

6.2.9 Credit

The demand for the agricultural credit is expected to increase due to the mass utilization of agricultural inputs and the diversification of the farm practices. Interest rate and other credit conditions are not seemed to be different after the project implementation.

The credit supplying organisations like Bank of Ceylon should increase the supplying capability. Mortgage system should be reexamined through the alteration of land ownership system.

6.2.10 Organisation

The relationship of the four kinds of committee in the project area should be strengthened in order to achieve the high target of production of agricultural products. The project area where the new products would be introduced requires the new technology and new agricultural input. The organisation of the management should play an important role for agricultural production matters.

6.2.11 Extension and Training

In Minipe Scheme, agricultural extension and training are carried out by two Agricultural Officers, three Subject Matter Officers, three Agricultural Instructors and twenty one Agricultural Extension Workers. The present agricultural plan envisages the promotion of irrigated paddy cultivation and gradual introduction of chillies and pulses with the improvement or rehabilitation of irrigation and drainage facilities. In order to achieve the objectives of the plan, it is imperative to give adequate technical guidance and training to the farmers. For an effective and useful extension and training, the followings are proposed:

- (1) Execution of joint training of personnel in charge of agricultural extension works in Minipe Scheme.
- (2) Posting of Subject Matter Officers in charge of cultivations of paddy and upland crops, soil and fertiliser and plant protection to each AO office.
- (3) Increase numbers of demonstration farms for paddy, chillies and pulses cultivations.
- (4) Distribution of a handbook for cultivating paddy, chillies and pulses to the concerned farmers.
- (5) Awarding of progressive farmers.
- (6) Exchange of opinions between personnel concerned to the agricultural extension works in Minipe and Nagadeepa Scheme.
- (7) Regular training of farmers' in the newly established water management training centre.

6. Agriculture

6.1. Present Condition

According to the classification of the world agricultural zone, Sri Lanka belongs to the intensive agriculture zone where paddy is mainly cultivated and the plantation zone where such crops as tea, rubber and coconuts are grown. Depending on the annual rainfall, the agricultural lands in Sri Lanka are also divided into the wet zone of southwest, the dry zone of northeast and intermediate zone between wet and dry zones.

The Project area is located in the intensive agricultural and intermediate zone. In many rainfall Maha, irrigated paddy cultivation is mainly, but in less rainfall Yala, most of agricultural lands is fallow, except some fruit trees, because irrigation water is lack.

The agriculture in the area is managed by owner farmers who had been introduced according to the national colonization programme since 1968.

6.1.1. Land Use

Land in the Nagadeepa Area can be grouped in five categories in terms of land use. They are;

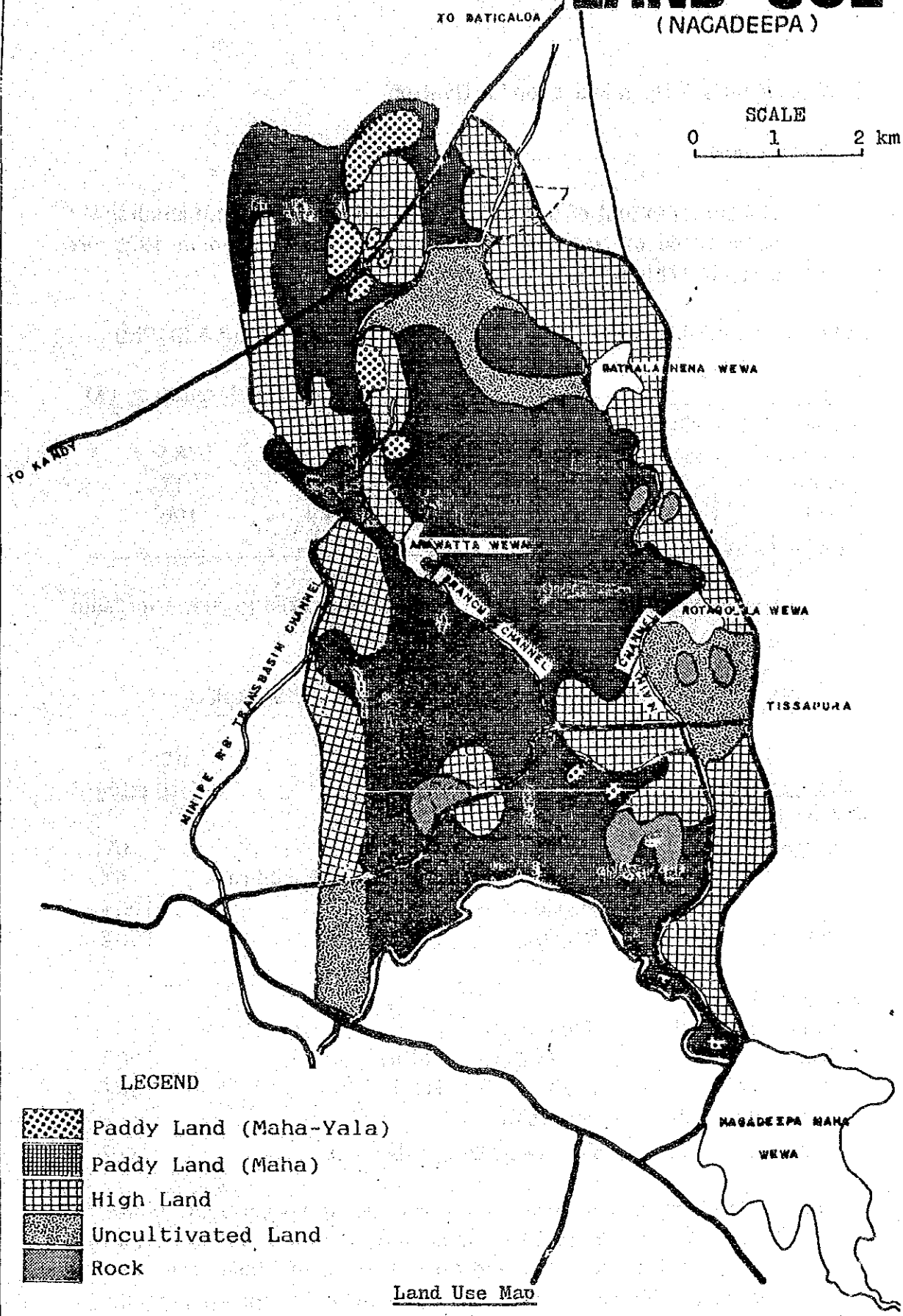
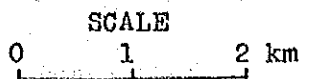
- (1) Paddy land
- (2) Highland
- (3) Uncultivated land
- (4) Rocky wasted land, and
- (5) Other land including tanks, river courses and road.

The total land area in the Nagadeepa Area Scheme is 4,630 ha. Out of the total area, 2,360 hectares or 51 percent of the total is used for agricultural purposes in 1984/85 being 1,820 ha for paddy cultivation. The remaining farm lands which are scattered in the highland are planted with upland crops.






Due to the shortage of water in the Nagadeepa tank, the paddy lands are cultivated in the area only during one season i.e. in Maha. The double cropped area is less than 6%. A map showing the paddy lands as distinct from the highlands, uncultivated land and rocky land and the extent to which the paddy lands are double cropped is at Figure 6.1.1.

LAND USE (NAGADEEPA)

TO BATICALOA



LEGEND

-  Paddy Land (Maha-Yala)
-  Paddy Land (Maha)
-  High Land
-  Uncultivated Land
-  Rock

Land Use Map

6.1.2. Cropping Pattern and Crop Cultivation

(1) General

The actual extent of asweddumized land and highland, including the homesteads of the farmers, in the Nagadeepa Area in 1985 are given in Table 6.1.1.

Table 6.1.1 ACTUAL ASWEDDUMIZED AREA AND HIGHLAND AREA IN 1985

Item	Area (ha)	Percentage (%)
Actual Assweddumied Area	-	-
Irrigated	1,513	83
Rainfed	303	17
Total	1,816	100
Highland Area	966	-

(2) The main cropping pattern in the Nagadeepa Area is shown in Table 6.1.2.

Table 6.1.2. MAIN CROPPING PATTERN IN NAGADEEPA SCHEME

Item	Mahe	Yala	Extent Estimated
A. Asweddumized Field			
Irrigated	Paddy	Paddy	0%
	Paddy	Subsidiary Food Crops	0%
	Paddy	Fallow	100%
Rainfed	Paddy	Fallow	100%
B. Highland			
Subsidiary Food Crops	Subsidiary Food Crops	Fallow	100%
Fruit Tree	Fruit	Fruit	100%
Vegetable & Other Crops	Vegetable & Other Crops	Fallow	100%

(3) In the Nagadeepa Area there are no minor irrigation works. Irrigated area was left fallow in Yala. It might also be noted that ratio of total asweddumized area to total highland area is 2 : 1, the ratio being the same as alienated paddy to alienated highland.

(4) The cropping calendar for the twelve months, May 1984 to April 1985 is given in Figures 6.1.2. In the Nagadeepa Area, it is significant that there was no cultivation as such in Yala, except fruit trees: (see Table 6.1.2). Consequently all farmers have made strong representations for irrigation water.

	May	June	July	Aug.	Set.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Remarks
Paddy	X	0-----0					X	X---X	0-0				Ploughing X-----X
Maize						X--X							Sowing 0-----0
Cowpea	X----X	0----0											
Ground Nuts													Trans-planting
Green Gram	X----X	0----0				X----X							⊙-----⊙
Chillies	X----X	⊙----⊙						X-X					Harvesting ⊙-----⊙
Soya	X----X												⊙-----⊙
Bean	0----0												
Kurra-kkan						X----X							
Manioc													

Figure 6.1.2. CROPPING CALENDAR FROM MAY 1984-APRIL 1985 IN NAGADEEPA

(5) Cultivation of Paddy

Harvested area, production and yield per ha of paddy for the Nagadeepa area from 1981 are given in Table 6.1.3. And land utilisation in 1983-1985 for the Nagadeepa Area are given in Table 6.1.4.

Table 6.1.3. HARVESTED AREA, PRODUCTION AND AVERAGE YIELD OF PADDY

Harvested Year	Maha			Yala		
	Area (ha)	Production (t)	Average Yield (t/ha)	Area (ha)	Production (t)	Average Yield (t/ha)
1981	1,659	5,807	3.5	-	-	-
1982	1,920	3,456	1.8	-	-	-
1983	1,678	5,034	3.0	-	-	-
1984	1,906	5,701	2.9	771	2,003	2.6
1985	1,588	4,839	3.0	-	-	-

Table 6.1.4. LAND UTILISATION IN 1983-1985

Harvested Year	Asweddumized Area (A) ha	Paddy Harvested Area		Total (D) ha	Ratio of Land Utilisation	
		Maha (B) ha	Yala (C) ha		D/A %	D/B %
1983	1,816	1,678	-	1,678	92.4	100.0
1984	1,816	1,966	771	2,737	150.7	139.2
1985	1,816	1,588	-	1,588	87.8	100.0

In the Nagadeepa Area, there was no paddy cultivation in Yala except in 1984 although paddy has been the most important crop in this area, nor were any other annual crops cultivated. Provision of irrigation water is absolutely necessary to promote agricultural production in this area. The chief reason for the decrease in area under irrigation (1,513 ha) as compared with alienated paddy lands (1,531 ha) is the excision of part of the paddy land necessitated by the construction of the Transbasin land.

(6) Use of Improved Varieties

The results of the survey on paddy varieties cultivated are recorded in Table 6.1.5. These paddy varieties are not different to those in the Nagadeepa Area. It is noteworthy that long 4 1/2 months varieties have been cultivated in Yala season, 1984.

Table 6.1.5. CULTIVATED AREA OF EACH MAIN VARIETY OF PADDY

Variety	1984 Yala	1984/85 Maha	1985 Yala
BG- 34-8 (3)	381	623	-
BG-276-5 (3)	68	-	-
BG- 34-6 (3 1/2)	325	143	-
BG- 94-1 (3 1/2)	45	67	-
Sub Total	759 (98%)	833 (52%)	-
BG-380-2 (4)	-	-	-
BG-11-11 (4 1/2)	5	5	-
BG-400-1 (4 1/2)	5	750	-
BG-379-2 (4 1/2)	2	-	-
Sub Total	12 (2%)	755 (48%)	-
Total	771 (100%)	1,588 (100%)	-

(7) Transplanting

Table 6.1.6. indicated the extent of land shown direct as against the extent of land transplanted.

The area cultivated by transplanting (setting seedings) was only about 31% in Maha, and about 22% in Yala, of the total cultivated area in the Nagadeepa Area in each of the seasons. If an adequate supply of water should be available, extension of transplanting would exert a strong influence on increasing yield.

Table 6.1.6. DIRECT SOWING AREA AND TRANSPLANTING AREA OF PADDY (ha)

Establishment Method	Unit	1984 Yala	1984/85 Maha	1985 Yala
Direct Sowing	ha	605	1,089	-
	%	78	69	-
Transplanting	ha	166	499	-
	%	22	31	-
Total	ha	771	1,588	-
	%	100	100	-

(8) Fertilizer Use

Results of survey on proportion of farmers using fertilizers to total farmers and average amount per ha of fertilizer (standard amount per ha X proportion of farmers using fertilizer) are given in Table 6.1.7. The proportion and average amount mentioned above in rainfed cultivation was smaller as compared with irrigated cultivation.

Table 6.1.7. AVERAGE AMOUNT OF FERTILIZER IN NAGADEEPA

Item	Unit	1984/85 Maha		1984 Yala
		Irrigated	Rainfed	Irrigated
(Nursery) VI	%	38	64	-
	kg/ha	1	1	-
(Nursery) Urea	%	66	-	22
	kg/ha	1	-	3
(Field) VI	%	44	26	74
	kg/ha	82	48	137
(Field) Urea	%	94	50	98
	kg/ha	116	62	121
(Field) TDM1	%	84	44	100
	kg/ha	104	54	124

(9) Diseases and Pests

Occurrence of main diseases and pests afflicting paddy are given in Table 6.1.8. More damage was caused by insects than by diseases.

Table 6.1.8. MAIN INJURIOUS DISEASES AND INSECTS OF PADDY

Item	In Maha Season	In Yala Season
Blast	0	X
Bacterial Leaf Blight	X	X
Bronzing	X	X
Paddy Bug	0	0
Coll Midge	0	0
Stem Borer	0	X
Brown Plant Hopper	0	0
Leaf Roller	©	©

Note : © The Most Important
0 Injurious
X Rarely

(10) Factors Influencing Yield of Paddy

Influence exercised by each factor on yield of paddy is shown in Table 6.1.9.

Table 6.1.9. INFLUENTIAL FACTOR TO YIELD OF PADDY

Item	In Maha Crop	In Yala Crop
Water	⊙	⊙
Temperature	0	0
Variety	0	0
Fertilizer	0	0
Weed	0	0
Pest	0	X
Transplanting	0	X
Ploughing	X	X

Note : ⊙ The Most Important

0 Important

X Usually

(11) Cultivation of Other Crops

Harvested area and production of subsidiary food crops are shown in Tables 6.1.10.

In Maha season these crops were cultivated under rainfed conditions while in Yala all crops were cultivated under irrigation. The yield per ha of some of crops in Yala season was the same or over it in Maha season. It is likely that there will be an increase in the cultivation of other crops if adequate irrigation should become available.

Table 6.1.10. HARVESTED AREA (A) AND PRODUCTION (B) OF MAIN SUBSIDIARY FOOD CROPS

Harvested Year		Chillies	Maize	Kurakkan	Manio	Cowpea	(t/ha)		Total
							Green Gram	Soya Bean	
1980/81	(A)	11	109	10	76	11	88	27	332
	Maha (B)	-	-	-	-	-	-	-	-
1981	(A)	-	-	-	-	-	-	-	-
	Yala (B)	-	-	-	-	-	-	-	-
1981/82	(A)	12	362	18	52	66	19	24	553
	Maha (B)	-	363	9	130	33	10	15	-
1982	(A)	-	-	-	-	-	-	-	-
	Yala (B)	-	-	-	-	-	-	-	-
1982/83	(A)	10	609	27	204	7	21	10	888
	Maha (B)	4	325	8	512	5	21	10	-
1983	(A)	-	-	-	-	-	-	-	-
	Yala (B)	-	-	-	-	-	-	-	-
1983/84	(A)	3	344	5	5	14	3	-	374
	Maha (B)	2	344	5	18	14	3	-	-
1984	(A)	28	-	-	-	142	130	19	319
	Yala (B)	20	-	-	-	140	126	16	-
1984/85	(A)	30	180	46	55	52	45	1	409
	Maha (B)	15	180	23	138	41	40	1	-

(12) Cultivation of Fruit Trees, Vegetables etc.

Cultivated area of fruit trees, vegetables and other crops are shown in Table 6.1.11.

Table 6.1.11. CULTIVATED AREA OF FRUIT TREES AND VEGETABLES AND OTHER CROPS IN 1983/84 MAHA

<u>Item</u>	<u>Area(ha)</u>
Banana	32
Mango	8
Orange	14
Lime	14
Others	1
<u>Sub Total</u>	<u>87</u>
Vegetables	33
Other crops	16
<u>Total</u>	<u>49</u>

6.1.3. Farm Size

The average cultivated area of farmers in the Nagadeepa Area was as same as the extent of their allotments as could be seen from Table 6.1.12. It would appear that there are many encroachers in the northern parts of this area, but this has not been verified.

Table 6.1.12. CULTIVATING AREA OF SOME FARMERS IN NAGADEEPA

<u>Highland Area (ac)</u>	<u>Paddy Field Area (ac)</u>						<u>Total</u>
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	
0	-	-	-	-	-	-	-
1	-	-	36	-	-	-	36
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
<u>Total</u>	-	-	36	-	-	-	36

6.1.4. Agricultural Extension and Training of Farmers

(1) Function of the Agriculture Department

In the Nagadeepa Area, agricultural extension and training for farmers are undertaken by an Agricultural Officer, two Subject Matter Officers, an Agricultural Instructor and five Agricultural Extension Workers (K.V.S.). The Agricultural Officers (A.O.) are responsible for agricultural extension and training for farmers in the area, under the overall direction of the Assistant Director Agriculture of each district. The A.O. gives directions to the Agricultural Instructors (A.I.) and the Agricultural Extension Workers (K.V.S.) who work under the A.I. The Subject Matter Officers give specialist advice to the Agricultural Officer on specific subjects such as paddy, other field crops, plant protection etc., and where it is necessary provide guidance to the field staff. The Agricultural Instructors supervise the work of, and give instructions to the Agricultural Extension Workers (K.V.S.) who are generally the officers who maintain direct contact with the farmers and are directly responsible at the field level for agricultural extension and training for farmers in the area, e.g. by conducting demonstrations and field trials and training courses for Young Farmer's Club Members. The Agricultural Instructors distribute Government certified seed to farmers, with help of the K. V. S. stationed at the A. I. 's office.

(2) Agricultural Extension and Training of Farmers

The system of agricultural extension and training adopted by the Department of Agriculture is shown as below.

A.O.(1)	-	A.I.(1)	-	Field	-	Contract	-	Follower	-	Farmers
S.M.O(2)		Office		K.V.S.		Farmers		Farmers		in general
(At Ma-		K.V.S.(1)	(5)	(30)		(180)				
hiyangan)		(At Morayaya)								

Remarks: - A.O. Agricultural Officer
 S.M.O. Subject Matter Officer
 A.I. Agricultural Instructor
 K.V.S. Agricultural Extension Worker
 (Krushikarma Viyapthie Sevaka In Sinhala)

(3) Weekly Schedule of Field K.V.S

Monday	Meeting at A.I. Office or A.O. Office
Tuesday	Conference with A.I. or A.O., Training

Wednesday	Go to meet contact farmers and follower farmers
Thursday	- Do -
Friday	- Do -
Saturday	Field trial or training of farmer
Sunday	Holiday

(4) Main Methods of Extension and Training for Farmers

As similar as Minipe (6.1.4)

6.1.5. Input Supply

The agricultural inputs in Nagadeepa Scheme are supplied mainly by the multi-purpose Co-operative society located at Mahiyangana and the Agrarian Services Centre in the Scheme itself.

In the Nagadeepa, unlike in Minipe Scheme, the main office of the Co-operative Society is not located within the scheme itself. There are five Co-operative branches in the Scheme for distribution of agricultural inputs. Branch offices which are usually managed by a single person are not in a position to provide satisfactory services. The Agrarian Services Centre located in the Scheme is performing the function of distribution of agricultural inputs.

6.1.6. Animal Power and Mechanization

(1) The results of the survey on methods of ploughing and threshing of paddy are recorded in Table 6.1.13.

Table 6.1.13 METHOD OF PLOUGHING AND THRESHING OF PADDY IN 1984/85 MAHA

Item	(Unit : %)	
	Ploughing	Threshing
Buffaloes	90	90
Manual	10	10
Tractor	0	0
Total	100	100

(2) The number of agricultural machinery owned by farmers in the Nagadeepa Area are recorded in Table 6.1.14. In the Nagadeepa Area, farmers owning agricultural machinery were somewhat less

than those in the Minipe Area. Animal power was used for ploughing and threshing of paddy, but manual labour played only a small part in such operations.

Table 6.1.14. AGRICULTURAL MACHINERY

Tractor		Sprayer		Motor Pump	Hoe	
2 Wheel	4 Wheel	Hand	Power	(Water)	Buffalo	Manua
4	5	2	1	2	Every	Farmer

6.1.7. Credit

Within the Nagadeepa Area there is only one bank to provide agricultural credit. Farmers utilise the credit supplying services whether at the Rural Bank within the Scheme or at the Bank of Ceylon Branch located in Mahiyangana.

Table 6.1.15. indicates the breakdown of items of the credit supplying services in Nagadeepa Scheme.

Since agricultural production has not been active in Yala, none of the farmers availed themselves of the credit facilities available at the Banks.

In Maha 1984/85 the Bank of Ceylon gave loans for agricultural purposes to 131 farmers, amounting to Rs. 308,438 at 9% interest per annum.

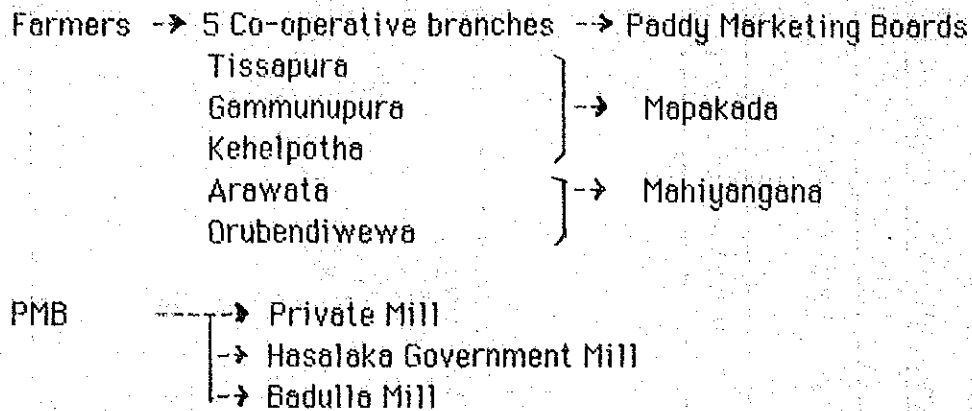
Table 6.1.15 TOTAL CREDIT TO NAGADEEPA FARMERS AND NON-FARMERS

PURPOSES	BANK OF CEYLON at Mahiyangana	PEOPLE'S BANK	RURAL BANK at Nagadeepa
	1984/85 Maina 1985 Yala	1984/85 Maha 1985 Yala	1984/85 Maha 1985 Yala
1. Cultivation Equipment Kubota Wheel Tractor	Rs. 35852 1 Farmer		6,000.00 Farmers (2)
2. Building House	-		-
3. Animal purchases	-	Rural Bank is a Branch Office	-
4. (1) & preparation seeds transplanting weediside (Agricultural Credits)	Rs. 308,438 131 Farmers 262 Acreage		46,448.25
5. Rural Industries	-		-
6. Others	-		3,000.00
7. Insurance	144 each/acre x 262 Rs. 37,728.00		-

SOURCE : Bank of Ceylon at Mahiyangana
Rural Bank at Nagadeepa

6.1.8. Marketing and Processing

In Yala agricultural activities are negligible because of the water shortage. But in Maha, paddy which is the main product in the Scheme is marketed as shown in the chart below.



The price is 2.99 Rs/kg when farmers sell to the Co-operative and 3.09 Rs/kg if they take their paddy direct to PMB. There is no PMB store in the Nagadeepa Scheme. The Co-operatives fill this void. The paddy collected by the Co-operative is sent to the PMB stores at Mapakada and Mahiyangana both of which do not have milling facilities.

The paddy is milled at small scale private mills or transported to mills in Hasalaka and Badulla. During the recent years there have been no purchases in Yala season except in the year 1984.

The fluctuation of the quantity of paddy purchased has ranged from 92 tons in 1982 to 1039 tons in 1983 and that too in Maha season. This is evident from Table 6.1.16.

Table 6.1.16 PADDY MARKETTING AMOUNT THROUGH CO-OPERATIVE
(NAGADEEPA)

YEAR & THE NAME OF THE VILLAGE		MAHA CROP	YALA CROP
1980	Tissapura	581790	NIL
	Oru-Bendiwewa	341052	NIL
	Gemunupura	411927	NIL
	Keselpotha	320400	NIL
	Arawatta	164405	NIL
Total Nagadeepa		1819574 Kgs.	-
1981	Tissapura	136920	NIL
	Oru-Bendiwewa	97970	NIL
	Gemunupura	38720	NIL
	Keselpotha	79800	NIL
	Arawatta	30970	NIL
Total Nagadeepa		384400 Kgs.	-
1982	Tissapura	76300	NIL
	Oru-Bendiwewa	NIL	NIL
	Gemunupura	11780	NIL
	Keselpotha	4900	NIL
	Arawatta	NIL	NIL
Total Nagadeepa		92980 Kgs.	-
1983	Tissapura	400021	NIL
	Oru-Bendiwewa	134418	NIL
	Gemunupura	220115	NIL
	Keselpotha	78787	NIL
Total Nagadeepa		1039582 Kgs	-
1984	Tissapura	66800	15062
	Oru-Bendiwewa	28420	NIL
	Gemunupura	91050	NIL
	Keselpotha	NIL	9840
	Arawatta	7300	NIL
Total Nagadeepa		193570 Kgs.	24902 Kgs.
1985	Tissapura	105450	
	Oru-Bendiwewa	29641	
	Gemunupura	50100	
	Keselpotha	20970	
	Arawatta	34158	
Total Nagadeepa		240409 Kgs.	

SOURCE: Co-operative Main Office at Mahiyangana

6.1.9. Prices of Agricultural Products

In Nagadeepa Scheme, the main agricultural products are purchased by the Co-operatives. The Co-operatives' purchasing prices are the same as those of Co-operatives in the Minipe Scheme.

There are only a few private traders, but even their trading activities have been restricted by the fact that there is no cultivation in Yala.

6.1.10. Farm Budget

Farmer's income per ha of paddy is shown in Table 6.1.17-(1)-(3).

Table 6.1.17.-(1) COST AND RETURN OF THE PRODUCTION OF PADDY
(IRRIGATED & RAINFED) 1984/85 MAHA AND 1984 YALA

Item	Unit	Irrigated		Rainfed	
		1984/85	1985	1984/85	1985
		Maha	Yala	Maha	Yala
Average Yield	(t/ha)	3.2	2.6	2.0	-
Average Price	(Rs/kg)	2.99	2.99	2.99	-
Gross Return	(Rs/kg)	9,568	7,774	5,950	-
Cost of Cultivation					
Including Farm Labour	(Rs/ha)	7,546	7,888	4,134	-
Cost of Cultivation					
Excluding Farm Labour	(Rs/ha)	5,890	5,592	2,838	-
Net Return Including Farm Labour	(Rs/ha)	2,022	- 114	1,846	-
Net Return Excluding Farm Labour	(Rs/ha)	3,678	2,182	3,142	-
Net Return per Man-day	(Rs)	11	-	15	-

Table 6.1.17.-(2) COST OF INPUT MATERIALS

Item	Unit	1984/85 Maha		1984 Yala
		Irrigated	Rainfed	Irrigated
Seed	(kg/ha)	99	77	97
Cost	(Rs4.63/kg)	458	357	449
VI	(kg/ha)	83	49	137
Cost	(Rs2.955/kg)	245	145	405
Urea	(kg/ha)	117	62	124
Cost	(Rs2.875/kg)	336	178	357
TDMI	(kg/ha)	104	54	124
Cost	(Rs2.956/kg)	307	160	367
Pesticide Cost		(92)	(60)	(92)
		302	198	494
Weedicide Cost		(16)	-	-
		154	-	-
Total (A)		1,802	1,038	2,072

Table 6.1.17.-(3) COST OF DRAUGHT, POWER, MACHINERY, EQUIPMENT, WATER CHARGE AND CULTIVATION FEE

Item	1984/85 Maha		1984 Yala
	Irrigated	Rainfed	Irrigated
Total Man-days	23-190	18-126	28-168
Cost	4,370	2,268	4,704
Total Family Labour Used	72	72	82
Cost	1,656	1,296	2,296
Buffalo etc. Cost	1,112	828	1,112
Water Charge Cost	247	-	-
Cultivation Fee	15	-	-
Total (B)	5,744	3,096	5,816
Total (A)	1,802	1,038	2,072
Total C = (A) + (B)	7,546	4,134	7,888
Total D Excluding Farm Labour	5,890	2,838	5,592

6.2 Agricultural Plan

6.2.1 Basic Policy

(1) Characteristics of the Project

The Project envisages the rehabilitation of existing irrigation and drainage facilities. It is clearly distinguished from other agricultural development projects in Sri Lanka, which mostly aim the development of new farm lands. In such projects, agricultural development plans are newly and rather freely established taking into account the natural, economic and social conditions in and around the project area. In the proposed Project area, however, the land has been fully developed and cultivated by many farmers for long years. It is noted as the most important characteristic of the Project that an agricultural plan should be set up with due regard for the prevailing agriculture in the area. It would not be useful or even be harmful to make an agricultural plan for the Project disregarding the existing farming practices.

