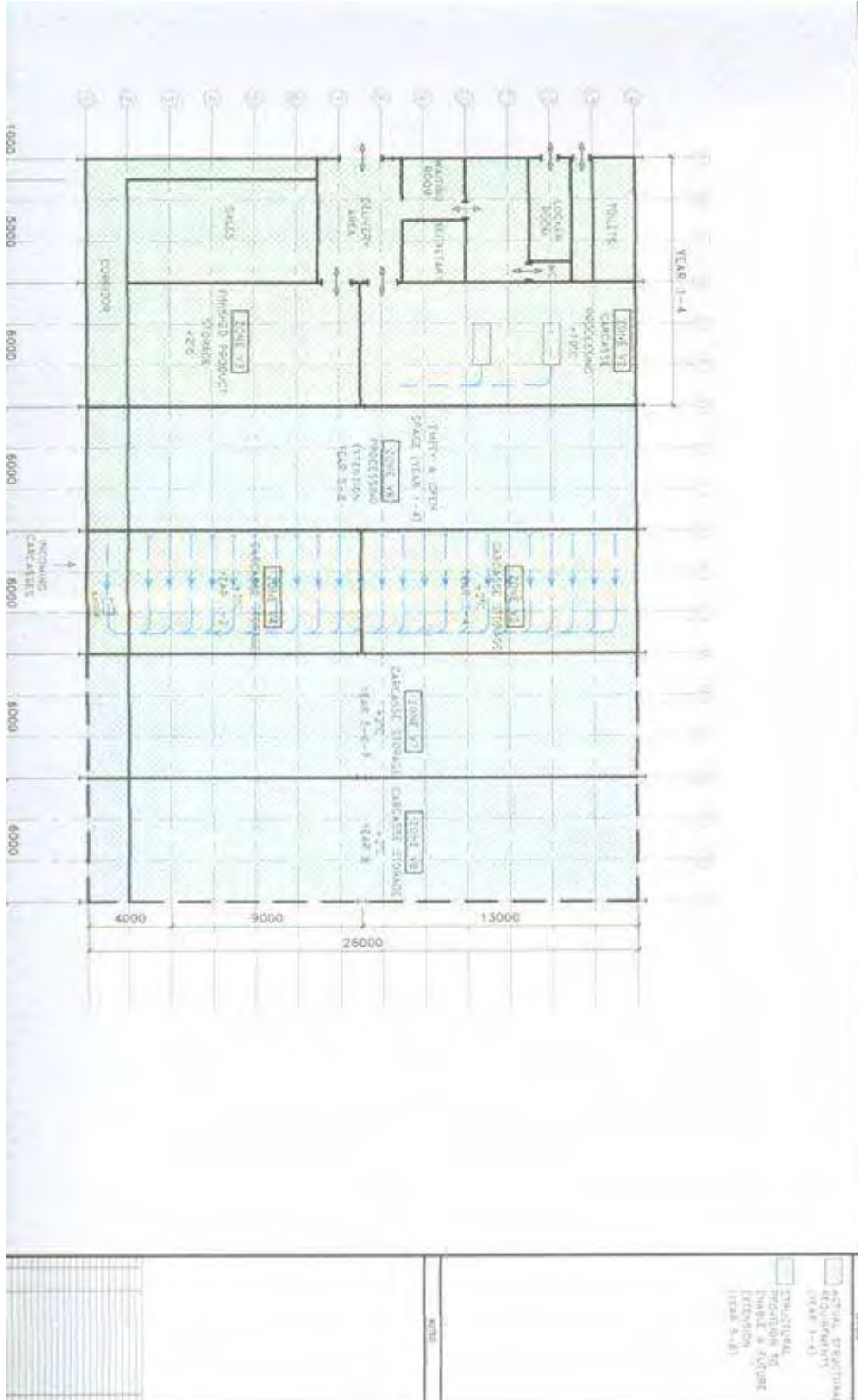


Appendix: Map of Potato, Deer Meat and Palm Heart CPMU

Table Potato



**Deer Meat:**



Palm Heart:

