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**12<sup>TH</sup> ICA-JAPAN TRAINING COURSE (1997-98)**  
**STRENGTHENING MANAGEMENT OF AGRICULTURAL**  
**COOPERATIVES IN ASIA**  
**INDIA-PHILIPPINES-JAPAN**  
**October 20 1997-April 17 1998**

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**VOLUME : V**

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TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

*Oil*  
25.2.98

**PROJECT PROPOSAL**

Title of the  
Project Proposal : **CHANDONA CO-OPERATIVE  
FISH CULTURE PROJECT**

Country : **BANGLADESH**

Project Proposal  
Prepared by : **KAZI ZAHIRUL HOQUE,  
ASSISTANT GENERAL MANAGER.  
BANGLADESH SAMABAYA BANK LTD.  
9-D, MOTIJHEEL COMMERCIAL AREA, DHAKA**

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
**India, Philippines and Japan**



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Dated, Dhaka  
January 18, 1998.

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## CHAPTER-1

### SUMMARY

1. Name of the Project : Chandona Co-operative Fish Culture Project.
2. Project area : Bashon union.
3. Total Project Cost : Taka 81.27 Lacs.
4. Source of Fund : (a) Share Capital Tk. 21.27 Lacs  
(No. of Shares: 2127 @ Tk. 1000  
(b) Long-term Loan Tk. 60.00 Lacs.
5. Debt Equity Ratio : 73.83 : 26.17
6. Expected capacity Utilization : 1st Year 85%  
2nd Year and onward 100%
7. Installed Capacity : (a) Rui fish (Major Carp) 31875 Kg.  
(b) Catla fish (Major Carp) 21,250Kg.  
(c) Silver Carp (exotic " ) 42000 Kg.  
Yearly Total : 95125 Kg.
8. Implementation Period : 6(Six) months.
9. Product : Fish (3 varieties).
10. Project Life (assumed) : 10 Years.
11. Organisational Management : 12 Members Board of Directors.
12. Operational Management : 18 Staff headed by Manager + Casual Labour.
13. Target Group : Member Farmers of Bashon union
14. Rate of Interest : 15%
15. Instalment of Loan : 13.00 Lacs per Year.

16. **Financial Analysis result** :

(a) Pay back period	:	2.74	Years.
(b) NPV	:	Tk.9435	thousands.
(c) BCR	:	2.16	
(d) IRR	:	37.66%	

(e) **Sensitivity:**

i. At 40% higher cost	:	Pay back period	=	2.96	Years
of raw material	:	NPV	=	Tk.8093	thousands.
	:	BCR	=	2.00	
	:	IRR	=	34.44%	
ii. At 10% lower price	:	Pay back period	=	3.14	Years
of commodity	:	NPV	=	Tk.7118	thousand.
	:	BCR	=	1.88	
	:	IRR	=	32.41%	

**CHAPTER-2**2.0 **Introduction**

Bangladesh is one of the developing country in south-Asian Region. The total area of the country is 1,47,590 Sq. k.m. with a population of 111.4 million on her breast. The economy of Bangladesh is basically agricultural about 80-85% of the population directly or indirectly depend on agriculture. Agriculture is the main occupation of the people employing 63.2% of the labour force. This sector directly contributes around 32% of the gross domestic products(G.D.P).

As one of the major sub-sector of Agriculture, Fisheries plays a dominant role in nutrition, employment generation and foreign exchange earning of the country. Fishes are nutritious food all over the world and form an important source of cheapest animal protein. In Bangladesh 80% and above animal protein consumption comes from fishes, which are also important sources of fats, minerals and other nutrients. Fishes not only constitute the

nutritious food items in Bangladesh but also play an important role to build our national economy. About 8% of the total population are directly or indirectly depends on fishes and fisheries resources. This sub-sector contributes nearly 8.9% of the Gross Domestic product and more than 9.1% of total export value. So fish culture plays a vital role in the national economic growth.

There are three sources in inland fisheries resources i.e impounded waters, inundated crop-fields and open water. There are 13,52,633 ponds, Dighis and Tanks in the country which cover the impounded water bodies. But those sources are scattered. Out of the total number of those only 48.80% are being used in fish culture, 31.40% are culturable and 19.80% are abandoned. In the country the total of cultured area is 2,09,148 Acres, culturable is 1,05,598 Acres & abandoned is 58711 Acres. Now if the culturable and abandoned ponds, Tanks can be brought under fish culture project the country will be able to reach the point of meeting animal protein requirements and also will help to generate additional employment with improvement the socio-economic condition of fishermen & others engaged in fisheries. This will help the Marginal groups of the society. Having the above ideas I have decided to implement the fish culture project by the members on Co-operative basis.

## 2.1 Review of the project Area:

The area of the project is reviewed and overall situation is mentioned below :-

-	Area of Bashon union	:	6.92 sq. Km.
-	Population	:	17531
	(a) Male	:	9058
	(b) Female	:	8473
-	Number of Villages	.	29
-	Farmer House- hold	:	1676



-	<u>Actual Cultivable Land</u>	:	3270 Acres
	(a) One Crop	:	934 Acres
	(b) Two Crop	:	998 Acres
	(c) Three Crop	:	1338 Acres
-	<u>Area of ponds</u>	:	25 Acres
	(a) Cultured	:	10 Acres
	(b) Culturable	:	15 Acres

### 2.3 Features of Agricultural produces 195-96

Sl No.	Name of Crop	Cultivated land(in acre)	Production Per acre(in kg.)	Total Production (in kg.)
1.	Paddy (HYV)	70	1158	81060
2.	Paddy (Pazam)	40	940	37600
3.	Paddy (Local)	70	600	42000
4.	Paddy (Aus)	10	955	9550
5.	Jute (Tosa)	8	205	1640
6.	Jute (Local)	280	650	18200
7.	Wheat	100	725	72500
8.	Pulse (Masur)	20	300	6000
9.	Pulse (Boor)	15	310	4650
10.	Oilseed (Mustard)	250	375	93750
11.	Tobacco	25	350	8750
12.	Vegetables	115	1560	179400
13.	Fish	10	650	6500

#### **2.4. Co-operatives in project Area.**

The Project will be situated in Bashon Union of Gazipur sadar Thana. There are 48 Agricultural co-operative societies and about 80 other co-operative societies including 10 Fishermen co-operative societies in Gazipur sadar Thana . Total number of individual members are 9234. The amount of shares and deposit held by these societies are Tk. 1.475 million and Taka 1.650 million respectively. Most of the agricultural co-operative societies in the project area are defunct due to non-availability of financial assistance. Besides, 20 agricultural co-operative societies and 8 other co-operative societies are in Bashon union.

#### **2.5 Area of the Project:**

The proposed project will cover the whole area of Bashon union. Membership will be open to all farmer household. A co-operative society will be formed so that the members are assured of reasonable price for the produces. The labourers engaged in the farm will also be subsequently included in the co-operative so that they can be provided employment opportunities for their livelihood.

#### **2.6 Problems faced by the farmers:**

In overall situation of the project area it already has been mentioned that in proposed project area consist of 25 acres of ponds. Out of these, only 10 acres of ponds are cultured. Lack of technical knowledge and capital rest of the ponds remain uncultured every year. Ponds which are already cultured does not give profitable production because of unscientific culture The main problems of remunerative production are two.i.e (i) Lack of proper Knowledge about modern fish culture technique and (ii) Non- availability of credit support at easy term. There is no other organization to provide credit, supply of input and marketing facilities of fishes.

#### **2.7 Vindication of the Project:**

Inspite of tremendous opportunity to development, fish production has failed to keep space with its ever increasing demand due to increase of population. As a consequence,

per capita availability of fish has declined over the years resulting nutritional and other problems. Most of the people take fishes with their daily food. As a result demand of fishes increasing day by day. Inadequate knowledge and information on fish culture, lack of proper management policy and modern fishing technique, use of inefficient fishing equipments, inadequacy of processing, marketing and other facilities as well as credit support are some of the major problems to development of fish culture in Bangladesh. Only through a well organised co-operative society all above mentioned problems of a fish culture project may be over-come. Modern scientific fish culture techniques may be introduced through trained employees. Through implementation of the project, the members will get remunerative return and as well as other additional benefit out of the profit of the project. Moreover, the members will enjoy the ownership of this project. on the other hand it will be supportive to the nation in respect of food production. It will also develop co-operative sense in the people and thereby promote co-operative leadership. The project will encourage the people to come under the fold of co-operative to increase their income.

### **CHAPTER-3**

### **P R O J E C T**

#### **3.1 Objectives:**

The main objective of this project is to increase the income of the member farmers by widening the market channel and assuring the remunerative price of the produces. The other objectives of the project are as follows:-

- i) To provide important protein food sources.
- ii) To improve the continued growth of fish culture through co-operatives.
- iii) To make best use of the land.
- iv) To make the source of employment.

- v) To increase the availability of fish for domestic consumption with mineral fats.
- vi) To make optimum use of the members culturable ponds.
- vii) To stabilize the anchor activities of co-operatives and to promote their forward integration activities.
- viii) To generate extra income
- vx) To strengthening the co-operative movement.

### 3.2 **Implementation Period:**

Within 6(six) months the project will be implemented.

### 3.3 **Area of the project:**

Gazipur sadar is well communicated to the capital city Dhaka and other two district Tangail and Gazipur. The soil of the Project area has good water containing capacity. The ponds in the area which remains suitable for fish culture even in dry season. Fish fry can easily be procured from nearby Tangail, Valuka, Rajendrapur, Nayarhat, Tongi, Joydebpur and Manikgonj. Produced fish can easily be supplied to Dhaka, Tangail, Gazipur, Joydebpur and other parts of the country by road. The area selected is not usually flood-affected and as such there is no risk for undertaking fish culture project in the area. The location of the project is shown in - Annexure-1.

### 3.4 **Project Components:**

The activities of the Project may be divided into three stages though there is only one product of the project:-

- i) Raw material procurement
- (ii) Plant operation .i.e production Activities
- iii) Marketing.

### 3.4.1 Procurement of Raw Materials :

The main raw materials of this project are fry of three species of fishes- Rui, Catla and silver carp, Chemical fertilizer - Urea, T. S. P and Patash, Supplementary food like Cow-dung, husk/bran of pulse and paddy, medicine and lime. Fish fry can easily be procured from nearby hatcheries of Joydebpur, Valuka, Rajendrapur, Tangail and Manikgonj. Some hatcheries of these places are managed by the Department of Fisheries of Ministry of Fisheries and livestock of Bangladesh. There are other hatcheries also which are managed by the private ownerships. Chemical fertilizer may be procured from the authorized dealer of Bangladesh Agricultural Development Corporation (BADC) managed by the Ministry of Agriculture. Supplementary food like cow-dung, husk/bran of pulse and paddy will be procured from the members of the society and the member households are engaged mainly in agriculture around the project. Medicine like Diptrex and potassium per manganate may be procured from the authorized dealer with the help of Fisheries Department. Diptrex are used against fish louse like Argulus, Laranaya and Irgasilas. These kinds of louses are the main cause of deadly epidemic of fishes. Another kind of fish disease is called gill putrefaction. Lime and potassium per manganate works against this type of disease. Lime can easily be procured from nearby local market.

### 3.4.2 Culture Operation :

Culture Operation of the project will include the following activities :-

- Food supply
- Medical Care
- Checking
- Catching.

### 3.4.3 Marketing facilities:

In earlier it is mentioned that produced fish can easily be supplied to capital city Dhaka and other places of the country by road. Produced fish of the project will be

marketed to the following nearby sales centre. The mini truck of the project will be used for this purpose.

<u>Market segment</u>	<u>Distance from the project</u>
* Tangail District Town	40 km.
* Mirzapur Thana Town	20 km.
* Safipur Anser Training Centre	10 km.
* Joydebpur Thana Town	5 km
* Gazipur District Town	2 km.
* Dhaka (Capital City)	25 km.
* Local Market	1 km.

The Sales Supervisor will ensure timely sale of the Product. There is a large daily and weekly market near by the project .So it is expected that maximum fishes will be sold on the spot.

## CHAPTER-4

### DETAILS OF OPERATION

#### 4.1 SPECIES:

Basic statistics on fish culture which has been compiled and published by the Directorate of fisheries of Bangladesh tells that out of total cultured fishes share of three species named Rui (Major Carp), Katla (Major Carp) and silver carp (Exotic Carp) are high in the Bangladesh. Percentage of weight in culture of these species is 65% which is increasing day by day. These species are popular and fond of most of the people in Bangladesh. As why the project will culture only these species of fishes.

#### 4.2 Capacity utilization :

The utilization of the available capacity has been assumed as follows:-

<u>Year</u>	<u>% of utilization</u>
1st year	85%
2nd year and onward	100%

Net annual productivity at 100% efficiency will be as follows:-

Sl. No.	Species	Production in Kg.
1.	Rui (Major Carp)	31875
2.	Katla ( Major Carp)	21250
3.	Silver Carp ( Exotic Carp)	42000
Total :-		95125

#### 4.3 Raw Materials Requirement :

Fish fry and fish food are the basic raw materials of fish culture.

i) **Fry:** Fish fry will be purchased from nearby hatcheries which are available under both private and public ownership. Annual requirement of fries at 100% capacity is 1,60,000 pieces.

#### ii) Food:

##### (a) Chemical Fertilizer T. S. P:-

Annual requirement of T. S. P per acre will be 600 kg. So total requirement of T.S.P will be 20 acres x 600 kg. = 12,000 kg. The present rate of T.S.P is Tk. 10.00 per kg. Total price of T.S.P in a year is 12,000 x 10=1,20,000.00

##### (b) Urea:

Annual requirement of Urea per acre will be 600 kg. So total requirement of Urea will be 20 acres x 600=12,000 kg. The present rate of urea is Tk. 6.00 per Kg. Total price of Urea in a year is 12000 x 6= Tk. 72,000.00

##### (c) Patash:

Annual requirement of patash per acre will be 300 Kg. So total requirement of patash will 20 acres x 300= 6000 Kg. The present rate of patash is Tk. 15.00 per kg. Total price of patash will be 6000x15.00= Tk. 90,000.00

##### (d) Supplementary Food:

For supplementary food like Muck (Cowdung) bran of pulse and paddy will be purchased from the local industries of rice processing . Annual cost for these supplementary food is assumed to be Tk. 60,000.00

#### 4.4 Details of Culture:

##### Fish Fry:

Required fish fry at the beginning of the operation year:-

Species	Composition Required	Per Acre	Total required fry
Rui (Major Carp)	40%	3,000	20 acres x 3000=60,000
Catla (Major Carp)	20%	2,000	20 acres x 2000= 40,000
Silver Carp (Exotic carp)	40%	3,000	20 acres x 3000= 60,000
<b>Total:-</b>	<b>100%</b>	<b>8,000</b>	<b>20 acres x 8000= 1,60,000</b>

##### Pilferage and Mortality Rate :

Species	Total Fry	Pilferage (5%)	Mortality 10% at earlier stage	Catchable Quantity(85%)
Rui	60,000	3,000	6,000	51,000
Catla	40,000	2,000	4,000	34,000
Silver Carp	60,000	3,000	6,000	51,000
<b>Total:-</b>	<b>1,60,000</b>	<b>8,000</b>	<b>16,000</b>	<b>1,36,000</b>

It is assumed that from 1,60,000 fries, 85% i.e. 1,36,000 fishes will be caught from the ponds. After 6(six) months of the first year, the average weight (minimum) of each silver carp will be of 400 grams. As in first half of the year pilferage rate will be 2.5%, so it is expected that 52,500 silver carp will be caught for marketing after six months. It is expected that minimum price will be Taka 60.00. So total sales after six months of the first year will be 52,500 X 400 gram=21,000 kg X 60.00= 12,60,000. Tk.

After catching of 52,500 number of fishes again 60,000 fries of silver carp will be cultured in ponds. So at the end of the first year total number of fishes will be:-

Rui	=	51,000
Catla	=	34,000
Silver Carp	=	<u>52,500</u>
<b>Total :-</b>	=	<b><u>1,37,500</u></b>



It is assumed that at the end of the year, 100% of the silver carp and 75% of the Rui and Catla will be caught from the ponds. So total no. of catchable fishes at the end of the year will be :-

Rui	=	75%	=	38,250
Catla	=	75%	=	25,500
<u>Silver Carp</u>	=	<u>100%</u>	=	<u>52,500</u>
<u>Total :-</u>	=		=	<u>1,16,250</u>

At the end of the year average weight of each Rui and Catla will be 600 grams and silver carp will be 400 grams. So in second half of the year total production will be as --

Rui	=	38,250 x 600 =	22,950 kg
Catla	=	25,500 x 600 =	15,300 kg
Silver carp	=	<u>52,500 x 400 =</u>	<u>21,000 kg</u>
		<u>Total :-</u>	<u>59,250 kg</u>

The average price will be Tk. 60.00 per kg. So total sales in 2nd half of the year will be 59,250 x 60 = 35,55,000 Taka.

So in 1st year total production will be 21000 kg. + 59250 kg. = 80250 kg x 60 = 48,15,000

### Second year :

1st half of the year Silver Carp =	52,500
<u>2nd half of the year silver Carp =</u>	<u>52,500</u>
<u>Total :-</u>	<u>1,05,000</u>

Average weight = 400 grams

Total weight 1,05,000 x 400 grams = 42,000 kg.

25% of Rui of previous year =	12750
<u>25% of Catla of previous year =</u>	<u>8500</u>
<u>Total :-</u>	<u>21,250</u>

Average weight of each Rui and catla will be 700 grams . So total weight =	14875 kg.
75% of Rui of 2nd year =	38,250
<u>75% of Catla of 2nd year =</u>	<u>25,500</u>
<u>Total:-</u>	<u>63,750</u>

Average weight of each Rui and Catla will be 600 grams. So total weight of Rui and Catla will be 63,750x 600 grams = 38,250 kg.

Total production will be 42,000 kg. + 14,875 kg. + 38,250 kg = 95,125 kg.

Minimum price per kg. = Tk. 60.00 So total sales in 2nd year=  
95,125 kg. x 60 = Tk. 57,07, 500

At 3% inflation in 2nd year, Total sales = 95125 kg x 61.8= Tk. 58,78,725.

**4.5 Labour :** Salaries are computed on the basis of prevailing situation in the country which will increase @ 5% from year to year. In addition to the stated salaries fringe benefit equivalent of 35% would also have to be provided.

## CHAPTER-5

### MANAGEMENT OF THE ORGANIZATION

#### 5.1 Structure:

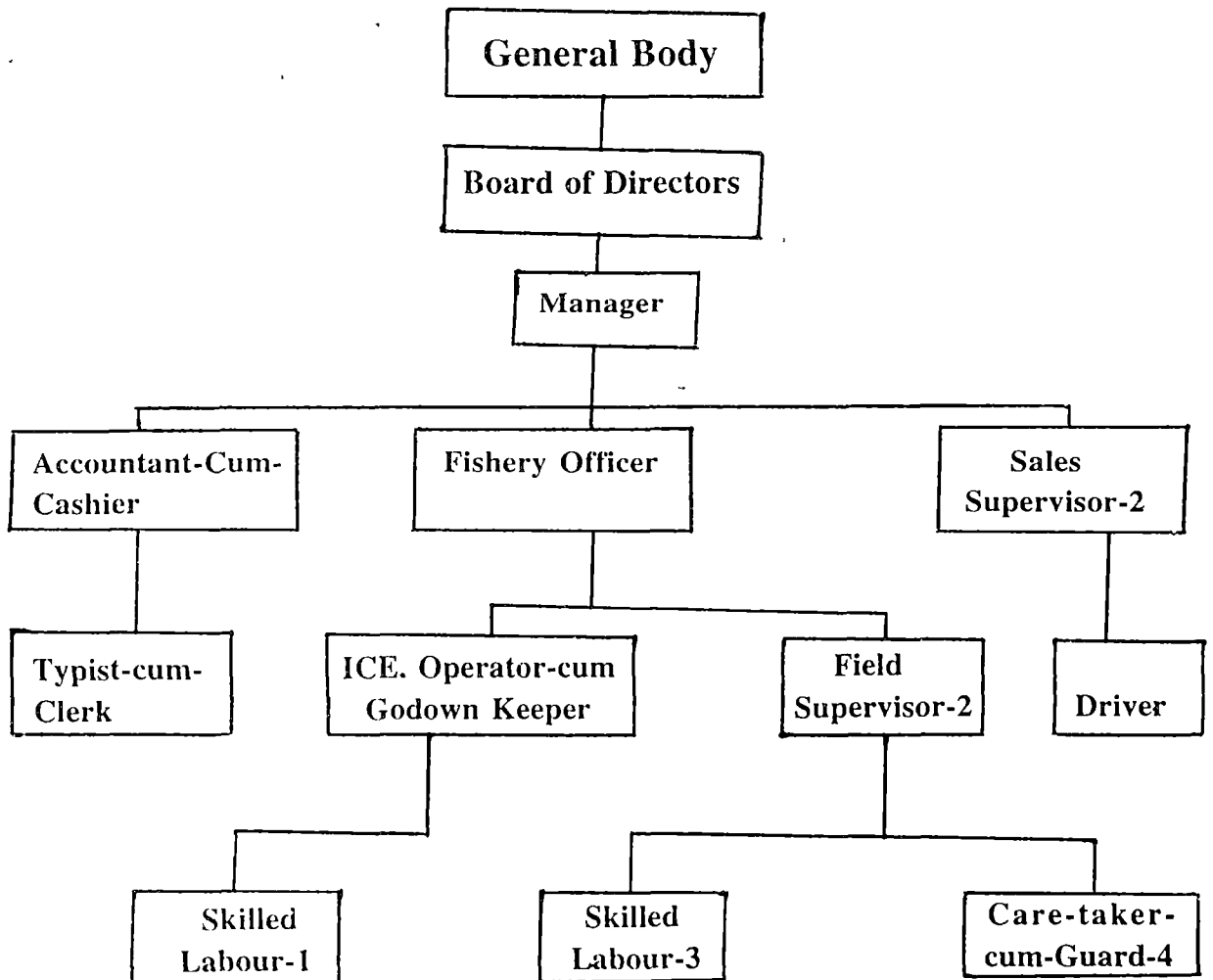
The proposed Project will be implemented by the Chandona Co-operative Fish Culture Society Ltd. with the financial assistance from Bangladesh Samabaya Bank Limited. A Board of Directors consisting of 12 members will look after the management of the society. The one third of the Board of Directors will be nominated by the government and the rest of the directors including the Chairman and the Vice- Chairman will be elected from the members by way of direct voting. The term of Board of Directors will be of three years. The power, duties and functions of the Board of Directors will be as follows:-

- To admit members
- To receive and disburse money
- To raise funds, invest funds
- To appoint salaried employees

- To prepare annual report and statement of accounts
- To convene annual general meeting.

The Board of Directors will hold meeting at least once in every two months. They will be entitled to sitting fee of Tk. 100 & daily allowance of Tk. 100 for attending each meeting. The Board of Directors will formulate policies and provide guidelines for its business operation. The overall management of the project will be vested on the manager. The manager will be the chief executive who will manage the day to day operation of the project. He will be assisted by the other staff.

The Organisational Structure of the society will be as under :-



Sl.No	Designation	No. of posts
1)	Manager	1
2)	Fishery Officer	1
3)	Accountant-cum-Cashier	1
4)	Typist-cum-Clerk	1
5)	Field Supervisor	2
6)	Sales Supervisor	2
7)	Ice Compressor Operator cum-Godown Keeper	1
8)	Driver	1
9)	Caretaker-cum-Guard	4
10)	Skilled Labour	4
Total :-		18

## 5.2 Details of Operational Management :

(Figure in Taka)

Sl. No	Designation	Qualification	Monthly Salary	Required Number
1)	Manager	Masters degree in Fishery (Experience 5 years)	Tk.6500	1
2)	Fishery Officer	Bachelor degree in Fishery (Experience 5 years)	Tk. 3500	1
3.	Accountant-Cum-Cashier	Bachelor degree in Commerce (Experience 5 years)	Tk. 3500	1
4.	Field Supervisor	H. S. C (Experience 2 years)	Tk.2500 X 2=5000	2
5.	Sales Supervisor	Bachelor degree in Commerce (Experience 5 years)	Tk. 3000X2=6000	2

6.	Typist-cum- Clerk	H. S. C with typing (Experience 2 year)	Tk. 2400	1
7.	Ice Compressor Operator-Cum- Godown keeper	Class -VIII (Experience 3 years)	TK. 2400	1
8.	Driver	Class-VIII (Experience 3 year)	Tk. 2400	1
9.	Skilled Labour	--	Tk. 1500X4=6000	4
10.	Care taker-cum- Guard	--	Tk. 1500X4=6000	4
<b>Total :-</b>			<b>Tk. 43,700</b>	<b>18</b>

The whole of operation of the project will be managed by the employees under the guidance of the Board of Directors. The duties and functions of the employees will be as under :-

**Manager :**

Bangladesh Samabaya Bank Ltd. will recruit an Officer to act as Manager of the project. During the implementation period of the project, this officer will get proper guidance from a consultant appointed by the committee of the society. The powers and function of the Manager will be as under :-

- Have control over the staff
- Receive all money on behalf of the project
- Pay all cost of management
- Maintain proper and accurate accounts
- Call meetings of the Board of Directors
- Prepare Annual programme with budget and place the same to the Board.
- implement the decisions of the Board of Directors.

**Accountant cum-Cashier:**

The accountant-cum-cashier will receive and pay cash on all transactions and maintain all books of accounts and record.

**Fishery Officer:**

The Fishery Officer is a vital post in this project as he will look after day-to-day operation on fish culture. He is fully responsible to find out all problems in operation and solve them. He will procure fish fry, fish meal, fertilizer etc. He will discharge the over all responsibility of fish production.

**Sales Supervisor:**

The sales supervisor will look after on market of fishes. He will contact with the persons who are engaged in purchasing of fishes on whole sale basis. On behalf of the society he will furnish all the sell contact in whole sale market.

**Field Supervisor:**

He will look after the works of Guards at pond level. He is responsible to apply fish meal, chemical fertilizer, medicine in the ponds under the guidance of Fishery Officer.

**Ice Comperssor Operator-cum-Godown Keeper:**

The Ice Compressor Operator-cum-Godown Keeper will maintain Ice Compressor machine. He will also maintain the stock of fish meal, fertilizer and surplus marketable fish in godown. He is also responsible to operate power pump machine during watering of ponds

## CHAPTER-6

### FINANCIAL ANALYSIS

#### 6.1 Details of project cost components:

The total capital cost of the project 81.27 lacs. (Annexure-2)

##### 6.1.1 Land:

###### a. Land for Office Building:

The cost of land for Office building measuring 1100 Sft. or .025 acre will be of the value of Tk. 4500 including stamp duty and registration fee. (Annexure-3)

###### b. Land for Godown :

The cost of land for godown measuring 700 Sft. or 0.016 acre will be of the value of Tk. 2900 including stamp duty and registration fee. (Annexure-3)

###### c. Land for Ice Factory:

The cost of land for Ice factory measuring 600 Sft. or 0.014 acre will be of the value of Tk. 2600 including stamp duty and registration fee. (Annexure-3)

###### d. Land for Ponds:

The cost of land for ponds measuring 10 acres will be of the value of Tk. 20,00,000 including stamp duty and registration fee. (Annexure-3)

##### 6.1.2 Excavation of ponds:

Excavation of ponds of 10(Ten) acres at the rate of 1,65,000 Taka per acre will be a total of Taka 16,50,000. (Annexure-3)

##### 6.1.3 Re-excavation of ponds:

Another 10(Ten) acres of leased ponds will be re-excavated. Total cost for re-excavation will be of Tk. 5,00,000. (Annexure-3)

**6.1.4 Watering and preparation of ponds:**

Watering and preparation cost will be Taka 6,000 per acre. Total cost for this purpose will be Tk. 1,20,000. (Annexure-3)

**6.1.5 Office Building, Guard Shed, Godown-cum-Ice Factory:**

Office building, Godown cum-ice-factory will be constructed covering side of the plot. It will be semi-pucca tin shed building with RCC pillar consisting of different sections for accomodation of office, godown and ice-factory. 6(six) Guard sheds will be constructed on suitable place. The cost of construction is estimated at Tk. 15,56,000 . Details of construction with specification has been shown in Annexure-4.

**6.1.6 Machinery and Equipment:**

One Ice Compressor machine having a capacity of 5 MT per day will be procured from local market. Weighing scale, handling equipments, water testing kit, fishing nets, fry carrying vessels, power pump machine, tubes for tube-well and other equipments are also available in local market. It is estimated that the machineries and equipment will cost Tk. 8,85,000 including installation. Details of machinery and equipments have been shown in Annexure-5.

**6.1.7 Vehicles:**

One motor lorry, two motor cycles and 4 by-cycles will be procured from local market, It is estimated that the vehicles will cost Tk 3,78,000. (Annexure-6)

**6.1.8 Miscellaneous fixed assets:**

The cost of Office furniture, fixture and equipments have been estimated at Tk. 1.66.000 . The details of vehicles, furniture, fixture and equipments have been shown in Annexure-6,



**6.1.9 Preoperative expenses:**

Preoperative and other expenses during construction period have been estimated at Tk. 5,75,400 which is shown in Annexure-7.

**6.1.10 Working Capital:**

Working capital has been calculated as per requirement. Margin money of the working capital will be 10% . Working capital loan will be renewed every year.

Details of working capital requirement is shown in Annexure-8.

**6.2 Debt-Equity Ratio:**

The Co-operative society will raise share capital to the tune of Tk. 21,27,000 to support 26.17% equity money to the project. As per financial plan Tk.60,00,000 will be arranged as long term loan.

**6.3 Production of fish:**

Details of Production or catching of fish is shown in Annexure-9

**6.4 Sales revenue:**

Details of sales revenue is shown in Annexure-10

**6.5 Variable Cost:**

The variable cost for 10 years is shown in Annexure-11

**6.6 Fixed cost:**

The fixed cost for 10 years is shown in Annexure-12.

**6.7 Income:**

Statement of income including contribution and net profit is shown in Annexure-13.

**6.8 Net cash inflow:**

Statement of Net cash inflow is shown in Annexure-14.

**6.9 Pay Back period:**

Pay back period of the project is 2.74 years, Details is shown in Annexure-15.

### 6.10 Net Present Value:

Net Present value of the project has been calculated at 15% discount factor for 10 years for Tk 94,35,000/- Details of calculation is shown in Annexure-16.

### 6.11 Benefit- cost Ratio:

At 15% interest or discount rate Benefit-cost ratio is 2.16. Details of calculation is shown in Annexure-16

### 6.12 IRR :

The internal rate of return of the project is 37.66% Annexure-17.

### 6.13 Sensitivity

a) At 40% higher cost of raw materials net cost inflow is shown in Annexure-18.

Pay back period = 2.96 Years. Annexure-19

Net present Value = Tk. 8093 thousands. Annexure-20.

Benefit cost ratio = 2.00 Annexure-20.

Internal rate of return= 34.44% Annexure-21.

b) At 10% lower price of commodity net cash inflow in shown Annexure-22.

Pay back period = 3.14 Years. Annexure-23

Net present value = Tk. 7118 thousands. Annexure-24.

Benefit cost ratio = 1.88 Annexure-24

Internal rate of return = 32.41% Annexure-25

c) Summary of Sensitivity analysis is shown in Annexure-26

### 6.14 Debts Service coverage Ratio:

Calculation of debt service coverage ratio is shown in Annexure-27.

### 6.15 **Depreciation:**

Depreciation has been computed on assets in following rates:-

- |    |                    |   |     |
|----|--------------------|---|-----|
| a. | Building           | : | 5%  |
| b. | Plant & equipments | : | 10% |
| c. | Vehicles           | : | 15% |
| d. | Other fixed assets | : | 15% |

Calculation is shown in Annexure-28.

### 6.16 **Salvage value:**

The volume of salvage value is Tk. 5723 thousands. Details of salvage value is shown in Annexure-29.

### 6.17 **Break Even point:**

The project will break even from the 1st year of its running. Break even point of the project comes to 40.89% capacity utilization. Break even quantity comes at 38900kg. (2nd years) Margin of safety is 56225 kg. Margin of safety is 59.11%. Detailed calculation is shown in Annexure-30.

### 6.18 **Term loan repayment Schedule:**

The loan is proposed to be repaid in 9 annual instalments starting from the 1st year of operation. The instalment will be Tk. 13.00 lacs including interest. This instalment will be equal upto eighth year. A schedule showing repayment of loan and payment of interest is shown in Annexure-31.

### 6.19 **Calculation of wages and salaries:**

The statement of calculating wages and salaries is shown in Annexure-32.

### 6.20 **Profit - Distribution:**

As per provision of the co-operative Act and Rules the profit will be distributed as follows:-

- i) Reserve Fund 15%
- ii) Dividend (Maximum) 50%
- iii) Contribution to Co-operative Development Fund 5%
- iv) Contribution to Charitable purpose 10%
- v) Bonus 6.25%

## **CHAPTER -7**

### **RECOMENDATION**

Fisheries, one of the major sub-sector of Agriculture, plays dominant role in nutrition, employment generation, foreing exchange earnings and others areas of economy of the country. This sub-sector contributes about 80% and above of the nations animal protein consumption. The main objectives of the project is to increase the income of the members by providing remunerative price of produces and to improve the continued growth of fish culture through co-operatives.

Bangladesh Samabaya Bank Ltd. should encourage the local co-operators to implement this project in the following way :-

- (a) To provide managerial help for organise the society and the project.
- (b) To provide Short-Term loan for working capital in a lower rate of interest.
- (c) To provide Long- Term loan for financing the project.

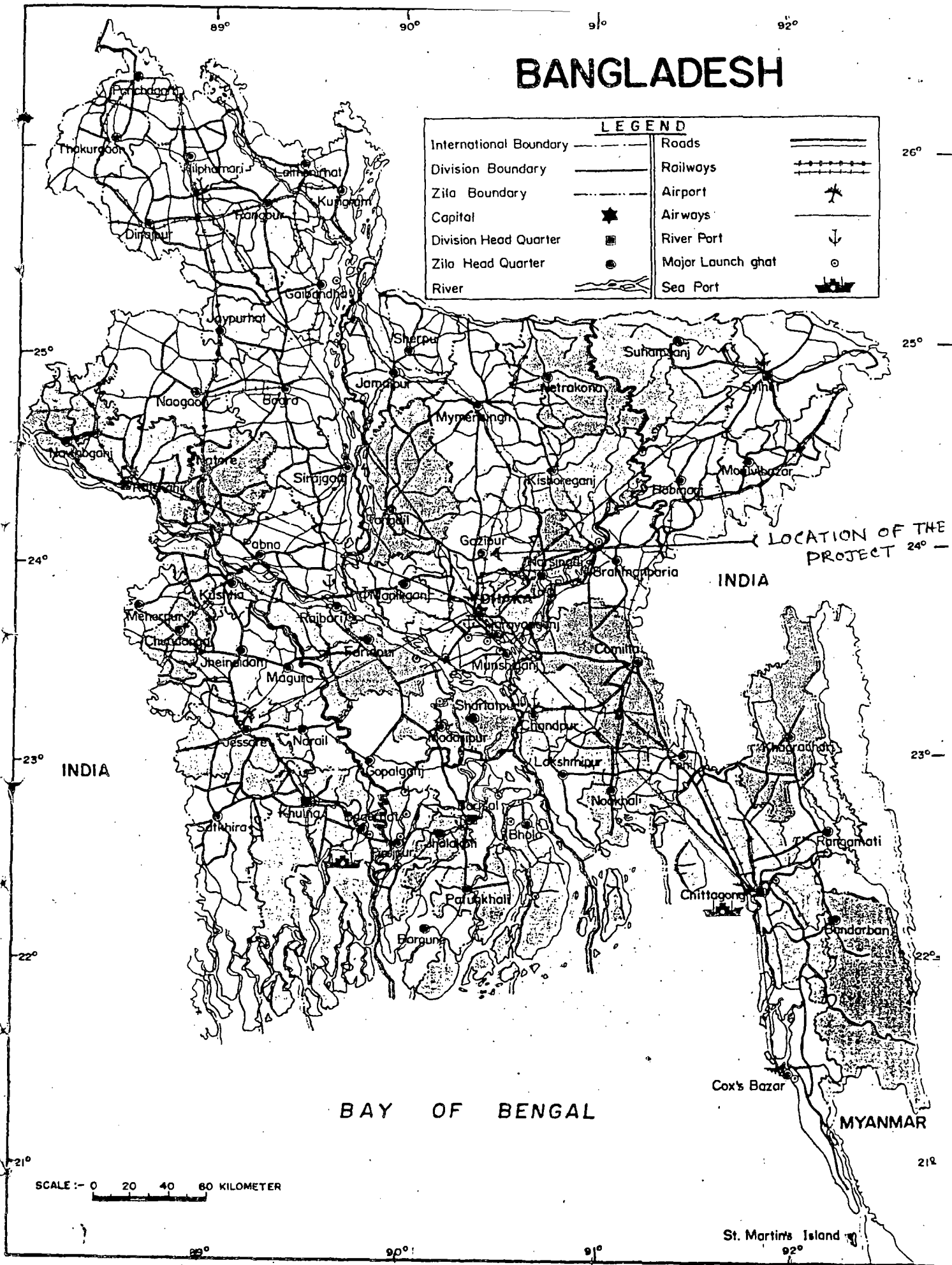
Members of the society will be able to buy fishes on preferential basis . Income of the members will be increase through the project and their better standard of living will be assured . Members will get employment on preferential basis, Boosting of fish culture will develop economic growth of the counrty. There is a provision in profit distribution that 10% of profit will distributed of charitable purposes. Through this provision, creation of educational facilities, health care centres etc. will be possible for the benefit of the members and the village community.

The proposed project is found financially rewarding, economically viable and in terms of its objectives it has immense socio-economic impacts.

Therefore, the projcet my be implemented.

# BANGLADESH

LEGEND	
International Boundary	— — — — —
Division Boundary	—————
Zila Boundary	- - - - -
Capital	★
Division Head Quarter	■
Zila Head Quarter	●
River	~~~~~
Roads	=====
Railways	————+————
Airport	✈
Airways	—————
River Port	↓
Major Launch ghat	○
Sea Port	⚓



**ANNEXURE-2****CAPITAL COST OF THE PROJECT**

(Figure in '000 Tk.)

SL.No.	Particulars	Cost
01.	Land and Pond development- Annexure-3	4280
02.	Office Building, Ice Factory & Godown- Annex-4	1556
03.	Machinery and equipments. Annexure-5	885
04.	Others fixed capital Annexure-6	544
05.	pre-operative and other expenses- Annexure-7	575
06.	Margin money for working capital	94
07.	<u>Contingency (Technical know-how &amp; consumables)</u>	<u>193</u>
	Total:-	8127

**ANNEXURE-3****LAND FOR OFFICE BUILDING, PONDS, GODOWN-CUM-ICE FACTORY  
AND POND DEVELOPMENT COST:**

(Figure in '000)

SL. No.	Item	Area in Acre	Estimated cost
01.	Land for Office Building	1100 Sft=.025 acre	4.50
02.	Land for Godown	700 Sft=.016 acre	2.90
03.	Land for Ice Factory	600 Sft=.014 acre	2.60
04.	Land for Ponds	10 acres	2000.00
05.	Excavation of Pond (per acre=Tk.165).	10 acres	1650.00
06.	Re-excavation of Ponds (Leased Ponds)	10 acres	500.00
07.	Watering of Ponds	20 acres	45.00
08.	Pond preparation	20 acres	75.00
	Total:-		4280.00

\* 43560 Sft=1 acre

**DETAILS OF OFFICE BUILDING, BOUNDARY, FENCING**  
**GO-DOWN-CUM-ICE FACTORY AND GUARD SHED**

Sl. No.	Item	Specification	Site & Area	Rate Tk./Sft.	Estimated Cost in 000 Tk.
01.	Office Building	RCC column based brick pillar, Tin shed roof, wodden frame, brick soiling floor.	1100Sft.	614	675
02.	Godown-cum-Ice Factory	Brick wall, brick pillar, Tin shed roof over wooden frame, Brick Soiling floor	1300 Sft.	419	544
03.	Boundary Fencing	Brick pillar with barbed wire	300	100	30
04.	Guard shed(Six)	Earthen floor Tin sheet fench and roof over wooden Frame	720 Sft.	50	36
05.	Toilet (Five)	--	--	Tk. 6000 ( per toilet)	30
06.	Electrification & sanitation	--	--	--	75
07.	Other works	--	--	--	26
08.	Contingency	--	--	--	140
<b>Total :-</b>					<b>1556</b>

**MACHINERY AND EQUIPMENT WITH**  
**COST OF INSTALLATION**

SL. No.	Particulars of Machineries & Equipments	Number	Value in' 000 Tk.
01.	Ice Compressor (Capacity 5 MT per day) company name-Bilzer,Italy.	1	110
02.	Fishing Nets	5	300
03.	Fry carrying vessel	25	15
04.	Weighing scale and Handling equipments	1	10
05.	Water Testing Kit	-	50
06.	Tube well	15	150
07.	Ice can (For carrying fish into Market and preservation in godown with ice)Capacity 10 Kg. per can.	100	200
08.	Power Pump(Main Pump Machine))	2	50
<b>Total:-</b>			<b>885</b>



**ANNEXURE-6****DETAILS OF OTHER FIXED  
CAPITAL REQUIREMENT**

SL.No.	Particulars	Number	Estimated value (Amount in' 000 Tk.)
01.	Motor lorry	1	300
02.	Steel Almirah	5	25
03.	Motor Cycle	2	70
04.	Full Secretariat Table	3	15
05.	Half Secretariat Tables	4	12
06.	Cushion Chair	2	4
07.	Iron Safe	1	10
08.	Armed Chair	16	10
09.	Rack	5	3
10.	Type machine	1	20
11.	Electric Fan	6	12
12.	Calculator	4	4
13.	Sign Board	1	2
14.	By-cycls	4	8
15.	Telephone	1	22
16.	Light Fittings	-	5
17.	Khat	4	8
18.	Lamp	20	2
19.	Torch	10	2
20.	Miscellaneous	-	10
<u>Total:-</u>			<u>544</u>

ANNEXURE-7PRE-OPERATIVE AND OTHER EXPENSES DURING  
CONSTRUCTION PERIOD (TO BE CAPITALISED.)

(Figure in Taka)

SL. No.	Item	Estimated cost
01.	<u>Establishment expenses (Salaries)</u>	
	(a) Salary for Manager	39000
	(b) Salary for Accountant-cum-Cashier	14000
	(c) Fishery Officer	14000
	(d) Typist-cum-Clerk	9600
02.	Rent for ponds (Lease cost) 10 acres	20,000
03.	Travelling expenses	6000
04.	Interest on term loan	4,50,000
05.	Stationery	5,800
06.	Brokerage	17,000
	<u>Total :-</u>	<u>5,75,400</u>

**WORKING CAPITAL REQUIREMENT**

(Figure in '000 Tk.)

SL No.	Item	Inflation Rate	For No of Months	Y e a r									
				01	02	03	04	05	06	07	08	09	10
0	0	0	0	01	02	03	04	05	06	07	08	09	10
01.	Fish Fry	3%	6	250	258	266	274	282	290	299	308	317	327
02.	Chemical Fertilizer	3%	6	141	145	149	153	158	163	168	173	178	183
03.	Supplementary food	3%	6	30	31	32	33	34	35	36	37	38	39
04.	Cash requirement for Salary.	5%	6	380	399	419	440	462	485	509	534	561	589
	& Other Misc. expenses	3%	6	136	140	144	148	152	157	162	167	172	177
Total :			-	937	973	1010	1048	1088	1130	1174	1219	1266	1315
	Margin Money (10%)	-	-	94	97	101	105	109	113	117	122	127	132
	Working Capital Loan	-	-	843	876	909	943	979	1017	1057	1097	1139	1183
Total :				937	973	1010	1048	1088	1130	1174	1219	1266	1315
	Interest on working capital @ 15%			126	131	136	141	147	153	159	165	171	177

**PRODUCTION OF FISH**

(Figure in kg)

		Production of Fish									
Sl. No.	Species	Ist Yr. 85%	2nd Yr 100%	3rd Yr 100%	4th Yr 100%	5th Yr 100%	6th Yr 100%	7th Yr 100%	8th Yr 100%	9th Yr 100%	10thYr 100%
01.	Silver Carp	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000
02.	Rui	22950	31875	31875	31875	31875	31875	31875	31875	31875	31875
03.	Catla	15300	21250	21250	21250	21250	21250	21250	21250	21250	21250
<b>Total :</b>		80250	95125	95125	95125	95125	95125	95125	95125	95125	95125

(Annexure-10)

**SALES REVENUE**

(Figure in '000 Tk.)

		Sales Revenue									
Sl. No.	Species	Ist Yr.	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr	7th Yr	8th Yr	9th Yr	10thYr
01.	<b>Silver Carp</b>	2520	2520	2520	2520	2520	2520	2520	2520	2520	2520
02.	<b>Rui</b>	1377	1912	1912	1912	1912	1912	1912	1912	1912	1912
03.	<b>Catla</b>	918	1275	1275	1275	1275	1275	1275	1275	1275	1275
<b>Total :</b>		4815	5707	5707	5707	5707	5707	5707	5707	5707	5707
* Price (per kg @ Tk.)		60.00	61.80	63.654	65.563	67.527	69.554	71.640	73.789	76.002	78.282
<b>Total price :</b>		4815	5878	6055	6236	6424	6616	6815	7019	7230	7447

\* 3% inflation from 2nd year and onwards.

VARIABLE COST

(Figure in '000 Tk.)

SL No.	I t e m	Y e a r									
		Ist	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1(a)	<b>Purchasing of Fish fry</b> at the begining of the year(Rui + Katla + Silver Carp)1,60,000 Pcs. Per pc = Tk.1/-	160	160	160	160	160	160	160	160	160	160
b)	<b>Fish fry (Silver Carp)</b> 60,000 pcs. per pc.=Tk.1.5	90	90	90	90	90	90	90	90	90	90
2.	<b><u>Chemical Fertilizer:</u></b>										
(a)	<b><u>TSP :</u></b> per acre per year = 600 kg. 20 acre x 600 =12000 kg. per kg.= Tk.10/-	120	120	120	120	120	120	120	120	120	120
(b)	<b><u>Urea :</u></b> Per acre per year = 600 kg. 20 acres x 600 =12000 kg. per kg = Tk.6/-	72	72	72	72	72	72	72	72	72	72

VARIABLE COST

(Figure in '000 Tk.)

Sl. No.	I t e m	1st Yr.	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr	7th Yr	8th Yr	9th Yr	10thYr
C.	<b>Patash :</b> Per acre per year=300 kg. 20 acres x 300 = 6000 per kg.=Tk.15/-	90	90	90	90	90	90	90	90	90	90
3.	Fuel for Vehicles and Power Pump.	130	130	130	130	130	130	130	130	130	130
4.	Muck and other suplimentary Food per month Tk. 5000/-	60	60	60	60	60	60	60	60	60	60
5.	Bamboo	10	10	10	10	10	10	10	10	10	10
6.	Repairs & main- tenance	40	40	40	40	40	40	40	40	40	40
7.	Electricity	25	25	25	25	25	25	25	25	25	25
8.	Temporary labour per day Tk.60/- per labour, per year labour 400	24	24	24	24	24	24	24	24	24	24
9.	Miscellaneous	25	25	25	25	25	25	25	25	25	25
10.	Medicine & lime	10	10	10	10	10	10	10	10	10	10
11.	Kerosin for Haricane	5	5	5	5	5	5	5	5	5	5
12.	Drycell for Torch	2	2	2	2	2	2	2	2	2	2
	<b>Total :</b>	<b>863</b>	<b>863</b>	<b>863</b>	<b>863</b>	<b>863</b>	<b>863</b>	<b>863</b>	<b>863</b>	<b>863</b>	<b>863</b>
	At inflation rate 3% from 2nd year	863	889	916	943	971	1000	1030	1061	1092	1125
13.	Interest on working capital.	126	131	136	141	147	153	159	165	171	177
	<b>Grand Total :</b>	<b>989</b>	<b>1020</b>	<b>1052</b>	<b>1084</b>	<b>1118</b>	<b>1153</b>	<b>1189</b>	<b>1226</b>	<b>1263</b>	<b>1302</b>

**FIXED COST**

(Figure in '000 Tk.)

Sl. No.	I t e m	Ist Yr.	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr	7th Yr	8th Yr	9th Yr	10thYr
1.	* Salaries(Annexure-32)	760	798	838	880	924	970	1019	1070	1123	1179
2.	DA & Sitting fee of Directors.	15	15	15	15	15	15	15	15	15	15
3.	Travelling & Conveyance	25	26	27	28	29	30	32	34	36	38
4.	Rent for Leased Pond.	50	52	55	58	61	64	67	70	74	78
5.	Honorarium of Chair-man	6	6	6	6	6	6	6	6	6	6
6.	Printing & Stationery	12	13	14	15	16	17	18	19	20	21
7.	Postage, Telegram and Telephone.	3	3	3	3	3	3	4	4	4	4
8.	Advertising Cost(Order getting).	10	11	12	13	14	15	16	17	18	19
9.	Depreciation ( Annexure-28 )	249	223	201	181	164	148	134	122	112	102
	<b>Total :</b>	<b>1130</b>	<b>1147</b>	<b>1171</b>	<b>1199</b>	<b>1232</b>	<b>1268</b>	<b>1311</b>	<b>1357</b>	<b>1408</b>	<b>1462</b>
10.	Less Depreciation :	249	223	201	181	164	148	134	122	112	102
11.	Fixed cost without depreciation & interest on term loan.	881	924	970	1018	1068	1120	1177	1235	1296	1360

\* Provision of 3% inflation rate(5% on Salaries) in each year from the second year onwards has been calculated except Sl.No. 2, 5 & 9.

**INCOME STATEMENT****(Figure in '000 Tk.)**

	<b>Particulars</b>	<b>Ist Yr.</b>	<b>2nd Yr</b>	<b>3rd Yr</b>	<b>4th Yr</b>	<b>5th Yr</b>	<b>6th Yr</b>	<b>7th Yr</b>	<b>8th Yr</b>	<b>9th Yr</b>	<b>10thYr</b>
1.	Sales Revenue	4815	5878	6055	6236	6424	6616	6815	7019	7230	7447
2.	Less : Variable Cost	989	1020	1052	1084	1118	1153	1189	1226	1263	1302
3.	Contribution (1-2)	3826	4858	5003	5152	5306	5463	5626	5793	5967	6145
4.	Less : Total fixed cost	2030	1987	1942	1891	1832	1763	1686	1593	1484	1462
5.	Profit before Tax(3-4)	1796	2871	3061	3261	3474	3700	3940	4200	4483	4683
6.	Less : Tax (25%)	449	718	765	815	869	925	985	1050	1121	1171
7.	Net Profit (5-6)	1347	2153	2296	2446	2605	2775	2955	3150	3362	3512
8.	Contribution to Sales % (3 ÷ 1)	79.46	82.65	82.63	82.62	82.60	82.57	82.55	82.53	82.53	82.52
9.	Net Profit to Sales % (7 ÷ 1)	27.98	36.63	37.92	39.22	40.55	41.94	43.36	44.88	46.50	47.16



NET CASH INFLOW(Annexure-14)

(Figure in '000 Tk)

Sl. No.	Species	Ist Yr.	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr	7th Yr	8th Yr	9th Yr	10thYr
1.	Capacity Utilization	85%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2.	Net Sales(Annex-10)	4815	5878	6055	6236	6424	6616	6815	7019	7230	7447
3.	Total variable cost	989	1020	1052	1084	1118	1153	1189	1226	1263	1302
4.	Interest on term loan	900	840	771	692	600	495	375	236	76	-
5.	Depreciation	249	223	201	181	164	148	134	122	112	102
6.	Other fixed cost	881	924	970	1018	1068	1120	1177	1235	1296	1360
7.	Total fixed cost(4+5+6)	2030	1987	1942	1891	1832	1763	1686	1593	1484	1462
8.	Profit before tax(2-3-7)	1796	2871	3061	3261	3474	3700	3940	4200	4483	4683
9.	Tax (25%)	449	718	765	815	869	925	985	1050	1121	1171
10.	Profit after Tax (8-9) (Net profit)	1342	2153	2296	2446	2605	2775	2955	3150	3362	3512
11.	Salvage value	-	-	-	-	-	-	-	-	-	5723
12.	Internally generated fund (5+10+11)	1591	2376	2497	2627	2769	2923	3089	3272	3474	9337
13.	Net cast inflow (4+12)	2491	3216	3268	3319	3369	3418	3464	3508	3550	9337

**ANNEXURE-15****CALCULATION OF PAY BACK PERIOD**  
**(NORMAL)**

Sl. No.	Particulars	0 yr.	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
1.	Capital Cost	8127					
2.	Net cash inflow		2491	3216	3268	3319	3369
3.	Cumulative cash inflow		2491	5707	8975	12294	15663
4.	Unrecovered Capital investment		-5636	-2420	+848	+4167	+7536

$$\begin{aligned} \text{Pay back period} &= 2 + \frac{2420}{3268} = \\ &= 2 + 0.74 = 2.74 \text{ Years} \end{aligned}$$

**ANNEXURE-16****NPV AND BENEFIT COST RATIO**

(NORMAL)

(Figure in '000 Tk.)

Year	Investment Cost	Net Cash inflow	Discount Factor at 15%	Present value of cash inflow (Benefit)
0	8127			
1		2491	0.8696	2166
2		3216	0.7561	2432
3		3268	0.6575	2149
4		3319	0.5718	1898
5		3369	0.4972	1675
6		3418	0.4323	1478
7		3464	0.3759	1302
8		3508	0.3269	1145
9		3550	0.2843	1009
10		9337	0.2472	2308
Total:-				17562

$$\text{NPV} = 17562 - 8127 = 9435$$

$$\begin{aligned} \text{Benefit cost ratio (BCR)} &= \frac{\text{Present value}}{\text{Capital Cost}} = \frac{17562}{8127} \\ &= 2.16 \end{aligned}$$

**ANNEXURE-17****INTERNAL RATE OF RETURN (IRR)  
(NORMAL)**

(Figure in '000 Tk.)

Year	Net cash inflow	Discount factor at 40%	PV at 40%	Discount factor at 35%	PV at 35%
1.	2491	.714	1779	.741	1846
2.	3216	.510	1640	.549	1766
3.	3268	.365	1193	.406	1327
4.	3319	.260	863	.301	999
5.	3369	.186	627	.223	751
6.	3418	.133	455	.165	564
7.	3464	.095	329	.122	423
8.	3508	.068	239	.091	320
9.	3550	.048	170	.067	238
10.	9337	.035	327	.050	467
Total Present Value:			7622		8701

$$\text{NPV at 40\%} = 7622 - 8127 = -505(\text{Negative})$$

$$\text{NPV at 35\%} = 8701 - 8127 = +574(\text{Positive})$$

$$\text{IRR} = \text{LRD} + \frac{\text{NPV of lrd}}{\text{NPV of lrd} - \text{NPV of hrd}} \times (\text{HRD} - \text{LRD})$$

$$\text{IRR} = 35 + \frac{574}{574 - (-505)} \times (40 - 35)$$

$$= 35 + \frac{574}{574 + 505} \times 5$$

$$= 35 + \frac{574}{1079} \times 5$$

$$= 35 + 2.66$$

$$= 37.66\%$$

$$\text{IRR} = 37.66\%$$

**SENSITIVITY ANALYSIS**  
**NET CASH INFLOW AT 40% HIGHER COST OF RAW MATERIALS**

(Figure in '000 Tk.)

SL. No	Particulars	Ist Yr.	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr	7th Yr	8th Yr	9th Yr	10thYr
1.	Raw Material Cost	602	602	602	602	602	602	602	602	602	602
2.	Raw Material cost at 3% inflation from 2nd Year.	602	620	639	658	678	698	719	741	763	786
3.	40% higher price in each year.	843	868	895	921	949	977	1007	1037	1068	1100
4.	Other variable cost	261	261	261	261	261	261	261	261	261	261
5.	3% inflation from 2nd year on other variable cost.	261	269	277	285	294	303	312	321	331	341
6.	Variable cost excluding interest on working capital (3+5)	1104	1137	1172	1206	1243	1280	1319	1358	1399	1441
7.	Interest on working capital	126	131	136	141	147	153	159	165	171	177
8.	Total variable cost (6+7)	1230	1268	1308	1347	1390	1433	1478	1523	1570	1618
9.	Earlier variable cost (Normal)	989	1020	1052	1084	1118	1153	1189	1226	1263	1302
10.	Excess cost at 40% higher price (8-9)	241	248	256	263	272	280	289	297	307	316
11.	Earlier net cash inflow (Normal).	2491	3216	3268	3319	3369	3418	3464	3508	3550	9337
12.	Net cash inflow(11-10)	2250	2968	3012	3056	3097	3138	3175	3211	3243	9021

SENSITIVITY ANALYSISCALCULATION OF PAY BACK PERIOD AT 40% HIGHER COST OF RAW MATERIALS

(Figure ni '000Tk.)

Particulars	0 yr.	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
Capital Cost	8127					
Net cash inflow		2250	2968	3012	3056	3097
Unrecovered capital investient		- 5877	- 2909	+103	3159	6256

$$\begin{aligned} \text{Pay back period} &= 2 + \frac{2909}{3012} \\ &= 2 + 0.96 = 2.96 \text{ Years} \end{aligned}$$

ANNEXURE-20SENSITIVITY ANALYSISNPV AND BCR CALCULATION AT 40% HIGHER PRICE OF RAW MATERIALS

(Figure ni '000Tk.)

Year	Net cash inflow	Discount factor at 15%	Present value
1	2250	0.8696	1957
2	2968	0.7561	2244
3	3012	0.6575	1980
4	3056	0.5718	1747
5	3097	0.4972	1540
6	3138	0.4323	1357
7	3175	0.3759	1193
8	3211	0.3269	1050
9	3243	0.2843	922
10	9021	0.2472	2230
Total:-			16220

$$\text{NPV} = \text{Present Value} - \text{Capital cost}$$

$$\text{NPV} = 16220 - 8127 = 8093$$

$$\text{BCR} = \frac{\text{NPV} + \text{C}}{\text{C}} = \frac{8093 + 8127}{8127} = \frac{16220}{8127} = 2.00$$

SENSITIVITY ANALYSISCALCULATION OF IRR AT 40% HIGHER PRICE OF RAW MATERIALS

(Figure in '000Tk.)

Year	Net cash inflow	Discount factor at 35%	Present Value at 35%	Discount factor at 33%	Present Value at 33%
1	2250	.741	1667	.752	1692
2	2968	.549	1629	.565	1677
3	3012	.406	1223	.425	1280
4	3056	.301	920	.320	978
5	3097	.223	690	.240	743
6	3138	.165	518	.181	568
7	3175	.122	387	.136	432
8	3211	.091	292	.102	328
9	3243	.067	217	.077	250
10	9021	.050	451	.058	523
Total:-			7994		8471

Capital cost = 8127

NPV at 35% = 7994 - 8127 = - 133 (Negative)

NPV at 33% = 8471 - 8127 = +344 (positive)

$$\text{IRR} = \text{LRD} + \frac{\text{NPV of lrd}}{\text{NPV of lrd} - \text{NPV of hrd}} \times (\text{HRD} - \text{LRD})$$

$$= 33 + \frac{344}{344 - (-133)} \times (35 - 33)$$

$$= 33 + \frac{344}{344 + 133} \times 2$$

$$= 33 + \frac{344}{477} \times 2$$

$$\text{IRR} = 33 + 1.44 = 34.44\%$$

**SENSITIVITY ANALYSIS**  
**NET CASH INFLOW AT 10% LOWER PRICE OF COMMODITY**

(Figure in '000 Tk.)

SL. No	Particulars	Ist Yr.	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr	7th Yr	8th Yr	9th Yr	10thYr
*1.	Net Sales	4334	5290	5449	5612	5781	5954	6133	6317	6507	6702
2.	Total Variable Cost	989	1020	1052	1084	1118	1153	1189	1226	1263	1302
3.	Interest on Term-loan	900	840	771	692	600	495	375	236	76	-
4.	Depreciation	249	223	201	181	164	148	134	122	112	102
5.	Other fixed cost	881	924	970	1018	1068	1120	1177	1235	1296	1360
6.	Total fixed cost (3+4+5)	2030	1987	1942	1891	1832	1763	1686	1593	1484	1462
7.	Profit before Tax (1-2-6)	1315	2283	2455	2637	2832	3040	3260	3501	3762	3940
8.	Tax (25%)	329	571	614	659	708	760	815	875	941	985
9.	Profit after Tax(7-8)	986	1712	1841	1978	2124	2280	2445	2626	2821	2955
10.	Salvage Value	-	-	-	-	-	-	-	-	-	5723
11.	Internally Generated fund(4+9+10)	1235	1935	2042	2159	2288	2428	2579	2748	2933	8780
12.	Net cash inflow (3+11)	2135	2775	2813	2851	2888	2923	2954	2984	3009	8780

\* 3% inflation rate has been calculated from 2nd year & onwards.

**ANNEXURE-23****SENSITIVITY ANALYSIS****CALCULATION OF PAY BACK PERIOD AT 10% LOWER PRICE OF COMMODITY**

(Figure ni '000Tk.)

Sl. No.	Particulars	0 yr.	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
1.	Capital cost	8127					
2.	Net cash inflow		2135	2775	2813	2851	2888
3.	Cumulative cash inflow		2135	4910	7723	10574	13462
4.	Unrecovered capital investment		-5992	-3217	-404	+2447	+5335

$$\begin{aligned} \text{Pay back period} &= 3 + \frac{404}{2851} \\ &= 3 + .14 = 3.14 \text{ Years} \end{aligned}$$

**ANNEXURE-24****SENSITIVITY ANALYSIS****BCR & NPV CALCULATION AT 10% LOWER PRICE OF COMMODITY**

(Figure ni '000Tk.)

Year	Net cash inflow	Discount factor at 15%	Present value
1	2135	0.8696	1857
2	2775	0.7561	2098
3	2813	0.6575	1850
4	2851	0.5718	1630
5	2888	0.4972	1436
6	2923	0.4323	1264
7	2954	0.3759	1110
8	2984	0.3269	975
9	3009	0.2843	855
10	8780	0.2472	2170
Total:-			15245

$$\text{NPV} = 15245 - 8127 = 7118$$

$$\text{BCR} = \frac{\text{NPV} + C}{C} = \frac{7118 + 8127}{8127} = \frac{15245}{8127} = 1.88$$



SENSITIVITY ANALYSISIRR CALCULATION AT 10% LOWER PRICE OF COMMODITY

(Figure in '000Tk.)

Year	Net cash inflow	Discount factor at 35%	Present Value at 35%	Discount factor at 30%	PV at 30%
1	2135	0.741	1582	.769	1642
2	2775	0.549	1523	.592	1643
3	2813	0.406	1142	.455	1280
4	2851	0.301	858	.350	998
5	2888	0.223	644	.269	777
6	2923	0.165	482	.207	605
7	2954	0.122	360	.159	470
8	2984	0.091	272	.123	367
9	3009	0.067	202	.094	283
10	8780	0.050	439	.073	641
Total :			7504		8706

Capital cost = 8127

NPV at 30% = 8706 - 8127 = (+) 579 (Positive)

NPV at 35% = 7504 - 8127 = (-) 623 (Negative)

$$\text{IRR} = \text{LRD} + \frac{\text{NPV of lrd}}{\text{NPV of lrd} - \text{NPV of hrd}} \times (\text{HRD} - \text{LRD})$$

$$= 30 + \frac{579}{579 - (-623)} \times (35 - 30)$$

$$= 30 + \frac{579}{579 + 623} \times 5$$

$$= 30 + \frac{579}{1202} \times 5$$

$$\text{IRR} = 30 + 2.41 = 32.41\%$$

**ANNEXURE-26****SUMMARY OF SENSITIVITY ANALYSIS**

SL. No.	Critical Assumption	Pay cack Period (YEARS)	NPV @15% (TK.'000)	BCR @15% (Ratio)	IRR (%)
a.	Normal (main results)	2.74	9435	2.16	37.66%
b.	Product price lower by 10%	3.14	7118	1.88	32.41%
c.	Raw material cost higher by 40%	2.96	8093	2.00	34.44%

**ANNEXURE-27****DEBT SERVICE COVERAGE RATIO**

(Figure in ' 000 Tk.)

Particulars	1st Year	2nd Year	3rd Year	4th Year	5ht Year
1. Net profit	1335	2160	2302	2452	2613
2. Add. Depreciation	249	223	201	181	164
3. Add. Interest on term loan	900	840	771	692	600
4. Total :-	2484	3223	3274	3352	3377
5. Term loan instalment	400	460	529	608	700
6. Interest on term loan (add.)	900	840	771	692	600
7. Total :-	1300	1300	1300	1300	1300
Debt Service Coverage ratio (4:-7)	1.91	2.48	2.52	2.58	2.60

(46)

COMPUTATION OF DEPRECIATION

(Annexure-28)

Year	Buildings (5%)		Plant & equipment (10%)		Vehicles (15%)		Other fixed Assets (15%)		Total Annual Depreciation.
	Value (end of period)	Depreciation.	Value (end of period).	Depreciation.	Value (end of period).	Depreciation.	Value (end of period).	Depreciation.	
0	1556	-	885	-	378	-	166	-	-
1	1478	78	796	89	321	57	141	25	249
2	1404	74	716	80	273	48	120	21	223
3	1334	70	644	72	232	41	102	18	201
4	1267	67	580	64	197	35	87	15	181
5	1204	63	522	58	167	30	74	13	164
6	1144	60	470	52	142	25	63	11	148
7	1087	57	423	47	121	21	54	9	134
8	1033	54	381	42	103	18	46	8	122
9	981	52	343	38	88	15	39	7	112
10	932	49	309	34	75	13	33	6	102
Written down value	932		309		75		33		
Total Depreciation.		624		576		303		133	1636

(46)

**ANNEXURE-29****SALVAGE VALUE**

(Figure in '000 Tk)

SL No.	Item	Written down value
01.	Buildings	932
02.	Plant & equipments	309
03.	Vehicles	75
04.	Other fixed assets	33
Total :-		1349

Total written down value = 1349

Add. Undepreciated Capital (Land) = 4280

Add. Margin money = 94

Total Salvage Value = 5723

## BREAK EVEN QUANTITY AND MARGIN OF SAFETY

SL. No.	Particulars	Ist Yr.	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr	7th Yr	8th Yr	9th Yr	10thYr
1	Production in kg.	80250	95125	95125	95125	95125	95125	95125	95125	95125	95125
2.	Total variable cost(in '000 Tk.)	989	1020	1052	1084	1118	1153	1189	1226	1263	1302
3.	Average variable cost (in Tk) $2 \div 1$	12.32	10.72	10.06	11.40	11.75	12.12	12.50	12.89	13.28	13.69
4.	Price per kg.(in taka.)	60.00	61.80	63.654	65.563	67.529	69.554	71.640	73.789	76.002	78.282
5.	Total fixed cost (in '000 taka).	2030	1987	1942	1891	1832	1763	1686	1593	1884	1462
6.	Price-AVC(in taka)4-3	47.68	51.08	52.594	54.163	55.779	57.434	59.140	60.899	62.722	64.592
7.	Break even quantity in kg.( 5 - 6).	42575	38900	36924	34913	32844	30696	28509	26158	30037	22634
8.	Margin of safety in kg.(1-7).	37675	56225	58201	60212	62280	64429	66616	68967	65088	72491
9.	Break even % ( <u>Break even qty x 100</u> ) <u>Total quantity.</u>	53.05	40.89	38.82	36.70	34.53	32.27	29.97	27.50	31.57	23.79
10.	Margin of safety in % ( 8- 1).	46.95	59.11	61.18	63.30	65.47	67.73	70.03	72.50	68.42	76.21

**ANNEXURE-31****LOAN REPAYMENT SCHEDULE**

(Figure in Taka)


Year	Instalment	Interest	Total repayment	Closing Balance
0	--	--	--	60,00,000
1	4,00,000	9,00,000	13,00,000	56,00,000
2	4,60,000	8,40,000	13,00,000	51,40,000
3	5,29,000	7,71,000	13,00,000	46,11,000
4	6,08,350	6,91,650	13,00,000	40,02,650
5	6,99,603	6,00,397	13,00,000	33,03,047
6	8,04,543	4,95,457	13,00,000	24,98,504
7	9,25,225	3,74,775	13,00,000	15,73,279
8	10,64,009	2,35,991	13,00,000	5,09,270
9	5,09,270	76,390	5,85,660	--
Total:-	60,00,000	49,85,660	1,09,85,660	--

**ANNEXURE-32****CALCULATION OF WAGES & SALARIES.**

Sl. No.	Designation	Number	Monthly Salary	Annual Salary
1.	Manager	1	6500	78000
2.	Fishery Officer	1	3500	42000
3.	Accountant-cum-Cashier	1	3500	42000
4.	Field Supervisor	2	5000	60,000
5.	Sales supervisor	2	6000	72000
6.	Typist-cum-clerk	1	2400	28800
7.	Ice. Operator-cum-godown keeper.	1	2400	28800
8.	Driver	1	2400	28800
9.	Skilled Labour	4	6000	72000
10.	Caretaker-cum-Guard	4	6000	72000
Total:		18	43700	5,24,400

Total Annual Salary=	5,24,400
Add.Fringe benefit @ 35%=	1,83,540
Add. P.F. contribution @10%=	52,440
Grand Total :	7,60,380

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

②   
26.2.98

**PROJECT PROPOSAL**

Title of the  
Project Proposal : Honey Processing Project  
in Sanmenxia

Country : China

Project Proposal  
Prepared by : Gao Maolin

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
India, Philippines and Japan



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# C O N T E N T S

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Acknowledgement

Chapter 1. Introduction

2. Background

3. Summary

4. Project details

5. Organization

6. Implementation and production plan

7. Project cost

8. Benefit-cost analysis

9. Maps of the project area



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This project was formulated by applying the approach and techniques I learned from the 12th ICA- Japan training course on "Strengthening Management of Agricultural Cooperatives in Asia".

As a participant I would like to express my heartfelt thanks to ICA and Japanese government for providing financial support for it and their excellent planning.

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I would never forget the days I studied in India with other participants from ten countries. I could share useful experiences with them on cooperative management. Furthermore we could share friendships and help each other.

I would like to take this opportunity of expressing my sincere appreciation to ACFSMC, equally to Mr. Jiao Tianli, director of the International Cooperative Department for giving me this very valuable opportunity. And a lot of personal thanks to my colleagues who have helped me in one way or the other.

This training course has given me more capabilities about cooperative management because of the strong technical inputs. So I could produce this project technically as possible as I could. I hope it will provide a valuable framework for planning and implementation.

February, 1998  
Gao Maolin  
ACFSMC, Beijing, China

## 1. Introduction

China has achieved a great economic growth since opening to the outside world and reform the economic system. The national economic growth is estimated at 8.8 percent for 1997. This is favourable for the development of medium and small enterprises.

Sanmenxia is a developing city in Henan province which located at the joint place of middle and west of China. This area consists of 6 countries(city,district). The total area is 10,496 square kilometres. Most people (1.61 millions) live in urban districts. The total hilly area is 9527 ares. Due to poor natural condition, there are still 385 villiges, 92,000 households, 380,000 farmers live under the national average povety level. The average personal annual income is not more than 800 yuan (US\$95).

On the other hand, the hilly areas are rich in dense forest. Many plant like orchard, blossom, acacic grow there. They are rich resoure for raising honeybee. According to incomplete statistics, they can feed 240,000 boxes honeybee, which means the annual production of honey is 10,000 Tonnes. This is the main channel of the farmers' income.

Meanwhile, in lack of deep-processing and less of value addition, the farmers found some trouble in sales. Many honey was wasted every year.

As we know, honey is one of the important anxilary material of medicinal, beverage, cigarette, cosmetics etc., and also a kind of nice food, they are strong in the international consuming market. There are about 340,000 tonnes finished honey suppling in the international market per annum, in which 100,000 tonnes from China which running 26.5% of the all. Furthermore, the honey price is going rise as a kind of natural food material.

## 2. Background

Sanmenxia Corporation for Agricultural Produce and Fruit (SCAPF) is a direct enterprise of Sanmenxia Federation of Supply and Marketing Cooperatives (SFSMC) which founded in 1971.

SCAPF has engaged in native product for a long time. After a little more than 3 years of honey processing experience, they has now 3000 tonnes annual capacity of finished honey . But this can not satisfy the 10,000 tonnes honey supplying market of the area. If the volume of honey out is to be maintained, the farmers have to sell their honey in more lower price, certainly they have to waste more.

To meet the supply of 10,000 tonnes honey per annum, a new processing factory for 8,000 tonnes capacity or finished honet capacity is in urgant position.

## 3 .Summary

- 3.1 This project is to construct a new honey processing factory in Sanmenxia. The project wil be implemented and ran by SCAPF.
- 3.2 The objects of the project are to bring about a qualitive and quantitative improvement in cooperatives services to member-farmers with the ultimate objective of increasing members' income ,through the value addition methods and provide farmers with extension service .
- 3.3 Total investement of the project is 12 million yuan RMB.
- 3.4 They are different sources of the fund ,subsidy from SFSMC(2.4 million yuan), long-term loan from government (5.6 million yuan), own capital( 2. 4 million yuan), share capital(1.6 million yuan).
- 3.5 Nominal annual product of the project is 8000 tonnes finished honey.
- 3.6 The raw honey is to be collected from honeybee raiser through the primary cooperatives. The purching channel is shown in exhibit 1.

exhibit 1:

country	amount tonnes	province
luolin	400	Henan
shongxian	500	Henan
luancuan	650	Henan
tanqu	500	Shaanxi
pinglu	600	Shaanxi
xiaxian	500	Shaanxi
yuencheng	600	Shaanxi
ruicheng	600	Shaanxi
dali	300	Shaanxi
pucheng	400	Shaanxi
shangzhou	400	Shaanxi
weinan	500	Shaanxi
tongguan	400	Shaanxi
total	6350	

3.7 The internal market is to be based on the long term trade partners, such as Beijing, Danian, Shanghai and etc. The direct international market is Japan. The Helan Company of Import and Export will act as agent for the indirect market. ;

3.8 The construction period of the project will be about 4 months.

3.9 The results of financial analysis of the project are as follows. Payback period is 2.1 years. Internal Rate of Return (IRR) is 42.47%. Net Present Value (NPV) is 521 yuan RMB. They show the financial viability of the project, which will be 10 years include 4 months of construction.

3.10 There are 110 persons will be employed as the section chief and the workers.

3.11 The preparation for marketing investigation, equipment, long-term loan application is on the timetable.

#### 4. Project details

##### 4.1 project area

The project is proposed to be established in the existing 18 acres plot of land owned by the SCAPP where stands the 3000 tonnes capacity plant. It has easy traffic and transportation, where nearby the railway station, and with 2 kilometres from the national level road.

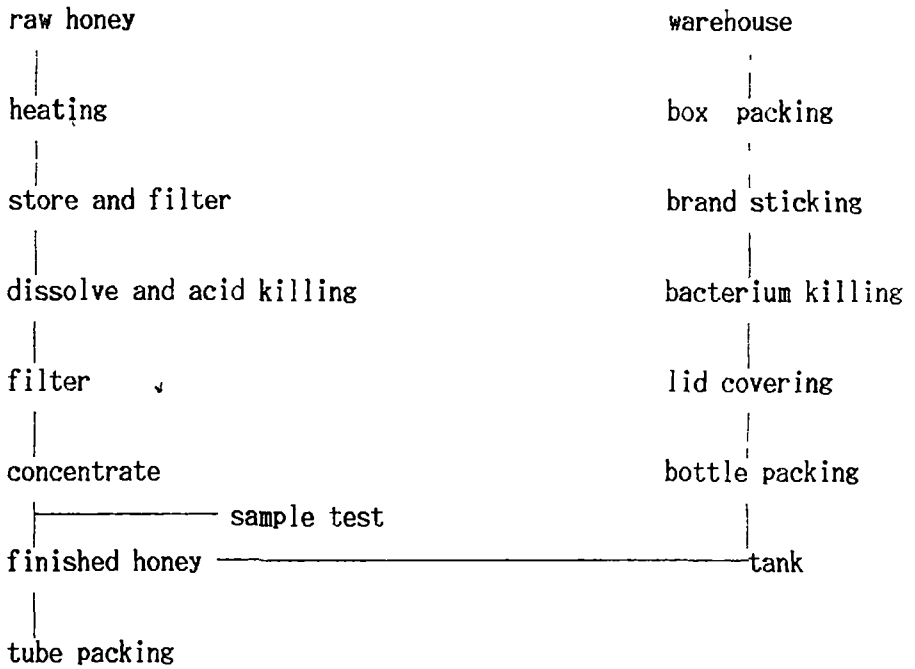
##### 4.2 Building

The utilization of the land where the 3000 tonnes capacity building stands now is very lowly. The size of replace building will be 3200 m<sup>2</sup>, with 5 floors for produce plant, packing plant, laboratory and office. (see exhibit 4)

##### 4.3 Equipment

To meet the 8000 tonnes capacity, the existing equipment which can be used will be retained. Other machines must be ordered and delivered are listed as in exhibit 5. The auxiliary equipment for water supply system (210 metres), electricity-supply system (50 kilowatt) are list in exhibit 4.

4.4 The 2 processing lines and flow diagram are showed as follows. (exhibit 2)



( processing line)

( packing line)

#### 4.5 Packing plan

The total product of finished honey is 8, 000 tonnes, in which cub-packing is 7,000 tonnes, 298Kg per cub. Bottle-packing is 1,000 tonnes, 0.5 Kg per bottle, 12 bottles per box.

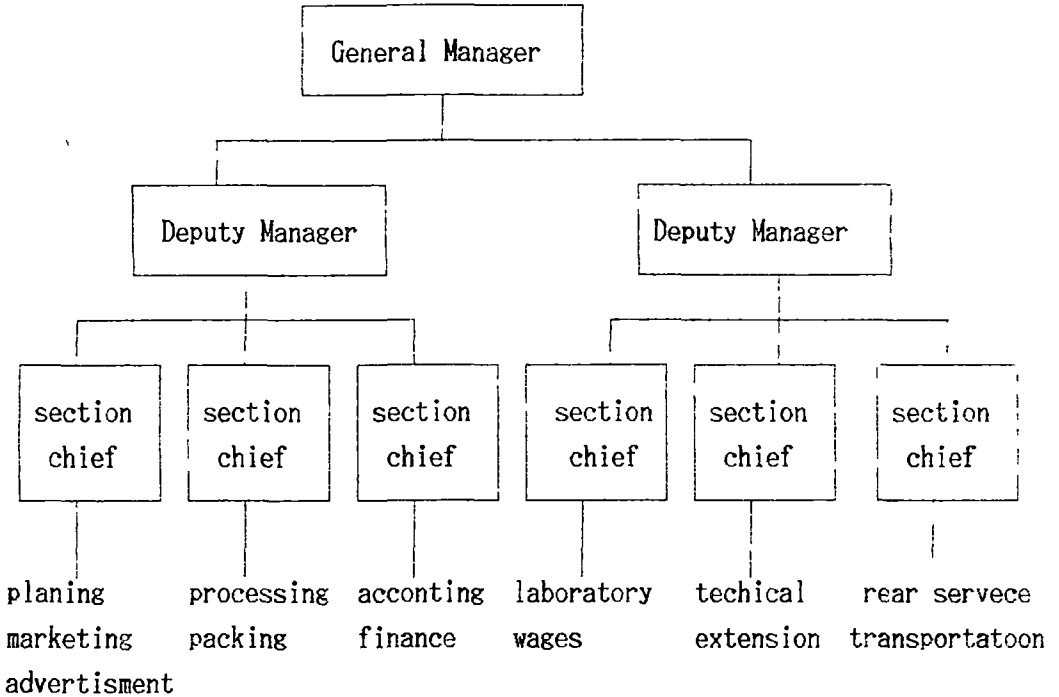
#### 4.6 Purchase and sale areas

The raw honey will be collected from 3 areas: native area( 10, 000 tonnes) the neighbouring countries and neighbouring provinces ( 6360 tonnes). They are showed in exhibit 1.

### 5. Organization

5.1 A new organization of management should be created for the operation of the project. The system can be estimated as follows.

exhibit 3:



## 5.2 Task of the section

### 1) General Manager & Deputy General Manager

A general manager responsibility system will be estimated. There will be 1 General Manager (GM), 2 Deputy General Managers (DGMs). The role of the GM is to control the overall operation of the project, and make an important decision according to law and related regulation. In the absence of GM, a DGM can be appointed to be in executive position. One DGM for line department, one for staff department as exhibit 3 showed.

### 2) Chief Section

There will be 6 section chiefs in the project according to the responsibility chart. They assist the DGM and put more attention on their duty as exhibit list .

### 5.3 Empolyment of manpower

#### 1) GM & DMG

They should be experienced persons which can be selected from the corperation by the board of SCAPP.

#### 2) Section chief

The 6 section chiefs can be selected from the experienced employees .Their probation will be 1 year (or in the trial processing period).

#### 3) Others

There are 2 producing lines for processing and packing. 12 people can run the processing line,36 people must be employed for 3 teams. 15 people can run the packing line,45 people must be employed for 3 teams. 13 people must be employed for labouratory and other position.6 people for the Section Chief. So 110 people will be employed for the project.

### 6. Implementation and production plan

6.1 It is expected that all formalites relating to the project,such as a formal appoval of the board for submission of the proposal to a funding agency, negotiation with and saction by the funding agency, government clearnances,etc. will be completed withine 2 months.

After the project sanction and fund permission, the whole designs work will be completed within 15 days .The project construction work will be completed in 5 months, while the machine being ordered and delivered, the install time is 15 days, the totale construction time is 4 months. They are showed in exhibit 8.

6.2 The installed capacity of the project is 8000 tonnes per annum, at 50% of the rated capacity (4,000 tonnes)in the first year of operation. To reach 80% in the second year, and is expected to be scaled up to 100% utilisation of capacity in the third year (8,000 tonnes).



## 7. Project cost

### 7.1 Basic Assumption

The financial analysis of the project is based on the following assumptions.

- 1) Project period is 10 years including the construction period.
- 2) The life of the plant, machinery, equipment and laboratory apparatus can be safely assumed at 10 years on the basis of the act of tax law.
- 3) Depreciation is calculated by the straight method with 10% of the all fixed assets, the salvage value being 5%.
- 4) The total project cost is 12 million yuan RMB. The variable cost of the project is 5164 million yuan and the fixed cost is 769 million yuan (the 3rd year).
- 5) The amount of tax will be 550 yuan (the 3rd year).
- 6) Interest rate of the fund is assumed at 12%. Total interest of the project loan will be 141 million yuan (the 3rd year). The payment schedule is showed in exhibit 6.
- 7) The selling cost is assumed at 5% of the sale value.
- 8) The administrative cost is assumed at 8% of the sale value.
- 9) The working capital is assumed at 30% of the investment.

7.2 The total project cost are estimated at 12 million yuan RMB, the details are as follows:

exhibit 4

0,000 yuan

	classification	size & quantity	amount	remark
1	building	3,200 m <sup>2</sup>	256	3200*800
2	water tube	200 m	20	200*1000
3	electric system	50 kw	14	
4	equipment, <i>vehicle</i>		455	see exhibit 5
5	install, trial		15	
6	others		40	
7	working capital		400	exhibit 20
	total		12000	

exhibit 5

0,000 yuan

	items	size	amount	remarks
1	distiller	2	20	2*10
2	computer	2	8	2*4
3	reservoir	1	7	
4	pump & tube	1 set	5	
5	packing line	1 set	46	
6	germ killer	1	6	
7	rotaty cover	1	8	
8	working tub	25000	300	25000*
9	laboratory	1 set	5	
10	<i>vehicles</i> vehicle	5	50	5*10
	total		455	

7.3 The funds of the project costs will be raised from the following various sources.

exhibit 6

0,000 yuan

source	amount	interest rate	repayment year		
			1	2	3
1)SFSMC's subsidy	240				240
2)goverment's loan	560	12%	100	300	160
3)share capital	160				
4)own capital	240				
total	1200	12%			
total interest	141		67	55	19

\*The SFSMC's subsidy will be repayed in the 3rd year, goverment's loan will be repayed in 3 years as the schedule showing.

7.4 The cost of the othe items for the project at 100% capacity are as follows:

exhibit 7

0,000 yuan

items	unit price	amount	remarks
1)packing material	500 yuan	350	500*7000
2)packing bottle	188 yuan	188	188*1000
3)water	3 yuan	3.6	3*1.5*8000
4)electric power	15 yuan	6	0.5*15*8000
5)fuel	5 yuan	4	5*8000

\*water at the price of 1.5 yuan per tonne, 3 tonnes for finished honey per tonne.

\*electic power at the price of 0.5 yuan per KW,15 KW for finished honey per tonne.

\*fuel at 5 yuan for finished honey per tonne.

## 8. Benefit-cost analysis

8.1 The buying price per tonne and total cost are expected as follows:

exhibit 8

0,000 yuan

items	unit price	quantity <i>tonnes</i>	amount
acacic honey	5800 yuan	7168	4157
other honey	5400 yuan	1792	968
total		8960	5125

8.2 The sale price per tonne of finished honey and total income are expected as follow:

exhibit 9

0,000 yuan

item	quantity tonnes	sale price (yuan)	total income		
			capacity 50%	capacity 80%	capacity 100%
internal market	3000	11000	1208	1933	2416
1) acacic honey	2000	6900	690	1104	1380
2) other honey	600	6600	198	317	396
3) bottle acacic honey	400	16000	320	512	640
international market	5000	16000	4825	4520	5650
1) acacic honey	3400	9500	1870	2992	3740
2) other honey	1000	6600	475	760	950
3) bottle acacic honey	600	9500	480	768	960
total income	8000		4033	6453	8066

\*It can be seen the annual income of the project is 8066 yuan at capacity of 100%.

### 8.3 Details of fixed cost and variable cost

1) The fixed cost of the project is assumed to 8,650,000 yuan at the capacity of 100%.

exhibit 10

3rd year 0,000 yuan

item	amount	remarks
Depreciation	76	$800 \times (1-5\%) / 12$
Administrative Cost	645	$8066 \times 8\%$
Loan Interest	144	$1200 \times 12\%$
total	865	

2) The variable cost is assumed to 61,540,000 yuan at the capacity of 100%.

exhibit 11

3rd year 0,000 yuan

item	amount	remarks
Direct material	5125	$4157 + 968$
Packing material	538	$350 + 188$
Water, Power, Fuel	16	$3.6 + 6 + 4$
Selling Cost	403	$8066 \times 5\%$
Manufacturing Expence	645	$8066 \times 8\%$
Wage	60	$110 \times 400 \times 12\% \times (1+14\%)$
total	6154	

\*Manufacturing expence are indirect materials, indirect labour, factory supplies, utilites, repairs and etc.

8.4 The annual Fixed Cost and Variable Cost are as follows:

exhibit 12

0,000 yuan

	1	2	3	4	5	6	7	8	9	10	total
Vaviable Cost (a)	3077	4923	6154	6154	6154	6154	6154	6154	6154	6154	
1)material	2563	4100	5125	5125	5125	5125	5125	5125	5125	5125	
2)packing material	269	430	538	538	538	538	538	538	538	538	
3)water,power,fuel	8	13	16	16	16	16	16	16	16	16	
4)selling cost	201	322	403	403	403	403	403	403	403	403	
5)manufacturing expencc	6	10	12	12	12	12	12	12	12	12	
6)wage	30	48	60	60	60	60	60	60	60	60	
Fixed Cost (b)	505	721	865	769	769	769	769	769	769	769	
1)depreciation	38	61	76	76	76	76	76	76	76	76	
2)administrative	323	516	645	645	645	645	645	645	645	645	
3)loan interest	144	144	144	48	48	48	48	48	48	48	
Total Cost (a)+(b)	3582	5644	7019	6923	6923	6923	6923	6923	6923	6923	

\* Total cost is 69,230,000 yuan at the 100% capacity.

8.5 Cash Flow of the project

exhibit 13

0,000 yuan

	1	2	3	4	5	6	7	8	9	10	total
Cash Inflow (a) (Sale Value)	4033	6453	8066	8066	8066	8066	8066	8066	8066	8066	
Cash Outflow (b)	4933	5791	7513	7545	7545	7545	7545	7554	7545	7545	
1)Asset Investment	800	-	-	-	-	-	-	-	-	-	
2)Working Capital	400	-	-	-	-	-	-	-	-	-	
3)Total Cost	3400	5395	6799	6799	6799	6799	6799	6799	6799	6799	
4)Tax	275	440	550	550	550	550	550	550	550	550	
5)Income Tax	58	136	164	196	196	196	196	196	196	196	
Net Cash Flow (a)-(b)	-900	482	553	521	521	521	521	521	521	521	3782
Gross Cash Flow	0	-418	135	656	1277	1698	2219	2740	3261	3782	
Net Present Value (1i=10%)	-900	438	457	391	356	323	294	267	243	221	2090
Gross Cash Flow		-462	-5	386	742	1065	1359	1626	1869	2090	
Net Present Value (1i=12%)	-900	430	441	370	331	296	264	236	210	188	1866
Gross Cass Flow		-470	-29	341	672	968	1232	1468	1678	1866	

\*NPV(1C=10%)=2090

NPV(1C=12%)=1866

\* Return Rate of total investment can be seen :

exhibit 14

0,000 yuan

year	Net Cash Flow	interest rate 10%		interest rate 12%	
		DCF	NPV	DCF	NPV
1	-900		-900		-900
2	482	0.9090	438	0.8929	430
3	553	0.8264	457	0.7972	441
4	521	0.7513	391	0.7110	370
5	521	0.6830	356	0.6335	331
6	521	0.6209	323	0.5674	296
7	521	0.5645	294	0.5066	264
8	521	0.6132	267	0.4523	236
9	521	0.4665	243	0.4039	210
10	521	0.4241	221	0.3606	188
total	3782		2090		1866

8.6 The total tax of value added tax and city construction tax is 5,500,000 yuan at 100% capacity.



exhibit 15

0,000 yuan

	1	2	3	4	5	6	7	8	9	10	total
Sale Value (total income) (a)	4033	6453	8066	8066	8066	8066	8066	8066	8066	8066	
Direct Material (b)	2563	4100	5125	5125	5125	5125	5125	5125	5125	5125	
Value-added Tax {(a)-(b)}*17%	250	400	500	500	500	500	500	500	500	500	
City Construction Tax, Education Tax added (c)*10% (d)	25	40	50	50	50	50	50	50	50	50	
Total Tax (c)+(d)	275	440	550	550	550	550	550	550	550	550	

## 8.7 Profit Analysis:

exhibit 16

0,000 yuan

	1	2	3	4	5	6	7	8	9	10	total
1) Sale Value	4033	6453	8066	8066	8066	8066	8066	8066	8066	8066	
2) Variabl Cost	3077	4923	6154	6154	6154	6154	6154	6154	6154	6154	
3) Depreciation	38	61	76	76	76	76	76	76	76	76	
Gross Profit (a) (1)-{(2)+(3)}	918	1469	1836	1836	1836	1836	1836	1836	1836	1836	
4) Administrative expencc	323	516	645	645	645	645	645	645	645	645	
Earning Befor Tax (a)-(4) (b)	595	953	1191	1191	1191	1191	1191	1191	1191	1191	
5) Interest	144	144	144	48	48	48	48	48	48	48	
Profit Befor Tax (b)-(5) (c)	451	809	1047	1143	1143	1143	1143	1143	1143	1143	
6) Tax	275	440	550	550	550	550	550	550	550	550	
Profit After Tax (c)-(6) (d)	176	369	497	593	593	593	593	593	593	593	

## 8.8 Selected Financial Data

exhibit 17

Year	1	2	3	4	5	6	7	8	9	10	total
1) Pay-back Period											2.1
2) IRR				43%							
3) BEP (at the percent of sales)	74.2	66.1	63.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	

\*The Internal Rate of Return for the project is as:

$$\text{coefficient of net cast flow} = \frac{\text{investment cost}}{\text{net cash flow}} = \frac{1200}{521} = 2.303$$

check the table of present value interest factor of an ordinary annuity, the coefficient is between 40% and 50%, IRR is assumed as  $X\% + 40\%$ , so

40%		2.414		
	} X%			} 0.111
?	%		} 10%	
		2.303		} 0.449
	50%			1.965
X	0.111			
<hr/>				
10	0.449	X=2.47		IRR=2.47%+40%=42.47%

\*The Break-even Point is calculated as

$$\text{BEP in terms of amount of sales} = \frac{\text{fixed cost}}{\text{contribution}} * 100\% = \frac{769}{1362} * 100\% = 56.5\%$$

$$\begin{aligned} \text{contribution} &= \text{sales realisation} - \text{variable cost} \\ &= \text{sales realisation} - \text{total tax} - \text{variable cost} \\ &= 8066 - 550 - 6154 \\ &= 1362 \end{aligned}$$

$$\begin{aligned} * \text{ payback period} &= \frac{\text{investment}}{\text{average NCF} + \frac{\text{salvage value}}{\text{total years}}} = \frac{1200}{521 + \frac{400}{10}} = 2.1 \text{ years} \end{aligned}$$

## 8.9 Sensivity Analysis

exhibit 18

0,000 yuan tonnes

item	the 4th year	assumption			
		investment increase 10%	VC increase 5%	production decrease 5%	selling price decrease 5%
1 Fixed cost	769	769	769	769	769
2 Variable cost	6154	6154	6154	6154	6154
3 sale value	8066	8066	8066	7663	7663
4 BEP	63.5%	56.5%	73%	61%	80%
5 Fixed Asset	800	800	800	800	800
6 Working Capital	400	400	400	400	400
7 selling tax	550	550	550	550	550
8 IRR	43%	39.7%	8.3%	41%	5.4%

\*According to the above analysis, variable cost and sale price are the more sensivity to the project.

## 8.10 Implementation schedule of the project

exhibit 19

	No	Description	Code	IP	Duration(6 months)						
					1	2	3	4	5	6	
project prepare	1	internal decision	A		—						
	2	draft design of	B		—						
	3	projet details	C		—	—					
	4	getting the fund support from Fed&Gov getting constrution permission from Govt	D			—					
building & machinary	5	draft design of building	E			—					
	6	building construction	F				—	—			
	7	set up machinary	G							—	
	8	trial	H								—
material resouce & marketing	9	raw material ordered	I				—				
	10	marketing advertisment	J					—			
human resorce & training	11	orgnization detailes	K								—
	12	training	L								—

## 8.10 Working Capital Requirement

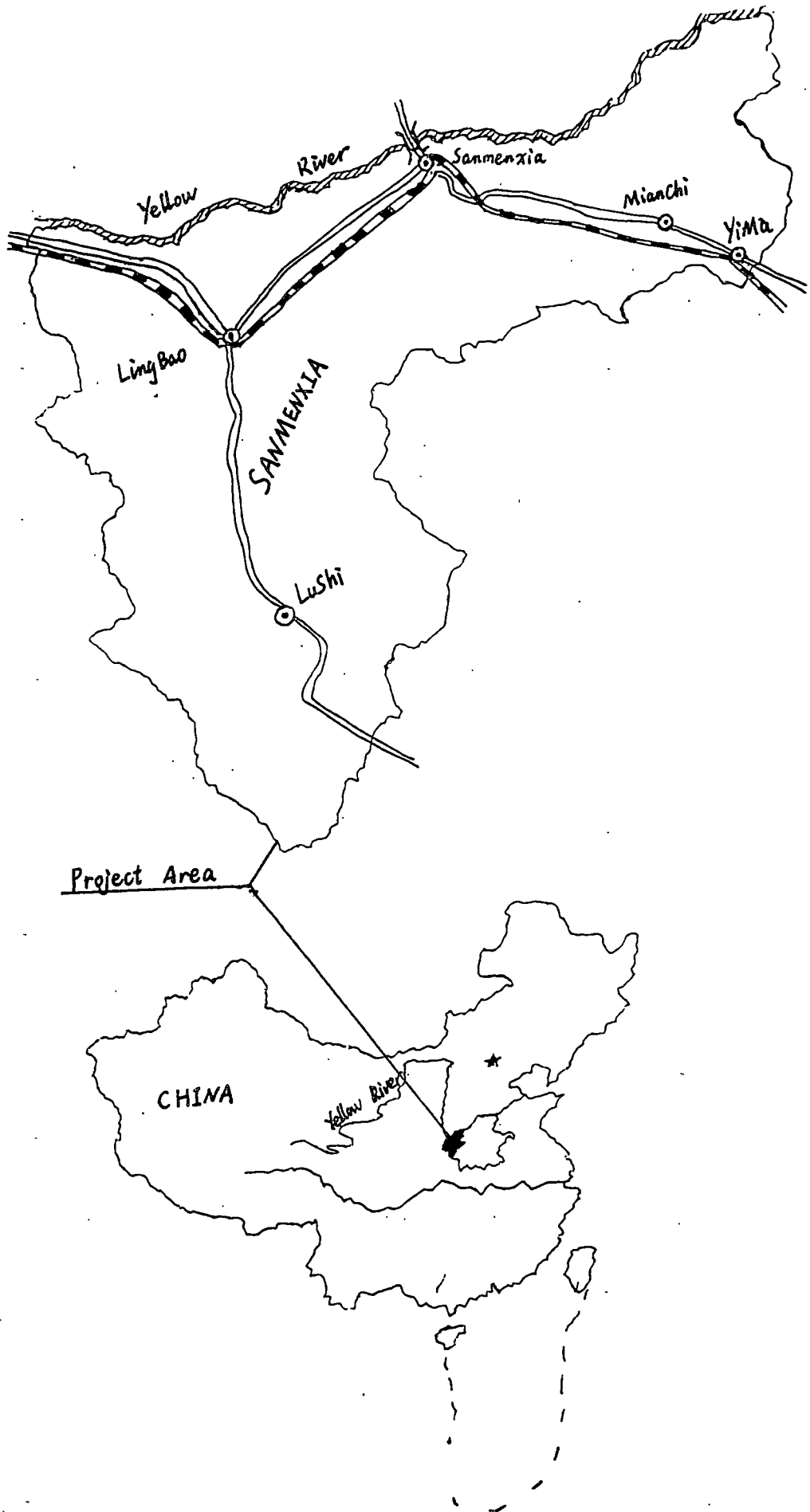
The expected cost of goods sold is as follows, Raw materials are expected to remain in store for an average of 2 months before issue to production. Each unit of production is expected to be in process for 1 month. Finished goods will stay in the warehouse awaiting despatch to customers for about 1 month. Credit allowed by creditors is 2 months from date of delivery of raw materials. Credit given to debtors is 2 months from the despatch of goods.

exhibit 20

0,000 yuan

input	period <i>months</i>	raw material	work in process	finished goods	debtors	creditors	total
1. raw material							
1) in stock	1/2	237					237
2) in work-in-process	1/2		237				237
3) in finished goods	1			473			473
4) credit from creditor	2					946	(946)
2. manufacturing expense							
1) in work-in-process	1		6				6
2) in finished goods	1			6			6
3) in debtors	2				12		12
3. selling administration and finished goods expense							
1) in finished goods	1			87			87
2) in debtors	2				174		174
4. profit in debtors							
	1				106		106
total (1+2+3+4)		237	243	566	292	(946)	392

9. Map of thr project area



TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
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AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

3  
27.2.98

**PROJECT PROPOSAL**

Title of the  
Project Proposal : ALCOHOL PRODUCTION THROUGH  
PROCESSING OF MAIZE PROJECT

Country : CHINA

Project Proposal  
Prepared by : BAI TAO

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
**in collaboration with its Member-Organisations in**  
**India, Philippines and Japan**



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Lastly, I thank my dear classmates from different countries for giving friendly help.



## EXECUTIVE SUMMARY

Project Title: Alcohol production through processing of maize project

Objectives: The project aims to build a modern plant to produce alcohol, DDGS (drying dregs grains) and edible carbon dioxide. Through processing of maize, promote comprehensive use of crops, improve additional value of agro-produce and income of farmers.

Methodology: 1、 Considering it is difficult to get large long term's loan from local bank to introduce equipment at first, so the project prospects to apply for supplier's Credit to import equipment from foreign country.

2、 The production equipment should be of advanced lever in 90's over the world. Through intensive selection and comparison of price and quality, the company from Italy is selected.

3、 The production of alcohol is designed to be 15,000 tons per year. The side products are DDGS and edible carbon dioxide, the production are 8000 tons and 4000 tons per year respectively.

4 、 The infrastructure facilities such as land and building should be bought instead of rent. The trucks will be provided by the primary members.

5 、 The cost of equipment will be repaid within 5 years of operation. The dividend for members is proposed to be 30% of net cash surplus.

6 、 Sales of alcohol and edible carbon dioxide should be paid by cash, DDGS will have a 3 months' credit for members or farmers.

Conclusion : 1 、 Layout changes can be streamlined and thereby production increased.

2、 Management of the plant must be advanced, scientific. Operators in this plant should have more than qualification of middle specialized school, and can be trained scientifically to operate machine.

3、 Work land should be made equitable or job rotation ensured to reduce work fatigue on a work.

4、 Analysis of mechanical breakdown and output should be analyzed, promote coordinator to improve the efficiency.

## BACKGROUND

After opening to the outside world, China's economy has a great development. The living level of people is increasing rapidly also.

China is a big agriculture country with huge population, there are 75% of population living in rural area, so development of agriculture is most important in China. Most of farmers depend on sales of agro-produce. Since carry out "Socialist Market Economy" in China, sometimes farmers are worry about that they can not keep track of the market's fluctuation of the price of crops.

According to increasingly development of modernization in other industries, China's government encourage and have made preferential policies to realize collectivization and mechanization in agriculture . In order to improve income of farmers, resist the risk of market, the government at all levers have attached importance to bring all agriculture's potentialities into full play, made preferential policies to advance the course of industrialization in rural area, encourage to take the road of integrating with production, supply and marketing.

Last year, government of China cancel the policy of exporting maize in order to meet domestic demand. This new policy will reduce profits made by foreign business companies. Shanxi provincial Federation of Supply and Marketing Cooperatives is also worry about this.

## INTRODUCTION

The processing plant in this project will be situated in Xinjiang county ,Shanxi, China. This project is prepared by and will be implemented by Xinjiang County Supply and Marketing Cooperative.

As a important material of food 、 medicine 、 and chemical industry, alcohol plays more and more wide roles in many fields of economy. DDGS (drying dregs grains ) is a kind of high protein feed for animal's feeding. Alcohol and DDGS have a good market not only in domestic but also in international.

At present, the most alcohol production plants in China are backward, the technology and management are not so advanced. For example, according to international standard, one ton production of alcohol need 3.0-3.2 tons of maize (content of starch is 60%), but in these plants will need 3.4-3.6 tons.

In this project, one important point is introducing additional equipment to produce DDGS, another important side production is edible carbon dioxide also has a good market.

This project will give a detailed study of processing of maize to analyzed the feasibility.

Starch is main ingredient of maize, meanwhile is main raw material of alcohol. One ton alcohol need two tons' starch.

Edible alcohol is an important material of foods, medicine and medical industry, the demand and price of alcohol is going up recent years. DDGS is a kind of refined feed with highly nutritive value for cow, sheep, pig, chicken and fish etc. and has a good market both in domestic and international.

The estimated demand of alcohol in 2000 will reach 4.5 million tons. According to the data about 1996, the total annual output is 3.3 million tons. So there is a great gap between actual production and estimated demand.

In the last few years, in order to reduce pollution, many governments of different countries encourage to use new energy including alcohol instead of petrol. So alcohol will have a good market in the future.

Because of above mentioned, Xinjiang Supply and Marketing Cooperative decided to select this project. They contact local government, the officers support the project, they will help cooperative to apply for buyer's credit, and will coordinate with bank. Shanxi Federation of Supply and Marketing Cooperatives certainly will support this project.

## FEATURE OF PROJECT AREA

Shanxi province is in north China. It's climate is characterized by climatic type of continental zone. The climate in the whole is mild with no intense heat in summer and no bitter cold in winter. Shanxi is in Bohai Rim Economic Development Zone. It is the base of energy, heavy and chemical industry in China.

Xinjiang is in south Shanxi, near the city-Taiyuan, has a convenient transportation and communication. It is rich in water resources, Fen River passes through the county. Its population is 0.34 million.

Agriculture is the main occupation of the people in this area. Crops growing and planting is the most important aspect of agriculture. The total cultivated area is about 23,000 hectares. The main crops include maize, wheat, potato, beans and Chinese medical herbs. Breeding of pig, cow, chicken, sheep, rabbit, horse etc. are involving in another part of Xinjiang's agriculture.

Xinjiang Federation of Supply and Marketing Cooperatives is largest collective organization in Xinjiang county. It has 8 subsidiary companies and there are 8 town lever cooperatives under its name. The members of the cooperative are near 60,000. The cooperative supply fertilizers for farmers, sell daily use goods in turns and villages, collect crops from

farmers and sell them to cities or for exporting.

The project will be implemented by Xinjiang Federation of Supply and Marketing Cooperatives. Because the cost of equipment is large, the cooperative will apply for buyer's credit with the help of government.

# PROJECT RATIONALE AND INTRODUCTON

## 1). PROJECT RATIONALE

Starch is main material of edible alcohol. Firstly, starch is mixed with distillatory water, the thick liquid is added with alfa-amylase and will become liquid, then put glucose-amylase, after fermentation, the liquid should be distitated and then alcohol will be get.

While the liquid on fermentation, gas carbon dioxide will be produced, gas through pressurization and cooling will become solid state edible carbon dioxide for many kinds of use.

The left dregs water of alcohol will be produced to DDGS through centrifugation, concentration and drying.

## 2). LOCATION

The location of the plant is selected on the place which is behind the county railway station, near highway. The place is very convenient for communication, especially for getting underground water and electric power. The total area of this place is about 50,000 square metre.

Because price of land in China is going up, the life of the plant is prospected to be 20 years, the land will be owned by cooperative paid by cash from members.

## 3). PRODUCE AND SALE

The designed annual production capacity of alcohol, DDGS,



carbon dioxide are 15,000 tons, 8,000 tons and 4,000 tons respectively.

The sales of alcohol and carbon dioxide are paid by cash, alcohol should have a storage for 3 months, the DDGS could have a credit for 3 months for farmer members.

Production	price	Calculating price
	(YUAN/TON)	(YUAN/TON)
Alcohol	5500--8000	5500
DDGS	1160--2000	1160
Carbon Dioxide	4000--4500	4000

#### 4). LINE SELECTION

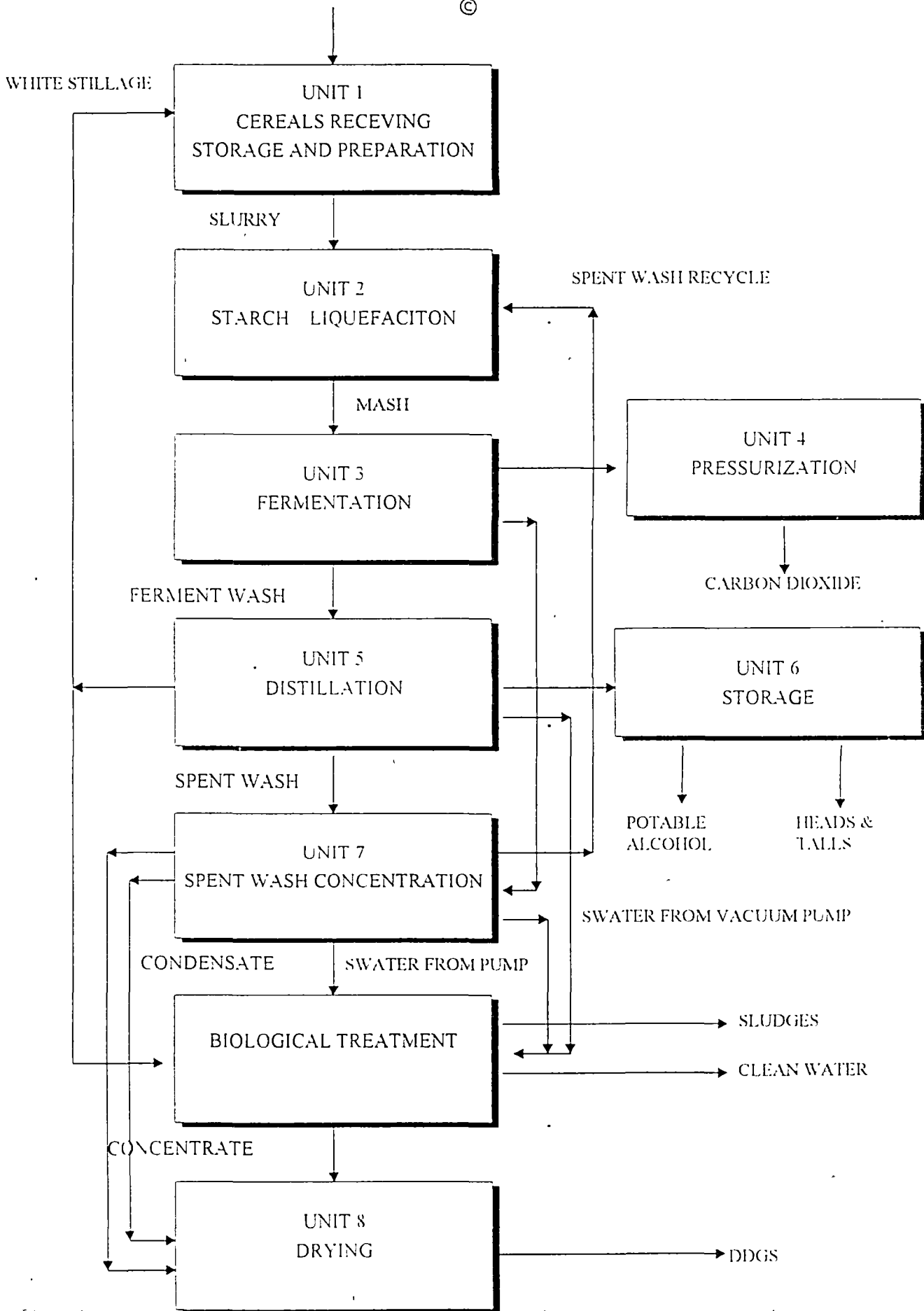
After intensive investigation and comparison, the company from Italy is selected. More importance is that the foreign company can get supplier's credit loan from local bank, so it can give a credit for 5 years to buyer, the interest on the credit loan at year's beginning will be paid by buyer and the rate is 8%. All line is controlled by computers and should be highly automatic.

#### 5). MANAGEMENT

The board of directors should be selected from member cooperatives. The operators should have qualification more than middle specialized school.

# BLOCK DIAGRAM

©



## DETAILS OF PROJECT

### 1). LINE DESCRIPTION

The designed annual production level of alcohol, DDGS and carbon dioxide are 15000 tons, 8000 tons and 4000 tons. At the first year of operation, the annual production is at 80% of the designed capacity; in second year, is 90% of designed capacity; in third year, this level will be scaled up to 100% utilization of capacity. The production table area as following:

Production (Tons)	Year 1	Year 2	Year 3
Alcohol	12000	13500	15000
DDGS	6400	7200	8000
Carbon Dioxide	3200	3600	4000

The life of line is designed to be 20 years, but the plant want to make depreciation for 10 years.

The whole production line consists of 8 components. The final products are alcohol, DDGS and carbon dioxide. The components and their respective functions are as following:

#### .Unit 1.--Pretreatment Raw Material

° Cereals receiving, storage and preparation.

. Grain loading hopper

- . Conveying device
- . grain storage tank
- . Hammer mill
- . Vibration

#### .Unit 2.--Starch Liquefaction

- . Preliquefaction discharge pump
- . Alfa-amylase storage vessel
- . Glucose-amylase storage vessel
- . Postliquefaction vessel

#### .Unit 3.--Fermentation

- . Fermented mash surge tank

#### .Unit 4.--Pressurization

- . Pressure cabin
- . Cooler

#### .Unit 5.--Distillation

- . Rectification column
- . Hydroselection column
- . White spillage column

#### .Unit 6.--Alcohol storage

- . Alcohol storage tank

.Unit 7.--Spent wash concentration

. Vacuum pump separator

. Centrifuged spent wash to concentration

.Unit 8.--Drying

. Bagging package (paper) automatic

## 2) . DETAILED FEATURES

### A. Inputs

The cooperative should own the land and do relative preparation. The cost of land is 3 million Yuans and civil work is 1.5 million. The 3 million is from reserves of federation and the other is from members, the interest is same as long term's loan. At the end of the third year of operation, the plant should make 30% of the net annual cash surplus as dividend among its members. The 70% cash surplus will be retained by the federation for future expansion projects.

Long term's loan for introducing equipment is provided by the foreign company by credit and will be repaid within 5 years. The interest rate on credit loan at year's beginning is 8%. The cost machinery is 38 million and installation is 4.5 million.

## Total Cost Table

A	Project Cost(million)	COST	REMARKS
1	Plant and Machinery	-38.0	
2	Erection/Installation	-4.5	
3	Civil Work	-1.5	Members
4	Land	-3.0	Members
5	Interest During		
	Construction Period	-3.4	
6	Working Capital Margin	-14.6	

### B. Processing

In Processing, there are some other materials needed such as diluted caustic soda 1%, concentrated caustic soda 40% and packaging materials for alcohol and DDGS. All these expenses include electric power and water will be calculated into the <sup>o</sup>cast of alcohol.

The packaging material inventory is planned to be maintained at about 3 months' requirement, and production alcohol also have a storage for 3 months.

The federation also plan to maintain the cash balance for this project at a minimum level of 0.5 million Yuans.

The working capital loan will be get from local Industry and Commercial Bank at interest rate 12% and cooperative should bring in

at least 20% of the short term's loan which will be get under the help of Shanxi Federation of Supply and Marketing Cooperatives from provincial Construction Bank at interest rate 8%.

The table of working capital requirement is as following:

### Working Capital Requirement

COD E	DESCRIPTION	YEAR 0	YEAR 1	YEAR 2	YEAR 3
A	Raw Materials	.	40.9	46.0	51.2
B	Other Materials and Packaging (3 months)		4.6	5.2	5.8
C	Sales Credit				
	Alcohol (3 Months Storage)		11.0	12.3	13.7
	DDGS (3 Months Credit)		1.2	1.4	1.6
D	Minimum Cash Balance		0.5	0.5	0.5
	Total Current Assets		58.2	65.4	72.8
	Working Capital Margin				
	20% Of Total Current Assets		11.6	13.1	14.6
	Working Capital Loan		26.3	31.4	36.6
	Interest (12%)		3.2	3.8	4.4

### C. Marketing

Sales of alcohol and carbon dioxide are paid by cash, DDGS will be sold to farmers through primary cooperatives on credit which can be safely taken as 3 months.

Alcohol and DDGS also can be exported by Shanxi Federation of Supply and Marketing Cooperatives. The table of respective sales

revenue is as following.

### Sales Revenue

PRODUCTION		YEAR 0	YEAR 1	YEAR 2	YEAR 3
Alcohol	Price		5500	5500	5500
	Tons		12000	13500	15000
	Revenue (million)		66	74	82.5
DDGS	Price		1160	1160	1160
	Tons		6400	7200	8000
	Revenue (million)		7.4	8.4	9.3
Carbon Dioxide	Price		4000	4000	4000
	Tons		3200	3600	4000
	Revenue (million)		12.8	14.4	16
General Revenue			86.2	96.8	107.8

#### D. Others

The plant should pay two kinds of taxes ~~including~~ income tax 33% and value-added tax 17% of net cash surplus.

### 3). PROJECT IMPLEMENTATION PLAN / SCHEDULE



## ACTIVITY LIST

ACT CODE	DESCRIPTION	IMMEDIATE PREDECESSOR	DURATION (MONTH)
A	Land Design		1
B	Prepare Land (Water, Warehouse, etc.)	A	4
C	Prepare RMG Plan		1
D	Construction(RM Storage)	C	6
E	Equipment Importing		1
F	Equipment Location Design		2
G	Procure P & M	E, F	5
H	Install P & M	E, F, G	3
I	Recruit Personnel		2
J	Train Personnel	I	6
K	Commission	H, G	1

# ORGANIZATION AND MANAGEMENT

## 1). ORGANIZATION

Xinjiang Federation of Supply and Marketing Cooperatives is the largest cooperative organization in Xinjiang county. Board of directors is the administrative management organ which is elected by general assembly and responsible for general assembly. The board of directors delegates its authority to respective management committee of different companies.

In this project, the board of directors should set up a specialize management committee to take charge of this project and the directors will be elected from member cooperatives.

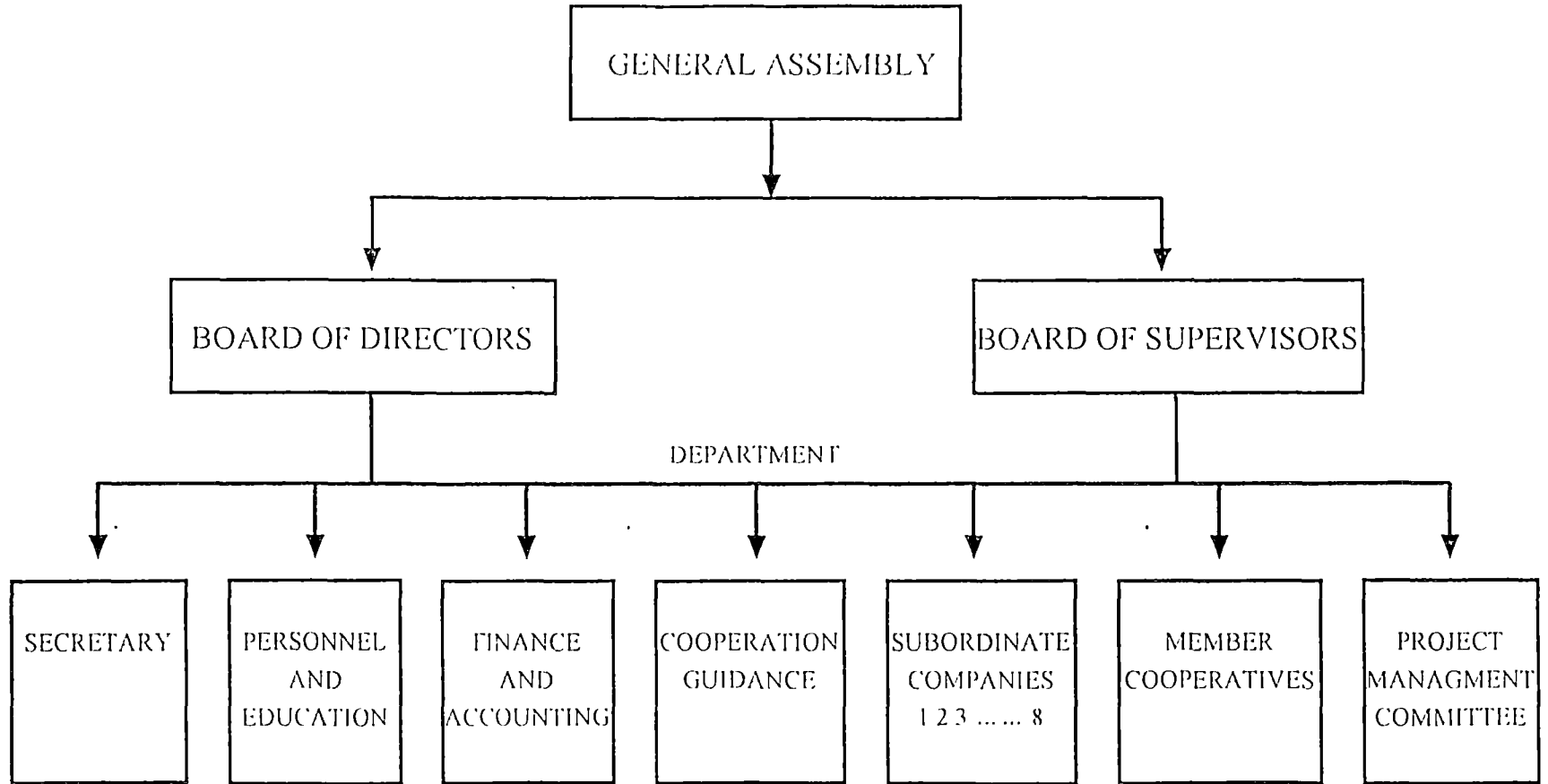
## 2). MANAGRMENT

The project management committee will select a general manager and several vice-managers in charge of the concrete management job. Under the managers, the whole management is divided into several parts.

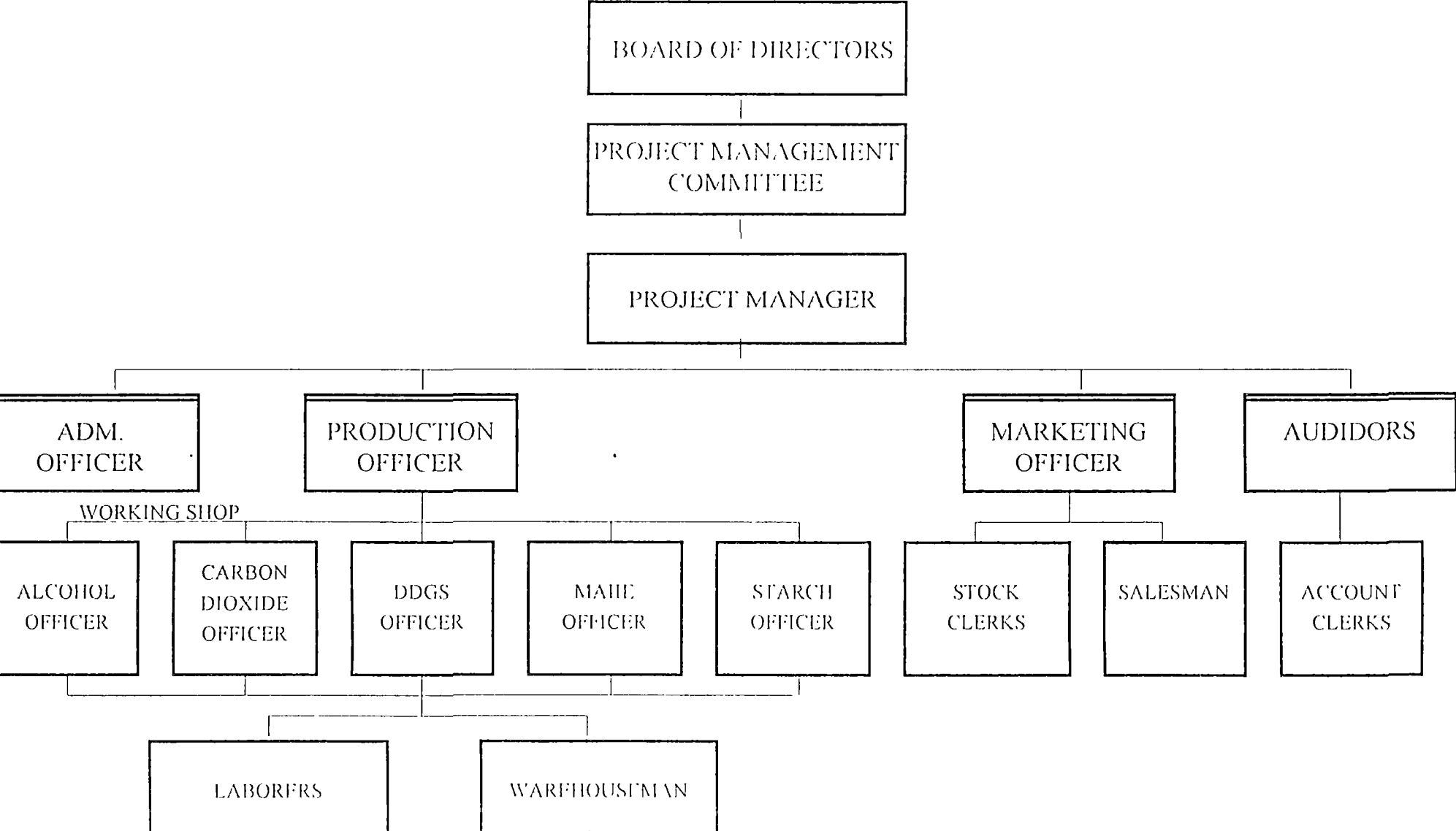
## 3). RECRUIT AND TRAINING

The operators in this plant should be of qualification more than middle specialized school and have received special training course held by the plant. After examination, they may go to working station. The total number of operators is planned to be 150.

# XFSMC ORGANIZATIONAL STRUCTURE



# XFSMC PROJECT MANAGEMENT COMMITTEE



## DETAILED DATA ANALYSIS

### Working Capital Requirement

CODE	DESCRIPTION	YEAR 0	YEAR 1	YEAR 2	YEAR 3
A	Raw Materials		40.9	46.0	51.2
B	Other Materials and Packaging (3 months)		4.6	5.2	5.8
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	Total Current Assets		58.2	65.4	72.8
	Working Capital Margin				
	20% Of Total Current Assets		11.6	13.1	14.6
	Working Capital Loan		26.3	31.4	36.6
	Interest (12%)		3.2	3.8	4.4

2500  
140,000

### Cost of Production & Sales

DESCRIPTION	YEAR 0	YEAR 1	YEAR 2	YEAR 3
Raw Material (maize)		40.9	46.0	51.2
Other Material		9.4	10.5	11.7
Packaging Material		9.0	10.1	11.3
Water Power & Fuel		3.6	4.1	4.5
Labour Cost		2.4	2.6	2.9
Administration & Marketing OHDS		2.5	2.5	2.5
Interest on WP Loan (12%)		3.2	3.8	4.4
Opportunity Cost of Land & Trucks		0.4	0.4	0.4
Total Cost		71.4	80.0	88.9

## Profit

DETAILS	YR 0	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
Sales Revenue		86.2	96.8	108	108	108	108	108	108	108	108
Cost of Production											
and Sales		71.4	80.0	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9
Profit before D I T		14.8	16.8	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
Depreciation		4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Interest on Term's											
Loan		5.1	4.2	3.5	2.7	2.0	1.2	0.9	0.6	0.3	0.0
Profit before Tax		5.3	8.2	11.0	11.8	12.5	13.3	13.6	13.9	14.2	14.5
Profit after Tax		3.8	4.1	5.5	5.9	6.2	6.6	6.8	6.9	7.1	7.2

## Term Loan Repayment & Interest Schedule

*China*

DETAILS	YR 0	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
Loan At Year Begin		60.5	52.9	44.0	34.2	24.4	14.6	10.9	7.2	3.6	0.0
Interest Rate (%)		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Interest Payable		4.9	4.2	3.5	2.7	2.0	1.2	0.9	0.6	0.3	0.0
Repayment of											
Principal		7.6	8.9	9.3	9.8	9.8	3.7	3.7	3.6	3.6	0.0
Net Cash Surplus		0.0	0.0	0.5	0.9	1.2	7.7	8.8	8.1	8.3	12.0
Net Cash Flow		12.5	13.1	13.8	13.4	13.0	12.6	12.5	12.3	12.2	12.0
Profit After Tax		2.8	4.1	5.5	5.9	6.2	6.6	6.8	6.9	7.1	7.2
Depreciation		4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Land & Trucks		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Interest on Term's											
Loan		4.9	4.2	3.5	2.7	2.0	1.2	0.9	0.6	0.3	0.0



## CONCLUSION AND SUGGESTION

- 1). The average selling price of maize is 950-1050 Yuan/ton. In this project, the purchasing price is expected to be 1100Yuan/ton. The high price will protect the interest of farmers.
- 2). The loan from foreign company will be repaid firstly within 5 years. The long term loan from provincial bank will be repaid secondly within 3 years after 5 years of operation.
- 3). The pollution of the plant should be controlled .
- 4). The vocation and security education of operation should be held usually.
- 5). Layout changes can be streamlined and thereby production increased.
- 6). Management of the plant must be advanced, scientific. Operators in this plant should have more than qualification of middle specialized school, and can be trained scientifically to operate machine.
- 7). Work land should be made equitable or job rotation ensured to reduce work fatigue on a work.
- 8). Analysis of mechanical breakdown and output should be analyzed, promote coordinator to improve the efficiency.



TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE

ON

"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"

INDIA-PHILIPPINES-JAPAN

October 20, 1997 to April 23, 1998

23.2.98

4

## PROJECT PROPOSAL

Title of the  
Project Proposal : MODERNISATION OF GINNING UNIT

Country : INDIA

Project Proposal  
Prepared by : DR. R.R. RANDAD

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
**in collaboration with its Member-Organisations in**  
**India, Philippines and Japan**



**INTERNATIONAL COOPERATIVE ALLIANCE**

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# ACKNOWLEDGEMENT

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I express my sincere gratitude to Dr. Daman Prakash, Project Director; Mr. A.H. Ganeshan, Programme Officer and all Staff Members of ICA-ROAP as well as Prof. G. Krishnamurthi and the distinguished faculty of IRMA for their valuable guidance and help without which this project would not have been possible.

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Place : Nasik

Date : 22/1/1998

Dr. R.R. RANDAD

# HIGHLIGHTS OF THE PROJECT

1. Name of Project : Modernisation of ginning unit.
2. Project to be implemented by : Amalner Taluka Shetkari Sahakari Sangh Ltd., Amalner  
- a member Cooperative of IFFCO
3. Project Area : Amalner, District - Jalgaon.
4. Total cost of project : Rs. 34.09 lakhs
5. Source of finance : i) Society's own fund - Rs. 6.00 lakhs  
ii) Loan - Rs. 28.09 lakhs
6. Installed capacity : 4.5 quintal lint per gin per shift x 16 DR gins x 270 shifts  
= 19440 quintal of lint.
7. Capacity utilization : 1st year - 180 Shifts  
2nd year - 190 Shifts  
3rd year - 210 Shifts  
4th year - 225 Shifts  
5th year - 245 Shifts  
6th year onward - 270 Shifts
8. Product : **Lint** production on hire basis.
9. Implementation period : 10 months.
10. Management : Management of Amalner Taluka Shetkari Sahakari Sangh Ltd.
11. Project life : 10 years.
12. Raw Material Source : Raw cotton procured by the society on behalf of Maharashtra State Coop. Cotton Growers Marketing Federation Ltd.
13. Financial Analysis : NPV (Rs.Lakhs) - 0.33  
IRR (%) - 19.88  
BCR - 1.01

# SUMMARY

## 1. Title and brief description of the project :

Modernisation of Ginning unit of Amalner Taluka Shetkari Sahakari Sangh Ltd., Amalner Dist. Jalgaon, is very much required to be undertaken as existing unit is causing constant losses to the society, which is otherwise in over all profit with audit class 'A'. The society is procuring raw cotton under monopoly cotton procurement scheme of Govt. of Maharashtra, on behalf of Maharashtra State Cooperative Cotton Grower's Marketing Federation Ltd. Thus, society has got assured ginning business which is done on hire basis of lint output. Cotton Federation pays Rs. 165/- per quintal of lint output towards ginning of raw cotton.

## 2. Beneficiary :

The project will help to increase the income of the society. The economic strength, thus, gained will enable society to serve efficiently its members who are also cotton growers.

## 3. Objectives :

- To utilize existing facilities profitably and judiciously.
- To protect economic interest of members.
- To generate employment potentials.
- To have forward linkage of assured raw cotton procurement activity.

## 4. Total investment :

The life of project is assumed to be 10 years. Total capital investment is Rs. 34.09 lakhs.

## 5. Source of fund :

The Amalner Taluka Shetkari Sahakari Sangh Ltd., Amalner will invest Rs.6.00 lakhs and Rs. 28.09 lakhs will be borrowed from NCDC as loan @ 16% interest per annum repayable in 10 years. The interest for working capital is calculated @ 18% interest per annum.

## 6. Capacity utilization :

Considering output of 4.5 quintal lint per shift per double roller gin, 16 such gins will produce 72quintal lint per shift. Two shift per day for 135 days of seson will produce 19440 quintal of lint. This is considered as 100 per cent capacity.

The capacity utilisation considered as shifts, 180 in 1st year,190 in 2ndyear, 210 3rd year, 225 in 4th year, 245 in 5th year, and 270 6th year onward.

**7. Raw material :**

Raw cotton of farmers procured on behalf of federation under monopoly raw cotton procurement scheme.

**8. Marketing :**

Since ginning is done on hire basis, no separate marketing arrangements will be required.

**9. Project viability & financial highlights :**

The proposed project is financially viable having 19.88 per cent IRR and NPV more than zero (i.e. Rs. 0.33 lakh). The Benefit Cost Ratio is more than one.

**10. Risk Factors :**

Sensitivity analysis of the project shows that it is very sensitive to lint output per shift. The fall in lint output from 72 to 70 quintal per shift, the NPV becomes negative (i.e. (-) Rs. 0.14 lakh). Similarly the increase in power and labour cost by 5 per cent, the NPV becomes negative (i.e. (-) Rs. 0.04 lakh).

**11. Plant and machinery :**

Machinery of proposed project is easily available in India and after sales services alongwith spare parts are also readily available. Bajaj Double Roller extralong gins with autofeeder attachment of raw cotton, produced by Bajaj Steel Industries Ltd., Nagpur are proposed to be installed.

**12. Project benefit and employment generation :**

The project will directly benefit the society and its members who are also cotton growers. It will generate employment to some skilled and unskilled workers.

**13. Project implementation :**

The project is expected to be completed within 10 months and start in commercial production by December 1998.

## INTRODUCTION

Amalner Taluka Shetkari Sahakari Sangh Ltd. Amalner, has decided to modernise their ginning unit, which was established by them in the year 1967-68. This society is taluka level marketing cooperative bearing registration No.2926 dated 24-6-1927. The society is engaged in marketing of agricultural produce, agricultural inputs, besides, ginning of cotton. The ginning unit of the society has 30 Single Roller Gins on 1.8 ha land at Amalner Distt Jalgaon, Maharashtra State. The past five year performance of this society is spectacular (Table - 1) and the audit class is 'A'.

Table - 1 : Progress Report of Amalner Taluka Shetkari Sahakari Sangh Ltd.

(Rs. in lakhs)

S.No.	Particulars	1992-93	1993-94	1994-95	1995-96	1996-97
I	Membership (No)					
	<i>i) Individual</i>	3884	4661	4801	4932	5178
	<i>ii) Societies</i>	130	141	141	141	141
	<i>iii) Govt.</i>	1	1	1	1	1
II	Share Capital					
	<i>i) Individual</i>	2.21	2.68	2.70	2.77	3.16
	<i>ii) Societies</i>	2.63	2.80	2.80	2.80	2.82
	<i>iii) Govt.</i>	10.40	8.36	8.00	7.64	7.29
III	Reserve Fund	3.07	3.08	3.35	3.36	7.84
IV	Other Funds	10.88	12.49	14.15	16.21	20.50
V	Working Capital	114.80	121.13	147.00	161.80	141.15
VII	Turnover	212.36	213.78	257.17	380.48	408.19
VIII	Bank Loan	2.14	6.37	6.68	5.03	8.99
VIII	Profit/Loss	2.15	(0.25)*	0.32	2.00	3.80
IX)	Audit Class	A	A	A	A	-

\* Figure in bracket indicate loss.

Source : Annual Report

This society is member society of Indian farmers fertilizer co-operative Ltd. and selling IFFCO fertilizers on priority in Amalner taluka. IFFCO, being federal cooperative, at national level, renders various services for the development of cooperative, apart from selling entire fertilizer production through cooperatives only. As a part of these services IFFCO is preparing this project report on modernisation of ginning unit which will be of great help to farmer members of Amalner Taluka Shetkari Sahakari Sangh Ltd. Amalner Distt. Jalgaon. This Project Report will be submitted to NCDC through Maharashtra State Government for necessary financial help.

## BACKGROUND

### 2.1 Cotton Area and Production :

Cotton is the most important cash crop grown in India for meeting the fibre need. Cotton seed contains 14 to 18 per cent oil which after refining is used for human consumption, however, cotton seed cake is used as cattle feed.

This crop occupies 9.06 million ha area producing 13.09 million bales. Maharashtra state occupies almost 34 percent area under cotton crop in India & contributes 21.4 per cent production. Within Maharashtra, Jalgaon is one of most important district where cotton is grown as main cash crop after banana crop.

**Table - 2 : Cotton Area and Production.**

Year	India		Maharashtra State		Jalgaon Distt	
	Area (m.ha)	Production (m.bales)	Area (m.ha)	production (m.bales)	Area (m.ha)	Production (m.bales)
1994-95	7.87	11.89	2.76	2.50	0.26	0.35
1995-96	9.06	13.09	3.07	2.80	0.28	0.31

### 2.2 Textile Industry :

Today, textile industry has not only grown to be the largest segment of country's industrial sector with a share of 20 percent but it has also gained stature among the world textile industry. Cotton fibre forms major raw material of textile industry.

### 2.3 Cotton Processing :

The processing of cotton involves separating cotton seed from lint called ginning, pressing the lint into bales called pressing, making threads out of lint called spinning, and finally making the cloth from the threads is weaving.

### 2.4 Remunerative Crop:

Cotton is colloquially called as white gold because it fetches relatively better revenue than many other crops under rainfed condition of semi arid tract. This crop is very good for crop rotation as it takes its nutrient need from lower layer of soil due to its deep root system.



## 2.5 Cotton Development :

India has the distinction of being the country growing the largest area under cotton. However, in production, it ranks third after China and USA, because of low yield i.e 246 kg lint per ha. India has been laying great emphasis on increasing the production & productivity of cotton . For this purpose research and development programmes are under implementation.

Govt. of Maharashtra has also realised to increase cotton productivity from present level of 155 kg lint per ha, by taking up cotton demonstration project at PKV Akola with Israel technology on 200 ha farm area. Large number of cotton growers of Maharashtra State are exposed to this demonstration for immediate adoption of the technology by them. It is expected that cotton yield per ha will double in coming years.

## 2.6 Cotton Monopoly Procurement Scheme :

Maharashtra state is unique in implementing cotton monopoly procurement scheme since 1972-73 through Maharashtra State Cooperative Cotton Growers Marketing Federation Ltd. Nagpur in entire Maharashtra state, benefiting 15 lakh farmers. For this purpose Maharashtra Government enacted special raw cotton act 1971. The main objectives of this scheme are as follows.

- To ensure right cotton price to farmers
- To eliminate middle men and to remove lacunae in marketing.
- To supply quality lint to mill owners in right price
- To increase cotton productivity and bring prosperity to farmers through cooperative endeavour.

Under this scheme procurement price are declared at the beginning of season and procurement centres are, by and large, opened where ginning facility is available. However, non ginning facility centres are also opened for avoiding inconvenience of long transportation of raw cotton by the farmers. At such non facility center farmers get Rs. 20 per quintal less price than that of price at ginning facility centre. The federation procures cotton through cooperative marketing societies in respective procurement centre area on commission basis. Similarly, ginning and pressing of cotton is also done on hire basis mostly in cooperative ginning and pressing unit . However, in the absence of cooperative unit , private units are utilised for this purpose Cotton grading is done by grader, a employee of cotton federation.

## 2.7 Encouragement to Small Scale Industry :

Maharashtra State Govt. encourages SSI units by giving 25 per cent subsidy of project cost in industrially

## PROJECT AREA

### 3.1 Availability of Raw Material:

As mentioned earlier, in Jalgaon district procurement of raw cotton is over 1 million quintal, whereas in Amalner sub-zone, which comprises of Amalner, Parola and Dharangaon centres, raw cotton procurement is around 0.18 million quintal (Table - 3). This crop is grown on about 70000 ha in Amalner sub-zone. The Climatic and soil conditions are quite favourable to grow this crop in this area.

**Table - 3 :** Cotton Area & raw cotton production in Amalner subzone and in Jalgaon District.

Year	Jalgaon District		Amalner Sub-zone	
	Area ha.	Production (q)	Area ha.	Production (q)
1995-95	277900	1014387	67140	177929
1996-97	300500	1286144	71600	187606
1997-98 (E)	375100	2200000	88600	415000

**Source :** Maharashtra State Cooperative Cotton growers Marketing Federation.

### 3.2 Availability of Ginning Facility :

In Jalgaon district and in Amalner sub-zone the ginning facility availability is shown in Table-4.

**Table - 4 :** Ginning Facility.

Gin kind	Jalgaon Distt, No.	Amalner Sub-zon, No.
Single Roller (SR)	68	0
Double Roller (DR)	574	56

**Source .** Maharashtra State Cooperative Cotton growers Marketing Federation.

### 3.3 Raw Cotton Procurement by Society :

As mentioned earlier this society procures raw cotton from the farmer at Amalner procurement center of cotton marketing federation after it is graded for quality by Cotton Grader. The society gets commission @ 0.4 to 0.9 per cent on quantity slab basis. The raw cotton procurement of the society during past three years is shown in Table-5.

**Table - 5 : Raw Cotton Procurement by the society.**

Year.	Raw cotton procurement, quintal
1994-95	31753
1995-96	59655
1996-97	75791

Source : Annual Report of Society.

### 3.4 Ginning performance of society.

Out of 30 SR Gins the society operated 20 gins during last three years of which performance is as given in Table-6.

**Table - 6 : Ginning performance of society.**

Particulars.	1994-95	1995-96	1996-97
1) Raw cotton ginned	1790	9099	25989
2) Lint obtained (q)	606	3164	8312
3) No.of shifts	22	121	236
4) Commission Revenue (Rs lakh)	0.75	4.16	12.14
5) Profit/Loss (Rs lakh)	(1.77)*	(0.56)*	(0.28)*

\* Figure in bracket indicates losses.

Source : Annual Report of Society.

## PROJECT RATIONALE.

### 4.1 Project Rationale :

A close look at raw cotton procurement either at Amalner centre or in Amalner sub-zone or in Jalgaon district, vis a vis ginning & pressing facilities available, it is revealed that ginning capacity is inadequate considering future increase in cotton production.

This society, although in overall profit, incurring continuous losses in ginning unit on account of low output (lint production) per unit of inputs (like power, labour, spares etc). The modernisation of existing unit will enable this society to earn the profit in assured business of cotton marketing federation under monopoly cotton procurement scheme of Govt of Maharashtra. The economic strength thus gained will enable this society to serve farming community still better way.

### 4.2 Design Consideration :

#### 4.2.1 The Project Location:

The society proposes to utilise existing gin building and other infrastructure facilities available with them like electric transformer, fire hydrant & pool , security & office building etc. situated on 1.8 ha area owned by the society (Exh.1). Therefore, the location is Amalner which has good road and rail link.

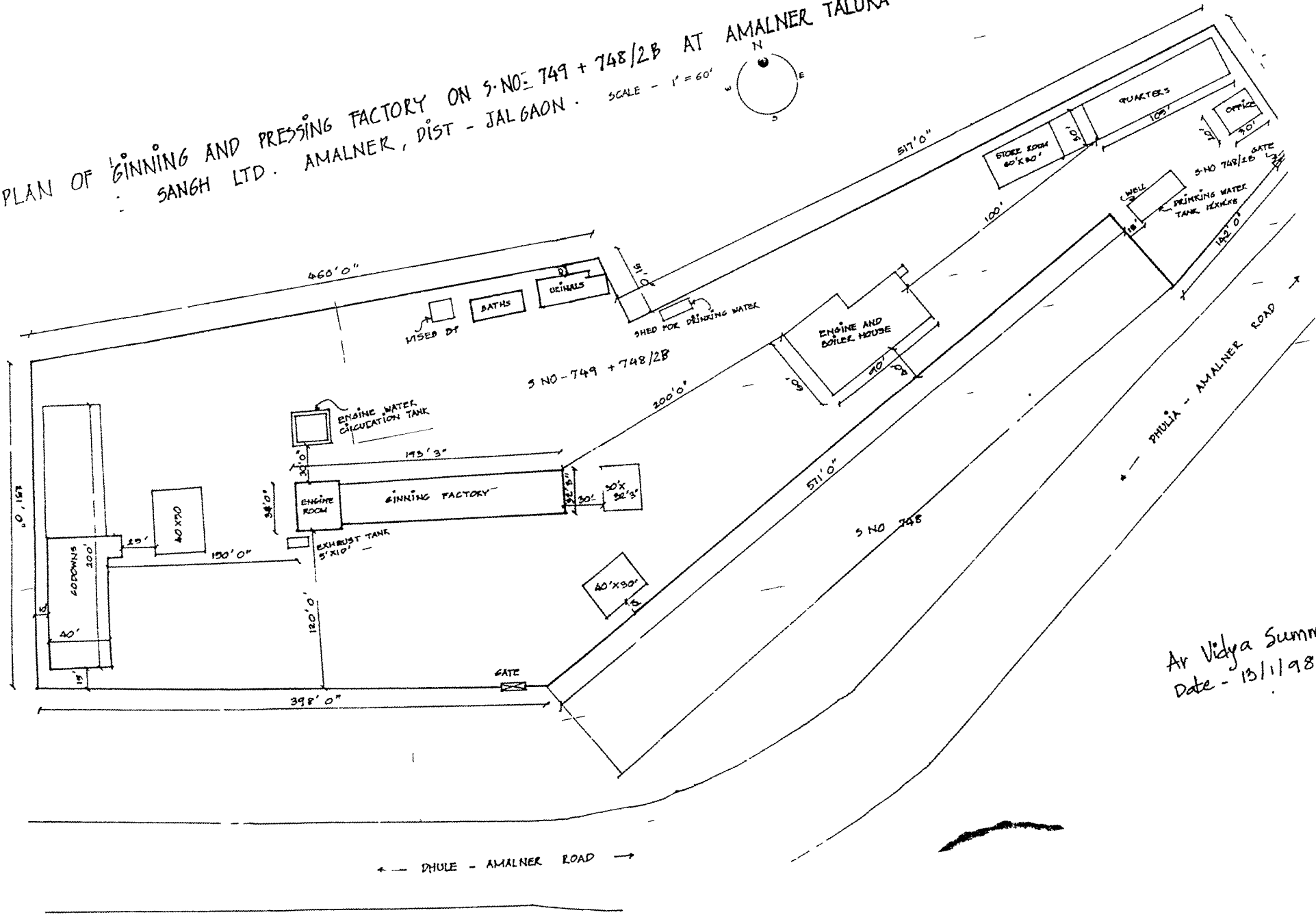
#### 4.2.2 Scale :

The existing gin building is such that 16 DR Gins with suitable space in between can be installed in one row so that cotton seed falling in trench under the gin can be mechanically taken out by cotton seed conveyor on one end of gin house, while lint can be lifted manually to lint filling platform at the other end of gin house.

#### 4.2.3 Components :

The main components of ginning units are Gin house, Raw cotton platform, Cotton seed platform, Lint filling platform, Power transformer, Fire hydrant and pool, Weighing scale (platform type), Office and security building.

SITE PLAN OF GINNING AND PRESSING FACTORY ON S. NO. 749 + 748/2B AT AMALNER TALUKA SHETKARI SANGH LTD. AMALNER, DIST - JALGAON. SCALE - 1" = 60'



Ar Vidya Summanwa  
Date - 13/11/98

#### **4.2.4 Technology :**

The technology includes following items.

- Modern extralong double roller gins with auto feeder.
- Electric motor 5 HP each to drive gin.
- Cotton seed conveyor driven with 5 HP electric motor.
- Electrical panel control.

The following advantages will accrue by setting up semi-automatic ginning unit.

- Save Power as modern double roller gins have ball bearings instead of brush system thereby reduce motor HP.
- More output per unit consumption of inputs thereby reducing variable cost.
- Existing facilities would be utilised for profit making.

#### **4.2.5 Organizational Arrangements :**

The gin will be operated by technical staff viz. Fitter, Oilmen, Roll Cutter (Annexure - 8). The gin unit being semiautomatic require 30 labours for carrying out various operations (Annexure - 7). The attachment of autofeeder reduces requirement of labour to sit on gin for feeding raw cotton, because one labour can feed raw cotton to three gins. Thus for 16 DR Gins instead of requiring 16 labourers only 6 can manage the raw cotton feeding operation to gin.

All these skilled and unskilled labourers are very much available and employed on seasonal basis only. To supervise the ginning unit operation Gin Manager will be responsible.

#### **4.2.6 Effluent :**

The proposed semi automatic ginning unit will not discharge any effluent nor in anyway pollute the environment.

## CHAPTER - V

# THE PROJECT

### 5.1 General Description :

The Amalner Taluka Shetkari Sahakari Sangh Ltd., Amalner District Jalgaon, has existing gin with all kind of infrastructural facilities required for the gin. They also expertise to run the gin successfully. Moreover, monopoly cotton procurement scheme encourages cooperatives to procure the cotton from farmers and process it on hire of lint output basis .

This year the ginning rate finalised by cotton federation are Rs. 165/- per quintal of lint output & Rs. 165/- per bale of cotton as pressing charges. These rates are finalized based on average consumption of inputs to produce one quintal or one bale of lint output.

Since the society has old technology they incur losses on account of more consumption of inputs for producing one quintal of output of lint. However, the modern double roll gin consumes less inputs and at the sametime give more output of lint. This will enable the society to bring this gin unit as profitable venture and gain economic strength to serve member farmers better.

#### 5.1.1 Overall and immediate objective :

- To Utilize existing facilities profitably & judiciously.
- To protect economic interest of members who are also cotton growers through this agro processing activity which adds value to their produce.
- To generate employment potentials.
- To have forward linkages of cotton procurement being done on commission basis.

#### 5.1.2 Project of Component :

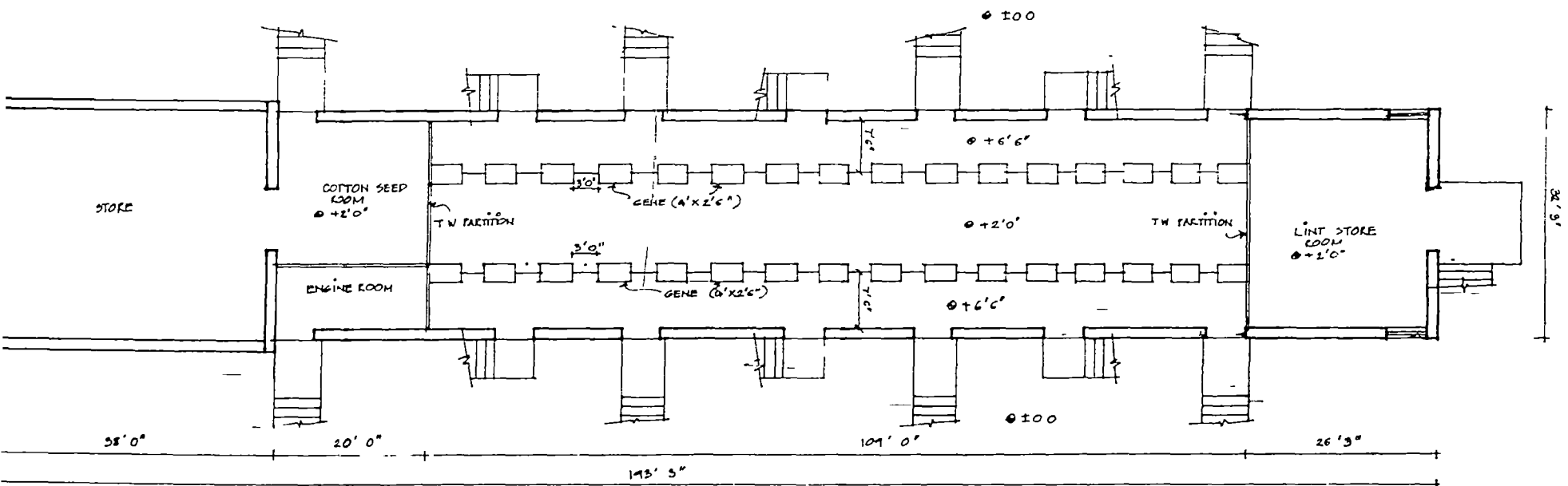
##### 5.1.2.1 Gin House :

The existing gin house will be utilised by making suitable alteration within it for installing 16 DR gins in one row so that cotton seed can be mechanically carried on one end of gin house(Exh.2).

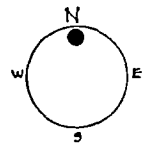
The cost of alteration is worked out to be Rs.2.82 lakhs (Annexure - 5)

##### 5.1.2.2 Other Civil Work :

Other Civil work, includes deepending of existing well, repairs of fire hydrant and pool, repairs of barbed wire fencing which need to be undertaken. Besides, these raw cotton storage platform and cotton seed storage platform need to be repaired. These costs are estimated at Rs. 1.05



REVISED PLAN OF COTTON GINNING FACTORY  
 SCALE -  $3/4" = 10'0"$



Ar. Vidya Summanwar  
 Date - 13/1/98



### **5.1.2.3 Plant and Machinery :**

The cost of plant & Machinery estimated at Rs. 22.72 lakhs on the basis of latest quotations. The cost includes provision for electrical equipments, cotton seed conveyor system, folding angle structure for raw cotton platform, sheetmetal guarding etc. (Annexure - 4)

### **5.1.2.4 Miscellaneous Fixed Assets :**

Under this head the provision of Rs.2.27 lakhs is kept to cover expenditure on items like fire fighting equipments, platform type weighing scale, some electrical equipments, furniture & fixture etc. (Annexure - 3).

### **5.1.2.5 Pre-operative Expenses :**

These expenses includes Rs.1.80 lakh interest (@16%) for a period of 6 months on an amount spent towards Building & other civil works, plant & Machinery and Misc. fixed assets. Besides this Rs.0.71 lakh provided for contingency and Rs.1.00 lakh provided for establishment, startup & training expenses. Thus, total of Rs.3.98 lakhs provided as preoperative expenses. (Annexure-6).

### **5.1.2.6 Margin Money for Working Capital :**

This has been worked out on the basis of 20% margin one month requirement of sales credit, store inventory, lubricant inventory and maintenance of cash balance for carrying out day to day operation. This amounts to Rs. 1.77 lakhs (Annexure -11).

## **5.2 Detailed Features :**

The raw cotton procured by the society on behalf of Maharashtra State Cooperative Cotton Growers Marketing Federation Ltd. after it is graded, will be stacked on Raw Cotton Platform. This raw cotton will be manually taken to gin house and kept on raw cotton platform near gin for feeding. The labour sitting on each DR gin will feed raw cotton. The DR gin driven separately by 5 HP motor will gin the cotton. The cotton seed falling in trench under the gin will be mechanically transported to cotton seed silo and from there it will be taken manually to store on cotton seed platform till it is despatched by federation to oil mill.

The lint falling near the gin is manually taken to lint filling platform where it will get packed in jute gunnies, each weighing approximately 80 to 90 kg. These gunnies are supplied by federation. The lint filled gunnies are weighed on platform type weighing balance and transported by federation to pressing

## 5.2.1 The Inputs of Ginning Operation :

### 5.2.1.1 Power :

Each gin require a electric motor of 5 HP and one additional 5 HP electric motor is required for rotating the conveyor of cotton seed falling under the gin. Thus, 85 HP power is required.

Power Consumption per shift of 8 hour :

Since 1 HP equals to 0.74 KW, so 85 HP x 0.74 x 8 hrs. will be 503.2 KWH.

Therefore, cost of power @ Rs. 4 per unit (KWH) for each shift is Rs. 2012/-

### 5.2.1.2 Labour charges :

Since the ginning unit is semi-automatic, the labour charges forms major cost of production. To run one shift of 16 DR gin with auto-feeder the labour required per shift of eight hour is 30.

In addition to this technical staff required for each shift are one fitter, 3 oilman and 2 Roll cutter.

These skilled and unskilled labour are hired on seasonal basis only. Therefore, their cost per shift worked out at Rs. 3058.00 (Annexure - 7 & 8).

### 5.2.1.3 Lubricant :

For smooth running of gin the grease is required to be applied to gears & bearings. The lubricant requirement as recommended is 0.25 kg per DR gin per shift so far 16 DR gin the lubricant requirement is 4 kg per Shift. The rate per kg of lubricant is considered at Rs. 68.75, hence Rs. 275 per shift is considered as expenses on this head. Further, one barrel of 180kg is maintained as inventory during operation.

### 5.2.1.4 Spares :

The spares of DR gin are moving parts viz. Knives, Roller, Bearings, Seed sieves, Belts etc. They are required to be replaced under breakdown when the gins are in operations. Based on experience of similar ginning unit the expenses on spare part head can be allocated at Rs. 748.00 per shift.

### 5.2.1.5 Repairs and Maintenance :

These expenses are also considered based on experience of similar ginning unit. These expenses amount to Rs. 8.34 per DR gin per shift. Thus total expenses considered at Rs 0.36 lakhs annually.

### 5.2.1.6 Administrative & Management expenses :

These expenses include annual salary of ginning staff amounting Rs. 1.55 lakhs (Annexure-9)

and other office expenses considered at Rs. 0.50 lakh. Thus total expenses considered Rs. 2.05 lakhs annually.

#### **5.2.1.7 Opportunity Costs :**

Since the existing facilities are being used for this project so opportunity cost considered at Rs. 0.80 lakh annually.

### **5.2.2 PROCESSING :**

The DR Gins separate cotton seed from lint. The capacity, although, recommended at 4.8 quintal lint per shift of 8 hours per DR Gin. We have considered at 4.5 quintal lint output per DR gin per shift. Therefore, 16 DR gins will produce 72 quintal lint per shift.

The ginning season considered for 135 days running two shifts per day. Thus, 16 DR Gin will produce lint 19440 quintal per season of 270 shift considered as 100% capacity.

### **5.2.3 Marketing :**

Since Maharashtra State Cooperative Cotton Growers Marketing Federation Ltd. gets ginning operation done on hire basis by paying Rs. 165/- per quintal of lint output, the society need not require marketing arrangement.

### **5.2.4 Financial :**

The society require to maintain cash balance of Rs. 0.60 lakh & store inventory including lubricant of Rs.1.12 lakh for smooth running of gin unit. It is also considered that society will require to maintain debtor of one month production. Thus, society will require working capital of Rs. 8.85 lakh. The 20 per cent margin money is considered as project cost.

The interest on net working capital is calculated at interest rate of 18 per cent. However, the long term loan interest rate considered at 16 per cent.

The depreciation was calculated on written down value (WDV) basis considering 10 per cent and 25 per cent rate of depreciation on civil work costs and plant and machinery cost respectively.

(Annexure-10)

### **5.3 Project Implementation Plan :**

As per schedule the project is expected to start commercial production by Dec, 15, 1998. The detailed implementation schedule is given in Table-7.

**Table - 7 : Project Implementation Schedule.**

Activity	Duration	Predecessor
A. Project Approval	2	-
B. Arrangement of Finance	1	A
C. Civil work for Gin house alteration	2	B
D. Repairs and procurement of Misc. fixed assets	2	B
E. Placment of order of plant and machinery	2	B,C
F. Delivery of Machinery	2	E
G. Erection of Machinery	1	F
H. Electric Connection	1	D
I. Trail Run	1	G, H
J. Full production		I

**5.4 Cost Estimates :**

The life of Project is assumed to be 10 years for project financial analysis. The total capital cost of project is Rs.34.09 lakhs which is presented in Annexure 1. The architectural estimate is considered for alteration of gin house to suit the modernization of ginning unit. Similarly, the quotations were obtained from leading manufacturer of plant & machinery of ginning unit. The other costs are considered based on discussion with the society office bearers and experienced people of ginning unit.

**5.5 Financing :**

The project cost for setting up 16 modern Double Roller ginning unit is proposed to be funded as mentioned in Table - 8

**Table - 8 : Source of funding**

(Rs. in lakhs)

S.No.	Source	Amount
1.	Own fund of society	6.00
2.	Loan from NCDC	28.09
	<b>Total</b>	<b>34.09</b>

**5.6 Organisation and Management :**

The members of Amalner Taluka Shetkari Sahakari Sangh Ltd. elect 15 directors and 3

directors altogether forms the board of the society. Among 15 elected directors, Chairman and Vice chairman are elected for a term of five years.

These board of director manages society through Manager. For ginning unit Gin Manager is exclusively appointed who reports to the manager of the society. Under Gin Manager one senior clerk cum accountant is working who maintains all records & accounts of Gin . There are two watchmen who work shiftwise alternatively in day time and night time to guard the unit.

The fitters, oilmen and roll cutters are hired on seasonal basis. Similarly, labours are hired seasonly and paid all emoluments due under minimum wages act.

ICAR has ginning training centre at Nagpur who imparts training input on technical aspect. Since the society is operating its ginning unit for long, experienced staff is available for successful implementation of this project.

## 7 Financial Results :

The detailed projections of profitability and cash flows of proposed project of modernization of ginning unit of Amalner Taluka Shetkari Sahakari Sangh Ltd., are presented in Annexure - 11. The data reveal that the project is financially viable since it has Internal Rate of Return (IRR) of 19.88 per cent and NPV more than zero. The logical consideration of production, cost and revenue are on very practical basis. The sensitivity analysis of the project reveals that it is very sensitive to lint output per shift (Table-9). The fall in lint out from 72 to 70 quintal per shift cause NPV change from (+) Rs.0.33 lakh to (-) Rs. 0.14 lakh. Similarly the increase in power and labour cost by 5 per cent cause NPV change to (-) Rs. 0.04 lakh.