The Project includes the improvement of road networks and rural water supply system as well as the rehabilitation of irrigation and drainage facilities. It is expected that the considerable impact could be given to the agricultural development of the area by improving such social infrastructures. However, the main constraint of agriculture in the area is the shortage of available irrigation water. Especially in Yala season, water is definitely short due to less rainfall. Accordingly, the agricultural plan to be set up for the Project should aim the maximum use of limited water.

(2) Basic Policy

The main crop in the Nagadeepa Scheme is paddy. It is cultivated mostly under irrigated condition in Maha season. Other crops grown in Maha season are subsidiary food crops, fruit trees and vegetables. These crops are cultivated under rainfed condition. Because of lack of water in Yala season, any crops except fruit trees are not usually cultivated. After the Project is accomplished, however, irrigation water would become available and crops would be cultivated even in Yala season.

Taking both the actual agricultural conditions and the characteristics of the Project into accounts, the proposed agriculture plan is to be established based on an irrigated agriculture.

The main reasons of present water shortage are unlegal land reclamation by settlers and encroachers, and the deterioration of irrigation facilities. Therefore, it should be prohibited to reclaim new irrigated paddy fields in future in the Nagadeepa Scheme.

Proposed crops for the Project are to be selected taking into considerations the present agricultural conditions in the area, social needs and contribution to the increase of farmers' income. As a result of due considerations, paddy, chillies and pulses (cowpea, green gram and soya bean) are chosen as the proposed crops for irrigated agriculture.

Paddy is the main crop in Sri Lanka and most farmers eagerly desire the cultivation of paddy. Under irrigated condition, productivity of paddy is relatively high and its yield is stable compared with other crops. The increase of paddy production is still ranked as the top priority of the national policy, though the import of paddy has been decreased in recent years. Therefore, paddy should be cultivated in all the irrigated area in Maha season.

In order to save and use the limited water most effectively, it is recommended to introduce the cultivation of chillies and pulses to the paddy field newly irrigated in Yala season. In normal years, no crops except fruit trees are cultivated in Yala season, because no water is available. In 1984, however, water was exceptionally available in Yala season and chillies and pulses were cultivated experimentally with paddy. The introduction of chillies and pulses was carried out with a main object of saving irrigation water. Chillies are the most important flavoring of Sri Lanka curry cooking and pulses are also the main food for supplying protein. Though the production of these crops has been increased in recent years, it has still not fulfilled the domestic needs. Thus, the prices of these crops change over relatively high level. The cultivation of chillies and pulses will contribute to the increase of farmers' income and also coincide to the national policy of promoting multiple agriculture.

6.2.2 Cropping Pattern

As described in the previous section, paddy, chillies and pulses (cowpea, green gram and soya bean) are the main crops under the Project. The cropping pattern of these crops are proposed to be as follows.

- (1) In Maha season, paddy is to be cultivated in all the Project area.
- (2) In Yala season, the cultivation of subsidiary food crops is to be gradually increased up to 20% of the total area by the sixth year after the completion of the Project.
- (3) The ratio of cultivation of subsidiary food crops should be chillies 50% and pulses 50%. The cultivated areas of cowpea, green gram and soya bean should be the same.
- (4) In and after the target year, the proposed cropping patterns are (i) single crop of paddy annually on 80% of the irrigated land (in Maha season only), (ii) paddy-chillies on 10% and (iii) paddy-pulses on the remaining 10% of the land.
- (5) The cultivation of subsidiary food crops should be increased gradually. Within six years after the completion of construction works, the cultivated area of such crops should reach to the target area. (see Table 6.2.1)
- (6) In a year exceptionally favoured with ample water, cultivation of paddy will be most recommendable in Nagadeepa Scheme. However, such year is very rare and it is impossible to forecast when such year will come. It is, therefore, disregarded to include the cultivation of paddy in Yala season from the agricultural plan.

Tabel 6.2.1 CROPPING SCHEDULE (MAHA, YALA) IN NAGADEEPA SCHEME

Cropping Pattern	(ha)						
	Actual 1984- 1985	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
A1) Irrigated Area	1,791	1,791	1,791	1,791	1,791	1,791	1,791
Paddy - Paddy	771	0	0	0	0	0	0
Paddy - S.f.c	319	60	120	180	240	300	360
Paddy - Fallow	701	1,731	1,671	1,611	1,551	1,491	1,431
A2) Rainfed Area	25	25	25	25	25	25	25
Paddy - Fallow	25	25	25	25	25	25	25
Others	0	0	0	0	0	0	0
B) Highland Area	966	966	966	966	966	966	966
S.f.c - Fallow	409	409	409	409	409	409	409
Fruit Tree	89	89	89	89	89	89	89
Vegetable etc.							
- Fallow	49	49	49	49	49	49	49
Others	419	419	419	419	419	419	419
Total Area	2,782	2,782	2,782	2,782	2,782	2,782	2,782

For the cultivation of the proposed crops, the following cultivation methods are recommended.

- (1) Certificated seeds by the Government should be obtained and used, as a rule, once in four years for paddy and in every year for subsidiary food crops.
- (2) New improved variety of paddy should be used. The long and short growing period varieties should be used in Maha and Yala seasons, respectively.
- (3) Seedling of paddy and chillies should be transplanted. Pulses are to be direct sowing.
- (4) Application of fertilizer and agro-chemicals should follow the recommendations by the Government.
- (5) Farmers should obey the decisions on farming practices by each Committee and respect the advices derived from Agricultural Instructors and Agricultural Extension Workers concerned.
- (6) Improvement of cultivation methods concerning to the variety of crops, establishment method, application of fertilizer and agro-chemicals should be accomplished within six years after the

completion of the construction works.

The proposed cropping patterns are shown in the following figure.

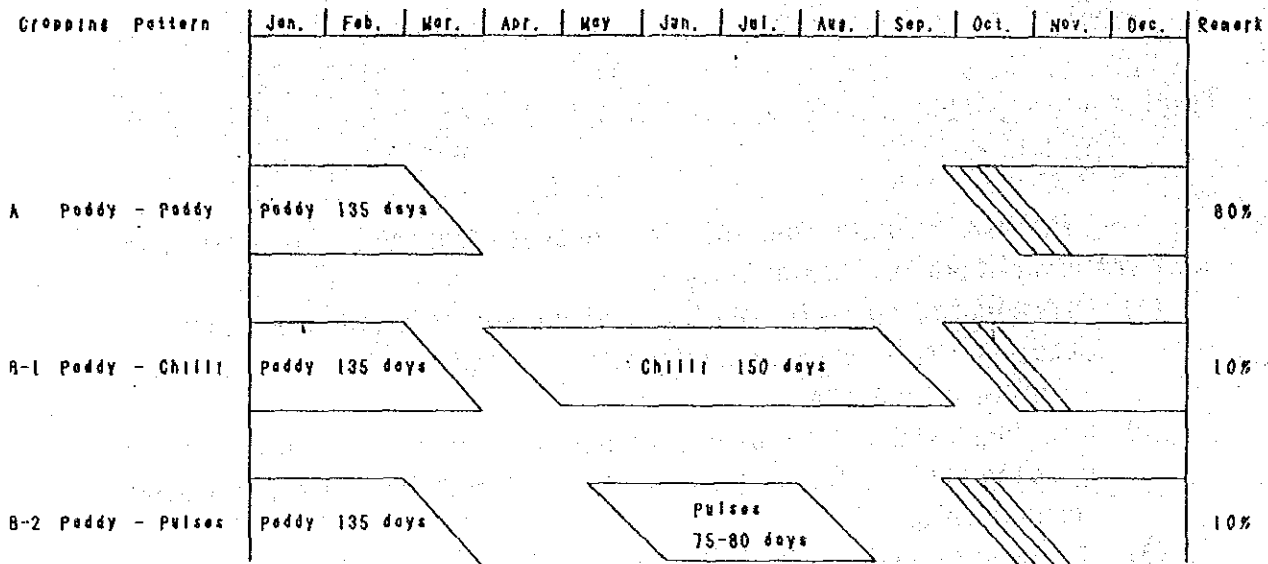


Figure 6.2.1 PROPOSED CROPPING CALENDAR

6.2.3 Target of Production

(1) Target of Yield

With the completion of the proposed construction works, the yield of each crop in a normal year in Nagadeepa Scheme is estimated below, taking into considerations the existing agricultural conditions, completion of irrigation and drainage facilities, introduction of improved cultivation methods as well as the results of experimental farming.

Table 6.2.2 Target Yield of Each Crop

Name of Crop	Season	Present Yield (t/ha)*	Target Yield (t/ha)
Paddy	Maha	2.8	5.0
Chilli	Yala	0	1.6
Cowpea	Yala	0	1.8
Green Gram	Yala	0	1.6
Soya Bean	Yala	0	1.7

* : The figures show the average values of 1981-85.

The target yield of each crop is expected to be achieved within six years after the completion of construction. The estimated yields during the transitional years are shown in Table 6.2.4.

(2) Target of Production

The crop productions in Nagadeepa Scheme in and after the target year are estimated as shown in the following table.

Table 6.2.3

CROP PRODUCTION

Crop	Season	Actual (1981-1985) *			Target Year		
		Area (ha)	Yield (t/ha)	Production (t)	Area (ha)	Yield (t/ha)	Production (t)
Paddy	Maha	1,609	2.83	4,553	1,791	5.00	8,955
	Yala	0	-	-	0	-	-
	Total	1,609	2.83	4,553	1,791	5.00	8,955
Chilli	Yala	0	-	-	180	1.6	288
Cowpea	Yala	0	-	-	60	1.8	108
Green Gram	Yala	0	-	-	60	1.6	96
Soya Bean	Yala	0	-	-	60	1.7	102

* Source : Kachcheri Office at Badulla and Nagadeepa A I Office Area.

Table 6.2.4

SCHEDULE OF CROP PRODUCTION IN NAGADEEPA

Irrigated Area	Actual		After Rehabilitation					
	1984	1985	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
Unit Production	1985	1985	1985	1985	1985	1985	1985	1985
Production Value (ha)	1,563	1,609	1,791	1,791	1,791	1,791	1,791	1,791
Maha (t/ha)	3.16	2.83	3.94	4.20	4.45	4.65	4.84	5.00
(t)	4,939	4,553	7,057	7,522	7,970	8,328	8,668	8,955
Paddy (ha)	771	0	0	0	0	0	0	0
Yala (t/ha)	2.60	-	-	-	-	-	-	-
(t)	2,005	-	-	-	-	-	-	-
Total (t)	6,944	4,553	7,057	7,522	7,970	8,328	8,668	8,995
(ha)	28	0	30	60	90	120	150	180
Chillie Yala (t/ha)	0.8	-	0.9	1.1	1.2	1.3	1.5	1.6
(t)	22	-	27	66	108	156	225	288
Cowpea (ha)	142	0	10	20	30	40	50	60
Yala (t/ha)	1.0	-	1.1	1.3	1.4	1.6	1.7	1.8
(MI-35) (t)	140	-	11	26	42	60	85	108
Green (ha)	130	0	10	20	30	40	50	60
Gram Yala (t/ha)	1.0	-	1.1	1.2	1.3	1.4	1.5	1.6
(MI-4) (t)	126	-	11	24	39	56	75	96
Soya (ha)	19	0	10	20	30	40	50	60
Bean Yala (t/ha)	0.8	-	1.0	1.1	1.3	1.4	1.6	1.7
(PB-1) (t)	16	-	10	22	39	56	80	102

6.2.4 Market Prospects and Prices

After the implementation of this rehabilitation project, the agricultural products will be purchased by the co-operatives and private traders. Agricultural products can easily be carried out from the project area due to the road rehabilitation. Access to the market should become considerably better. Paddy, chillie, cowpea, green gram and soya bean will be widely transported to the other districts.

For the prices of these products, the supported prices by Government has been applied and will be so in the future. The prices can't be decided through this project. The supply and demand of highland products are apt to be tight. There should be no price decrease with the implementation of this project.

6.2.5 Input Supply

The present agricultural input supply such as seed, fertilizer and agro-chemicals is as follows.

Table 6.2.5 SEED RATE AND PRICE

Item	Seed Rate (kg/ha)	Price(Rp/kg)	Remark
Paddy	52	4.63	Transplanting Cultule (1ba/ac)
Chilli	1.1	150	" (1ba/ha)
Cowpea	28	16	" (25ba/ha)
Green Gram	28	16	" (25ba/ha)
Soya Bean	67	12	" (60ba/ha)

Table 6.2.6 APPLICATION OF FERTILIZER FOR CROPS

Crops	Fertilizer Farmers Use	Use Volume	Price
Paddy	Nursery Basal V1	62.5 kg/ha	147.75/50kg
	Nursery Urea	12.5 kg/ha	143.75/50kg
	Field Basal V1	185 kg/ha	147.75/50kg
	Field Urea	124 kg/ha(Maha) 93 kg/ha(Yala)	143.75/50kg
	Field TDMI	124 kg/ha	147.80/50kg
Chillies	N:13, P:11, K:06 Special Chillie Fertilizer Mixture	N:13, P:11, K:06 Special Fertilizer Mixture :	
	Basal	187 kg/ha	
	After 14 Days	93 Kg/ha	
	After 28 Days	93 kg/ha	
	After 42 Days	187 kg/ha	170.50/50kg
	After 56 Days	93 kg/ha	
	After 70 Days	187 kg/ha	
Cowpea	Basal N:06, P:25, K:18 Urea	250 kg/ha Apply into Flowering Stage 30 kgs. Urea	150.00/50kg 143.75/50kg
	Basal N:06, P:25, K:18 Urea	250 kg/ha Apply into Flowering Stage 30 kg/ha	150.00/50kg 143.75/50kg
Soya Bean	Bassal - V	125 kg/ha	147.75/50kg
		After 2 - 4 Weeks 62 kg/ha	143.75/50kg

Table 6.2.7 MAIN DISEASES AND INSECTS OF PADDY AND CHEMICALS (1)

Diseases & Insects	Control Chemicals	Optimum Dose	Price per Unit
Paddy Blast	50% Edinphenphos EC (Hinosan)	27ml+Water27ml	1 liter/ha Rs. 390/=
	50% Benomil(Berlate)	28g+Water37 liter	Rs. 342/+
Sheath Blight	-do-	-do-	-do-
Sheath Rot	-do-	-do-	-do-
Brown Plant Hopper	Carbo Furer 3% Granulas	22 kg/ha	Rs. 715/=
	Propoxul 20% EC	1,000 cc/ha	Rs. 230/=
	B.P.M.C 50% EC	1,400 cc/ha	Rs. 240/=
	M.I.P.C 50% WP	2.25 kg/ha	Rs. 250/=
Paddy Bug	Carbasunpen 2% Dust	22 kg/ha	Rs. 220/=
	Diazinone 40% EC	1,600 ml/ha	Rs. 280/=
	Fenthon 50% EC	2,100 ml/ha	Rs. 230/=
Rice Leaf Folder	Monocrotophus 60% EC	1,300 ml/ha	Rs. 325/=
Leaf Roller	Chlorpyripos 20% EC	1,650 ml/ha	Rs. 360/=
	Fenthion 50% EC	2,100 ml/ha	Rs. 380/=
Rice Collmidge	Carbofuran 3% Granuls	22 kg/ha	Rs. 715/=
	Diazinon 5% Granuls	22 kg/ha	Rs. 715/=
Rice Thrips	Cuinalphos 25% EC	700 ml/ha	Rs. 120/=
	Dimethoate 40% EC	700 ml/ha	Rs. 130/=
	Fenthon 50% EC	700 ml/ha	Rs. 130/=
	Diazinone 40% EC	700 ml/ha	Rs. 130/=
Stem Borer	Carbofuran 3% Granuls	22 kg/ha	Rs. 715/=
	Diazinon 5% Granuls	22 kg/ha	Rs. 715/=
	Monocrotophus 60% EC	725 ml/ha	Rs. 250/=
	Endosalfan 35% EC	100 ml/ha	Rs. 300/=
Rice Caterpillar	Chlorpyripos 20% EC	1,750 ml/ha	Rs. 400/=
	Fenthon 50% EC	2,100 ml/ha	Rs. 450/=
	Monocrotophus 60% EC	1,400 ml/ha	Rs. 425/=
Rice Pentato Mid Bug	Fenthion 50% EC	2,100 ml/ha	Rs. 450/=
	Trichloyphose 80% WSP	1,120 g/ha	Rs. 380/=
Rice Stem Fly	Trichlorpon 80% WSP	1,800 g/ha	Rs. 600/=
Rice Short Maggot	Carbofuran 3% Granuls	37 kg/ha	Rs.1100/=
	Diazinon 5% Granuls	22 kg/ha	Rs. 715/=
	Diazinon 40% EC	1,050 ml/ha	Rs. 325/=

Note : '=' is equivalent to 18g/ha.

Table 6.2.8 MAIN DISEASES AND INSECTS OF CROPS AND CHEMICALS (2)

Crops	Diseases & Insects	Control Chemicals	Optimum Dose	Price per Unit
Chillies	White Fly	Dimethoate 40% EC	1,100 ml/ha	Rs. 375/=
		Demeton Methyl 25% EC	1,100 ml/ha	Rs. 375/=
	Apphids	Dimethoate 40% EC	1,100 ml/ha	Rs. 375/=
		Demeton Methyl 25% EC	1,100 ml/ha	Rs. 375/=
	Mites	Carbopethion 20% EC	1,100 ml/ha	Rs. 350/=
		Dicopole 40% EC	1,100 ml/ha	Rs. 340/=
	Plant Thrips	Quinalphos 25% EC	1,200 ml/ha	Rs. 375/=
		Dimethoate 40% EC	1,100 ml/ha	Rs. 375/=
	Pod Borers	Quinalphos 25% EC	1,200 ml/ha	Rs. 375/=
		Diamethoate 40% EC	1,100 ml/ha	Rs. 375/=
		Fenthion 50% EC	1,200 ml/ha	Rs. 375/=
	Chillie Leaf Curl	Monocrotophus 60% EC	1,400 ml/ha	Rs. 400/=
		With Water Wettable Sulphur	2 kg/ha	Rs. 70/=
	Anthrachose	Mancoseb	2 kg/ha	Rs. 540/=
Maneb		2 kg/ha	Rs. 540/=	
Coller Rot	Captax	2 kg/ha	Rs. 280/=	
Leaf Spots	Mancoseb	2 kg/ha	Rs. 540/=	
	Maneb	2 kg/ha	Rs. 540/=	
Cowpea	Agromiza Fly (Bean Fly)	Demeton Methyl 25% EC	2,100 ml/ha	Rs. 625/=
		Monocrotophus 60% EC	2,100 ml/ha	Rs. 625/=
	Pod Borers	Methomidophus 50% EC	2,100 ml/ha	Rs. 625/=
		Monocrotophus 60% EC	2,100 ml/ha	Rs. 625/=
	Leaf Eating Caterpillars	Monocrotophus 60% EC	2,100 ml/ha	Rs. 625/=
		Demeton Methyl 25% EC	2,100 ml/ha	Rs. 625/=

Note : 1) "=" is equivalent to 18g/ha .

2) Green Gram and Soya Bean have the same diseases, insects and treatments as Cowpea crops abovementioned.

6.2.6 Labour Requirements

Labour required for cultivating each crop is summarized in the following table. Considering the existing conditions of farm families in the Nagadeepa Scheme, it is estimated that the required labour can be supplied within a farm family.

Table 6.2.9 Labour Requirements for the Cultivation of Crops
(man-day/ha)

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Paddy	10	7	77						7	79	10	10	200
Chilli			15	106	124	81	81	193	114				714
Cowpea					60	27	25	45					157
Green gram					60	27	25	45					157
Soya bean					63	34	32	45					174

6.2.7 Farm Power

As same as the Minipe Scheme, many buffaloes and cattle are bred by farmers in the Nagadeepa Scheme and most farm operations are carried out by using animal power. The present agricultural plan envisages the intensive use of paddy fields. Subsidiary food crops are to be introduced in Yala season on 20% of paddy fields. The time of operations of such crops differs from each other. Thus the present animal power will cope with the animal power required for the cultivation of subsidiary crops.

6.2.8 Farm Budgets

Based on the agricultural plan, the gross income of the standard farmer of holding 0.8 ha (2 ac) of paddy field is estimated as shown in Table 6.2.10. The farm budgets of respective crops are summarized in Table 6.2.11 - 15.

**Table 6.2.10 ESTIMATED GROSS INCOME FOR STANDARD FARMERS
IN NAGADEEPA**

(Irrigated Area : 2ac=0.8ha)				
Item	Area (ha)	Yield (kg)	Unit Cost (Rp)	Gross Income (Rp)
Actual				
Maha Paddy	0.80	2,264	2.99	6,769
Yala Paddy	0.00	0	2.99	0
Chilli	0.00	0	37.0	0
Pulse	0.00	0	13.5	0
Sub Total	0.00	0		0
Total (A)	0.80	2,264		6,769
Target				
Maha Paddy	0.80	4,000	2.99	11,960
Yala Paddy	0.00	0	2.99	0
Chilli	0.08	128	37.0	4,736
Pulse	0.08	136	13.5	1,836
Sub Total	0.16	264		6,572
Total (B)	0.96	4,264		18,532
(B)/(A)				2.7 times

Table 6.2.11 GROSS INCOME, PRODUCTION COST, FARMER'S PROFIT AND INCOME OF PADDY IN MAHA IN NAGADEEPA

	Actual (1981-1985)			Target Year			Remark
	Item	Unit Price (RP)	Amount (RP)	Item	Unit Price (RP)	Amount (RP)	
Gross Income	2,830kg	2.99	8,462	5,000kg	2.99	14,950	(+6,488)
Production Cost							
Seed Cost	99kg	4.63	458	52kg	4.63	241	Transplanting Cultivation (1 bu/ac)
Fertilizer Cost							Nursery Field (kg) (kg)
V1	83kg	2.955	245	247.5kg	2.955	731	V1 62.5 185
U	117kg	2.875	336	136.5kg	2.875	392	U 12.5 124
T	104kg	2.956	308	124.0kg	2.956	367	T 0 124
Agriculture Chemicals Cost			456			816	Add 360 RP Chemicals For Preventing From Leaf Roller
Labour Cost	190	23	4,370	204	23	4,692	
Livestock Cost			988			988	
Water Charge			247			247	
Cultivation Fee			15			15	
Sub Total			7,422			8,489	(+1,067)
Farmer's Profit			1,040			6,461	(+5,421)
Cost of Family							
Labour	72	23	1,656	79	23	1,817	
Farmer's Income			2,696			8,278	(+5,582)

Table 6.2.12 GROSS INCOME, PRODUCTION COST, FARMER'S PROFIT AND INCOME OF CHILLI IN YALA IN MINIPE & NAGADEEPA

	Actual (1981-1985)			Target Year			Remark
	Item	Unit Price (RP)	Amount (RP)	Item	Unit Price (RP)	Amount (RP)	
Gross Income	900kg	37.00	33,300	1,600kg	37.00	59,200	(+25,900)
Production Cost							
Seed Cost	1.4kg	150	210	1.1kg	150	165	Transplanting Cultivation (1 bu/ac)
Fertilizer Cost(N,P,K)	419kg	3.41	1,429	933kg	3.41	3,182	
Agriculture Chemicals Cost			910			2,770	Insecticides @ 375RP X 2 Fungicides @ 505Rp X 4
Labour Cost	351	24	8,424	714	24	17,136	
Livestock Cost			85			1,700	5days/time X 3 times X 100 RP = 1,500 RP Others 200 RP
Water Charge			0			0	
Cultivation Fee			0			0	
Sub Total			11,056			24,953	(+13,895)
Farmer's Profit			22,242			34,247	(+12,005)
Cost of Family							
Labour	188	24	4,512	390	24	9,360	
Farmer's Income			26,754			43,607	(+16,853)

Table 6.2.13 GROSS INCOME, PRODUCTION COST, FARMER'S PROFIT AND INCOME OF COWPEA IN YALA IN MINIPE & NAGADEEPA

	Actual (1981-1985)			Target Year			Remark
	Item	Unit Price (RP)	Amount (RP)	Item	Unit Price (RP)	Amount (RP)	
Gross Income	1,000kg	12.00	12,000	1,800kg	12.00	21,600	(+9,600)
Production Cost							
Seed Cost	37kg	16.00	592	28kg	16.00	448	Transplanting Cultivation (1 bu/ac)
Fertilizer Cost							
N,P,K	0	3.00	0	250kg	3.00	750	
Urea	0	2.875	0	30kg	2.875	86	
Agriculture Chemicals Cost			320			1,250	Insecticides @625P X 2
Labour Cost	137	24	3,288	157	24	3,768	
Livestock Cost			85			1,200	5days/time X 2 times X 100 RP = 1,000 RP Others 200 RP
Water Charge			0			0	
Cultivation Fee			0			0	
Sub Total			4,200			7,502	(+3,302)
Farmer's Profit			7,800			14,098	(+6,298)
Cost of Family							
Labour	136	24	3,264	136	24	3,264	
Farmer's Income			11,064			17,362	(+6,298)

Table 6.2.14 GROSS INCOME, PRODUCTION COST, FARMER'S PROFIT AND INCOME OF GREEN GRAM IN YALA IN MINIPE & NAGADEEPA

	Actual (1981-1985)			Target Year			Remark
	Item	Unit Price (RP)	Amount (RP)	Item	Unit Price (RP)	Amount (RP)	
Gross Income	900kg	13.50	12,150	1,600kg	13.50	21,600	(+9,450)
Production Cost							
Seed Cost	37kg	16.00	592	28kg	16.00	448	Transplanting Cultivation (1 bu/ac)
Fertilizer Cost							
N,P,K	0	3.00	0	250kg	3.00	750	
Urea	0	2.875	0	30kg	2.875	86	
Agriculture Chemicals Cost			320			1,250	Insecticides @625P X 2
Labour Cost	137	24	3,288	157	24	3,768	
Livestock Cost			0			1,200	5days/time X 2 times X 100 RP = 1,000 RP Others 200 RP
Water Charge			0			0	
Cultivation Fee			0			0	
Sub Total			4,200			7,502	(+3,302)
Farmer's Profit			7,950			14,098	(+6,148)
Cost of Family							
Labour	136	24	3,264	136	24	3,264	
Farmer's Income			11,214			17,362	(+6,148)

Table 6.2.15 GROSS INCOME, PRODUCTION COST, FARMER'S PROFIT AND INCOME OF SOYA BEAN IN YALA IN MINIPE & NAGADEEPA

	Actual (1981-1985)			Target Year			Remark
	Item	Unit Price (RP)	Amount (RP)	Item	Unit Price (RP)	Amount (RP)	
Gross Income	600kg	15.00	9,000	1,700kg	15.00	25,500	(+16,500)
Production Cost							
Seed Cost	65kg	12.00	780	67kg	12.00	804	Transplanting Cultivation (1 bu/ac)
Fertilizer Cost							
N,P,K	69	2.955	0	125kg	2.955	750	
Urea	34	2.875	0	62kg	2.875	86	
Agriculture Chemicals Cost			320			1,250	Insecticides @625P X 2
Labour Cost	169	24	4,056	174	24	4,176	
Livestock Cost			1,888			1,200	5days/time X 2 times X 100 RP = 1,000 RP Others 200 RP
Water Charge			0			0	
Cultivation Fee			0			0	
Sub Total			7,026			7,978	(+952)
Farmer's Profit			1,974			17,522	(+15,548)
Cost of Family Labour	99	24	2,376	99	24	2,376	
Farmer's Income			4,350			19,898	(+15,548)

6.2.9 Credit

The demand for the agricultural credit is expected to increase due to the mass utilization of agricultural inputs and the diversification of the farm practices. Interest rate and other credit conditions are not seemed to be different after the project implementation.

The credit supplying organizations like Bank of Ceylon should increase the supplying capability. Mortgage system should be reexamined through the alteration of land ownership system.

6.2.10 Organisation

The relationship of the four kinds of committee in the project area should be strengthened in order to achieve the high target of production of agricultural products. The project area where the new products would be introduced requires the new technology and new agricultural input. The organization of the management should play an important role for agricultural production matters.

6.2.11 Extension and Training

In Nagadeepa Scheme, agricultural extension and training are carried out by an Agricultural Officer, two Subject Matter Officers, an Agricultural Instructor and five Agricultural Extension Workers. The present agricultural plan envisages the promotion of irrigated paddy cultivation in Maha season and introduction of chillies and pulses cultivations in Yala season with the improvement or rehabilitation of irrigation and drainage facilities. In order to achieve the objectives of the plan, it is imperative to give adequate technical guidance and training to the farmers. For effective and useful extension and training, the following measures are proposed to be taken:

- (1) Posting of Subject Matter Officer in charge of cultivation of upland crops, and one in charge of soil and fertiliser.
- (2) Increase numbers of demonstration farms for paddy, chillies and pulses cultivations.
- (3) Distribution of a handbook for cultivating paddy, chillies and pulses to the farmers concerned.
- (4) Awarding of progressive farmers.
- (5) Exchange of opinions between personnel concerned to the agricultural extension works in Minipe and Nagadeepa Scheme.
- (6) Regular training of farmers' in the newly established water management training centre.

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