**Table - 9 : Sensitivity Factor**

Sensitive factor		NPV Rs. in lakhs
I.	Lint output per shift	
	i) 72 quintal	(+) 0.33
	ii) 71 quintal	(+) 0.14
	iii) 70 quintal	(-) 0.14
	Power and labour cost	
	5% increase considered in project	(+) 0.33
	2.5% increase	(+) 0.18
	5.0% increase	(-) 0.04

**PROJECT COST ESTIMATES**

(Rs. in lakhs)

S.No.	Particulars	Amount
1.	Civil work costs of Gin House,	2.82
2.	Other Civil Work Cost.	1.05
3.	Plant & Machinery including accessories	22.72
4.	Miscellaneous fixed assets	1.75
5.	Preoperative Expenses	3.98
6.	Margin Money for working capital	1.77
Total		34.09

Annexure - 2

**OTHER CIVIL WORKS COST**

(Rs. in lakhs)

S.No.	Particulars	Amount
1.	Deepening of existing well	0.50
2.	Repairs of existing fire hydrant & pool	0.20
3.	Raw cotton and cotton seed platform	0.30
4.	Repairs of existing barbed wire fencing	0.05
Total		1.05

Annexure - 3

**MISCELLANEOUS FIXED ASSETS**

(Rs. in lakhs)

S.No.	Particulars	Amount
1.	Electrical equipments	0.75
2.	Fire fighter equipments	0.15
3.	Weighing scale platform type	0.50
4.	Lint filling platform	0.15
5.	Miscellaneous items	0.20
Total		1.75

## PLANT AND MACHINERY

(Rs. in lakh)

S.No.	Particulars	Qty.	Rate Rs.	Amount
1.	Double roller gins	16	65000	10.40
2.	Roll press	2	5000	0.10
3.	Roll cutting stand	1	1200	0.01
4.	Automatic raw cotton feeder	16	22000	3.52
5.	Seed conveyer	42 m.	2500	1.05
		Total - A	15.08	
	Add Excise duty @ 13% of Total -A			1.96
		Total - B	17.04	
	Add M.S.T. @ 13% of Total -B			2.22
		Total	19.26	
6.	Folding Angle structure for raw cotton platform	16	1100	0.18
7.	Sheet metal guarding	16	700	0.11
8.	Transportation, Loading, unloading & packaging			0.60
9.	Electrical panels, starters etc.			1.03
10.	Contingencies @ 7.25%			1.54
Grand Total				22.72

**CIVIL WORK COST FOR ALTERATION IN EXISTING GIN HOUSE**

S.No.	Description	Quantity	Rate	Per	Amount Rs.
1.	P.C.C. 1:4:8	8.00	1280.00	Cum	10240.00
2.	0.23 m thk brick masonry	10.00	1350.00	Cum	13500.00
3.	Plaster Work	40.00	110.00	Sqm	4400.00
4.	0.23 m thk soling	2.00	240.00	Cum	480.00
5.	Floor Finishing (Rough Shahabad)	75.00	180.00	Sqm	13500.00
6.	Brick masonry steps	33.00	350.00	Rm	11550.00
7.	T.W. Partitions	75.00	530.00	Sqm	39750.00
8.	Wooden platform (Only labour)	127.00	260.00	Sqm	33020.00
9.	Structural steel work	2.40	30000.00	M.T.	72000.00
10.	White wash	1200.00	10.00	Sqm	36000.00
11.	Cement Paint	1200.00	30.00	Sqm	36000.00
12.	Dismantalling & allied work			L.S.	10000.00
					----- 256440.00
	SUMMARY				
	Cost of renovation work			Rs.	2,56,440.00
	Add 10% contingencies			Rs.	25,644.00
					----- Rs. 2,82,084.00

Say Rs. 2.82 lakhs

(Ar.Vidya Summanwar)

(CA/96/20073)



## PRE-OPERATIVE EXPENSES

S.No. Particulars	Amount
1. Establishment Expenses (including insurance, travelling etc.)	0.50
2. Start up Expenses	0.30
3. Training Expenses	0.20
4. Contingency expenses	0.71
5. Interest during construction period	2.27
<b>Total</b>	<b>3.98</b>

Annexure - 7

## LABOUR COST PER SHIFT

S.No. Particular	No. of labour	Rate, Rs/day	Amt. Rs.
1. Raw cotton carrier to gin	11	80.2	882.20
2. Sits on Machine for feeding raw cotton to autofeeder	6	80.2	481.20
3. Cotton seed remover	5	80.2	401.00
4. Lint lifter from gin and filling in jute gunnies	6	80.2	481.20
5. Sweeper and general attendant	2	80.2	160.40
<b>Total</b>	<b>30</b>		<b>2406.00</b>

N.B. Rs. 65/- per day plus 23.4 per cent benefits.

Annexure - 8

## TECHNICAL STAFF REQUIREMENTS &amp; COST

S.No. Particulars	No. per shift	No. per day	Salary per month	No. of months	Amt. Rs.
1. Fitter	1	2	2800	5	28000
2. Oilmen	3	6	2200	5	66000
3. Roll cutter	2	4	2000	5	40000
<b>Total</b>	<b>6</b>	<b>12</b>			<b>134000</b>
<b>Plus 31.3% benefits</b>					<b>41942</b>
			<b>Grand Total</b>		<b>175942</b>

**MANAGERIAL STAFF**

S.No.Particulars	No.	Salary	Month	Amt.Rs.
1. Gin Manager	1	3500/- pm.	12	42000
2. Accountant cum clerk	1	3000/- pm.	12	36000
3. Watchmen	2	2000/- pm.	12	48000
Total	4			126000
Plus 23.3% benefits				29358
Grand Total				155358

Annexure - 10

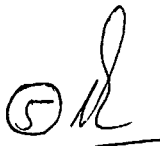
**DEPRECIATION OF FIXED ASSETS (WDV Method)**

	Civil work	Plant & Machinery	
Cost	Rs. 5.62 lakhs	Rs. 22.72 lakhs	
Rate of Depreciation	10%	25%	
Year	Depreication	Depreciation	Total Dep.
1	0.56	5.68	6.24
2	0.51	4.26	4.77
3	0.46	3.20	3.66
4	0.41	2.40	2.81
5	0.37	1.80	2.17
6	0.33	1.35	1.68
7	0.30	1.01	1.31
8	0.27	0.76	1.03
9	0.24	0.57	0.81
10	0.22	0.42	0.64



SL.	DETAILS	RATE	YR 0	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
	<b>WORKING CAPITAL REQUIREMENT</b>												
	SALES CREDIT FOR ONE MONTH			7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13
*)	LUBRICANT INVENTORY			0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
*)	STORE INVENTORY			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
*)	CASH BALANCE			0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	<b>TOTAL CURRENT ASSETS</b>			<b>8.85</b>	<b>8.85</b>	<b>8.85</b>	<b>8.85</b>	<b>8.85</b>	<b>8.85</b>	<b>8.85</b>	<b>8.85</b>	<b>8.85</b>	<b>8.85</b>
	<b>WORKING CAPITAL MARGIN @20% OF MAXIMUM CURRENT ASSETS</b>			<b>1.77</b>	<b>1.77</b>	<b>1.77</b>	<b>1.77</b>	<b>1.77</b>	<b>1.77</b>	<b>1.77</b>	<b>1.77</b>	<b>1.77</b>	<b>1.77</b>
	<b>WORKING CAPITAL LOAN REQUIRED</b>			<b>7.08</b>	<b>7.08</b>	<b>7.08</b>	<b>7.08</b>	<b>7.08</b>	<b>7.08</b>	<b>7.08</b>	<b>7.08</b>	<b>7.08</b>	<b>7.08</b>
*)	INTEREST RATE ON WORKING CAPITAL LOAN (IN %)	18.00		18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
	INTEREST ON WORKING CAPITAL LOAN			1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
	LONG-TERM LOAN REPAYMENT & INTEREST SCHEDULE												
	LOAN AT THE BEGINNING OF YEAR			28.09	25.85	22.97	20.09	17.21	14.33	11.45	8.57	5.69	2.81
	INTEREST RATE (IN %)	16.00		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	INTEREST PAYABLE			4.49	4.14	3.68	3.21	2.75	2.29	1.83	1.37	0.91	0.45
*)	REPAYMENT OF PRINCIPAL	2.35		2.24	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.81
*)	<b>COST OF CAPITAL:</b>												
*)	<b>EQUITY</b>	6.00		6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	NET CASH FLOW			6.73	7.31	8.35	8.46	8.82	9.43	9.14	8.88	8.64	8.42
	LESS INTEREST AND REPAYMENT OF PRINCIPAL			6.73	7.02	6.56	6.09	5.63	5.17	4.71	4.25	3.79	3.26
	NET CASH SURPLUS			0.00	0.29	1.80	2.36	3.19	4.26	4.43	4.63	4.85	5.16
	DIVIDEND @ 40% OF CASH SURPLUS			0.00	0.12	0.72	0.95	1.28	1.70	1.77	1.85	1.94	2.07
	DIVIDEND AS A FRACTION OF EQUITY			0.00	1.97	11.98	15.75	21.27	28.39	29.53	30.87	32.35	34.42
	PERCENTAGE DIVIDEND			0.00	1.97	11.98	15.75	21.27	28.39	29.53	30.87	32.35	34.42
*)	DEBT			28.09	25.85	22.97	20.09	17.21	14.33	11.45	8.57	5.69	0.00
*)	INTEREST ON DEBT (%)	16.00		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	WEIGHTED COST OF CAPITAL			13.18	13.36	15.17	15.94	17.36	19.66	20.65	22.12	24.39	34.42
	<b>WEIGHTED AVERAGE COST OF CAPITAL (%)</b>			<b>19.63</b>									
	<b>WEIGHTED AVERAGE COST OF CAPITAL</b>			<b>0.20</b>									
*)	DISCOUNTING FACTOR			0.836	0.699	0.584	0.488	0.408	0.341	0.285	0.238	0.199	0.167

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
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AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

  
2/3.98

**PROJECT PROPOSAL**

Title of the Project Proposal : CONSTRUCTION OF MINI DAIRY  
AT BAGALKOT  
(Relocation)

Country : INDIA

Project Proposal Prepared by : DR. V. N. RAMAKRISHNA

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
India, Philippines and Japan



**INTERNATIONAL COOPERATIVE ALLIANCE**

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New Delhi 110 065, India

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Further, I feel, it is a right place to call upon to the help rendered to me by **Dr.Channegowda, Managing Director, Karnataka Milk Federation** who gave me all-out support and encouragement to participate in the training programme. I take immense pleasure in extending my sincere and heart felt thanks to him.

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**DR.V.N.RAMAKRISHNA,  
KARNATAKA, INDIA.**

## EXECUTIVE SUMMARY

**Title of the Project** : Establishment of Dairy at Bagalakot.  
**Name of the participant** : Dr.V.N.Ramakrishna.  
**Sponsored organisation** : Karnataka Milk Federation,India.  
**Project Guide** : Prof.G.krishnamurthy,IRMA, Anand

### FEATURES OF THE PROJECT

- 1.The capacity of the proposed dairy is 30LTPD to be located at Bagalakot. Implementation period of the project is 12 months and the life of the project is taken as 10 years.
- 2.The total capital investment is Rs.21.4ML, out of which Rs.15ML for Dairy and Rs.6.4ML will be spent on organisation of co-operatives at village,the investment required for organisation of DCS and other activities is funded by Govt of India in the first five years and the union will continue the activities from the surplus funds mobilised in the project .
3. Farmer members and Union contributes 6 ML to the project cost as equity share.
4. The project is aiming to generate self employment opportunities for the UFP displaced families in specific and rural poor to prevent migration to urban areas.
- 5.Project enables the Union to cover new potential areas and thereby attain viability.

### JUSTIFICATION FOR THE PROJECT

1. The present processing facility at Bagalakot is proposed to shift to a new location and has inbuilt constraints for future expansion.
- 2.The project envisaged to cover addition 185 villages (19200 families ) in 5 taluks of the district.
- 3.The project covers 41 rehabilitation centres benefiting 3253 families under Upper Trishna Project, a major irrigation project.

4. The total minimum income generated by the Project displaced families and other families is approximately Rs.40ML.

5. The strategic location proposed for the new dairy in the project enable the Union to save Rs.0.2ML on transportation cost every year and the proposed dairy increases the operating efficiency of the plant, resulting reduction in energy, fat and SNF losses, which adds to the profitability of the Union.

## PROJECT APPRAISAL

1. The NPV is Rs.5.4ML at a discount rate of 14% and IRR is 21% of the proposed project. The sensitivity analysis indicates the project viability under pessimistic scenario of 5% decrease in retail milk sales and 5% decrease in procurement quantity.

2. The proposed project has reasonable operating leverage through out the project life.

3. The proposed project provides direct employment to 1500 families.



## LIST OF ABBREVIATIONS

AI	-	ARTIFICIAL INSEMINATION
AICRP	-	ALL INDIA CO-ORDINATED RESEARCH PROJECT
AMUL	-	ANAND MILK UNION LIMITED
BAIF	-	BHARATHIYA AGRO INDUSTRY FOUNDATION
BCM	-	BACKWARD CLASS & MINORITIES CORPORATION
BIMUL	-	BIJAPUR MILK UNION
CC	-	CHILLING CENTRE
CB	-	CROSS BREED
DAH	-	DEPARTMENT OF ANIMAL HUSBANDRY
DCS	-	DAIRY CO-OPERATIVE SOCIETY
DRDS	-	DISTRICT RURAL DEVELOPMENT SOCIETY
GNP	-	GROSS NATIONAL PRODUCT
GOVT	-	GOVERNMENT
Ha	-	HECTARE
IRR	-	INTERNAL RATE OF RETURN
IRDP	-	INTEGRATED RURAL DEVELOPMENT PROGRAMME
KMF	-	KARNATAKA MILK FEDERATION
LPD	-	LITRES PER DAY
MHa	-	MILLION HECTARE
ML	-	MILLIONS
MLPD	-	MILLION LITRES PER DAY
MM	-	MILLIMETER
MSL	-	MEAN SEA LEVEL
MT	-	METRIC TONNES
NABARD	-	NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT
NDDB	-	NATIONAL DAIRY DEVELOPMENT BOARD
NO	-	NUMBERS
NPV	-	NET PRESENT VALUE
OF	-	OPERATION FLOOD
PTC	-	PROCUREMENT TRANSPORTATION COST
QTY	-	QUANTITY
SC	-	SCHEDULED CASTE
SNF	-	SOLID NOT FAT
SqKm	-	SQUARE KILOMETER
ST	-	SCHEDULED TRIBE
TLPD	-	THOUSAND LITRES PER DAY
TPD	-	TONNES PER DAY
TRYSEM	-	TRAINING OF RURAL YOUTH FOR SELF EMPLOYMENT
%	-	PERCENTAGE
@	-	AT THE RATE OF

## ANNEXURES

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ORGANISATION CHART OF BIMUL	3
DETAILS SHOWING TALUKWISE VILLAGES & DCES	4
TALUKWISE CATTLE POPULATION	5
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CASH FLOW OF THE PROJECT	10
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# KARNATAKA STATE



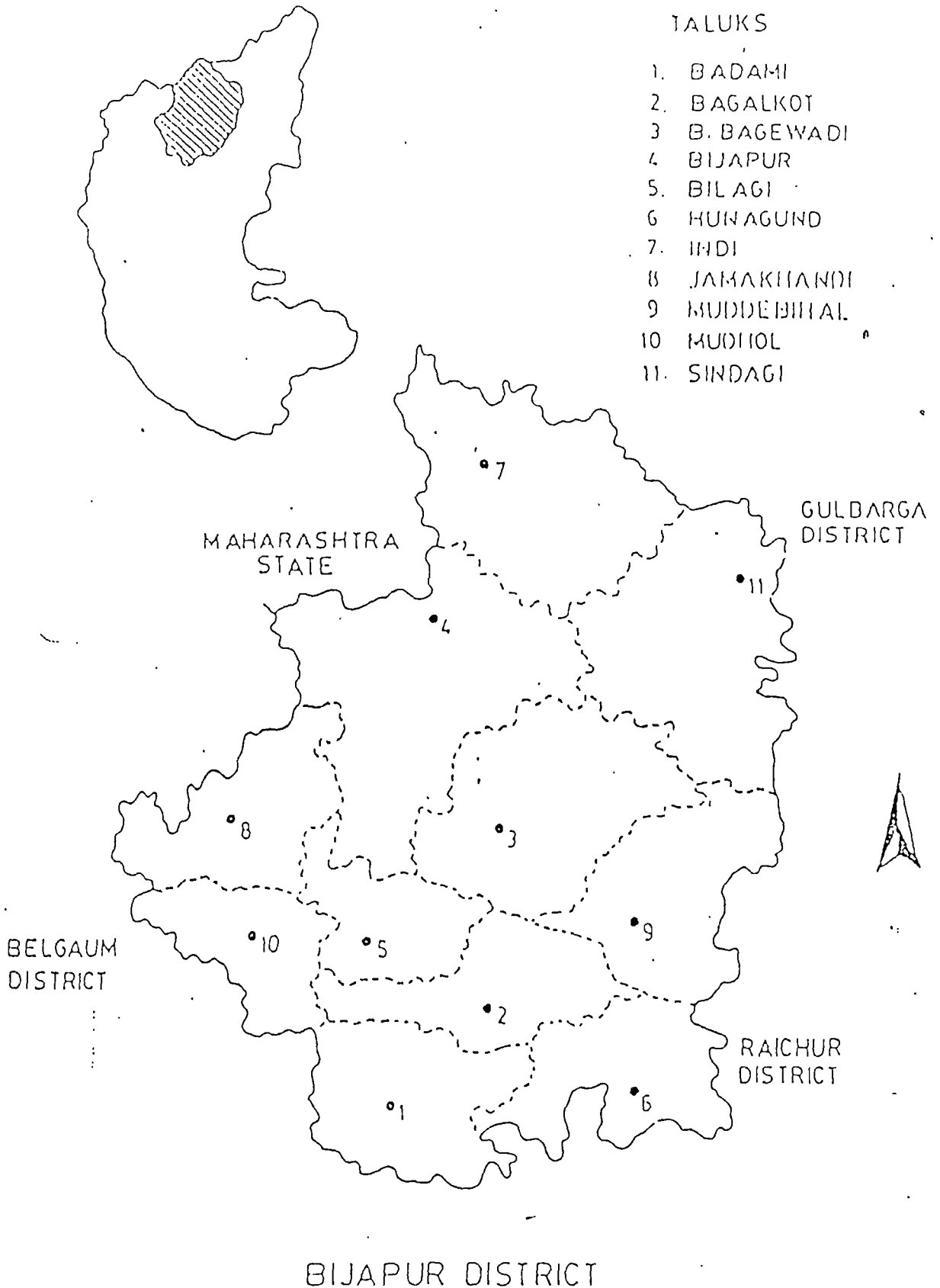
KARNATAKA STATE



KARNATAKA

TALUKS

1. BADAMI
2. BAGALKOT
3. B. BAGEWADI
4. BIJAPUR
5. BILAGI
6. HUNAGUND
7. INDI
8. JAMAKHANDI
9. KUDDEBHAL
10. KUDHOL
11. SINDAGI



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## CHAPTER - I

### 1.0 INTRODUCTION

#### 1.1 DAIRY DEVELOPMENT SCENARIO IN INDIA

Agriculture forms the back bone of Indian economy and 78% of population's livelihood is agriculture. Dairying in India has been an integral part of agriculture since time immemorial. The dairy industry is the rising sun of India's agriculture sector. Behind this huge quantity of liquid white gold there are 700 ML more family attending 57 ML cows and 39 ML buffaloes holding the number one position. 19% of World's total livestock population and 51% of Asian bovine population of 550 ML. The milk economy generates around Rs.58 billion annually and is likely to touch Rs. 80 billion by the turn of century. According to 1990 census 80% of the Indian population of over 800 ML people are living in villages under conditions of great poverty. Large chunk farmers who are rearing animals and producing milk are dependent on selling their milk to middle man who pays lowest possible price and sale it in towns/cities at inflated price to the consumers having poor quality, thus inflating their profit through often very unhygienic practices.

Growth and development of milk producers co-operatives in Feroz district Gujarat state popularly known as ANAND MILK UNION LIMITED (AMUL) had given momentum by Government of India to establish NDDB (National Dairy Development Board) under the Chairmanship of Dr. V. Kurian to replicate the AMUL pattern DCS throughout the India. The principles of co-operation such as open/voluntary membership, democratic management, co-operative education, distribution of surplus amongst the members in proportion to their business are strictly ensured in the milk co-operatives. About 65% of milk produced in Operation Flood (OF) areas is traded and 35% retained for household consumption.

The Dairy Board designed a massive programme and coined as OF and OF is perhaps the world largest dairy development programme in terms of its scope, coverage and longevity. OF has invested Rs.20,000 ML in creating and strengthening the basic infrastructure for dairy development, cooperative dairies now handle about 12% of the total liquid milk marketing in India, through assured remunerative price and marketing support. The ANAND pattern is the basis of the white revolution is acclaimed as a significant phenomenon of our times.

India has established herself as the second largest producers of milk in the world, the per capita availability has increased from 107 grams (1970) to 192 grams in 1995 despite a growth in population over 2% per annum. India is likely to emerge as the world largest milk producing country by the year 1998 or so (Gupta 1997 and others) With growth rate of 5% production likely to touch 78 MT in a year and would be around 86 ML in year 2000.

The Gross domestic Product (GDP) contribution is 29% by the milk, this however doesn't include draught power. Incidentally in 1977-78 is the first year of 9th five year plan and planners have indicated that priority will be accorded to the agriculture sector. The plan document envisages 7% growth rate and the share of agriculture sector is itself comes to 4%.

An important feature of India dairy industry is the predominance of small scale milk producers owning one or two milk animals each. 70% of milch animals are owned by marginal and small farmers (with land holdings of two hector or less) and landless household. They constitutes about 67% of total milk producing household and contribute about 60% of total milk produced in the country. About 65% of these weaker section have joined us members. Another characteristic features of India's dairying is that milk production and crop production on most of the farmers, are complimentary enterprise.

## 1.2 PROFILE OF THE BIJAPUR DISTRICT (ANNEXURE - 1)

Bijapur Milk union consist of a revenue district of Bijapur which is the Northern most border district of Karnataka. The district is surrounded by Belgaum (West), Dharwad (South), Raichur (South East) and Gulbarga (East) districts of Karnataka and Sholapur district (North & North East) of Maharashtra and lies between 75-19' and 17-29' North latitude and between 75-19' and 76-12' East latitude. It is placed at an altitude of 1950' above MSL. There are 4 sub divisions, 11 taluks, 166 Mandal Panchayats and 1244 villages spread over a territory of 17067 Sq.km. (1.71 Mha.) which is the largest district in the State, of this 1.05 Mha. is available for cultivation.

According to 1990 census population of the district was 2.9 ML and 3.4ML (1981 census) indicating a growth rate of 2% per annum over the last decade and it ranks fifth in terms of total population in the State. About 76.5% of the district's population is rural as against State average of 69% SC/ST account for 18.8% total population.

### 1.2.1. CLIMATE

The climate of the district is sub-tropical and semi-arid type with severe summer and moderate winter. The average rainfall of the district is 571 mm. being the lowest in the state. The rainfall is highly erratic and rendering most parts of the district prone to drought quite frequently. Five rivers (Krishna, Doni, Ghata Prabha, Bhima & Malaprabha) flow through the district and the total length of flow is 470 Miles (768 kms.). The surfaced road length is 5824 kms.



### 1.2.2. AGRO-CLIMATIC AND ZONAL PLANNING

The soils in the district are shallow to deep black, red fine clay loam and red sandy loam. The Planning Commission has identified four agro-climatic regions for formulating and implementing the need based, local specific and practically feasible development programs. They are, (i) irrigated region with deep black soil covering Bilagi, Jamhandi, Mudhol taluks (ii) rain fed region with deep black soil with Bagalkot, B.Bagewadi, Hungund and Muddebihal taluks, (iii) rain fed region with shallow to medium black soil covering Bijapur, Indi, Sindagi and (iv) region with red soil covering Gadami taluk.

### 1.2.3. AGRICULTURAL SECTOR

District is predominantly agriculture in nature with 61% of total geographical area under cultivation and providing work opportunities to about 75% of the working population. The district is one of the centrally declared backward district. The district income at current prices for 1991-92 was Rs 11000ML and the per capita income at current prices was Rs 4414/- as against the state average of Rs 5898/-

Of the total geographical area of 1.71MHa, 1.04 MHa. are available for cultivation. The net sown area in farming is 73.5%, while area under forest accounts for 4.85% of the total area. The net irrigated area which was about 17.5% of the net cropped area during 1988-89 increased to 23.45% during 1994 95.

### 1.2.4. LAND HOLDING

The land holding pattern in the district indicates the small and marginal farmers account for 58% of total land holdings are above 4 Ha. account for 61% of land.

### 1.2.5. CROPPING PATTERN:

The cropping pattern in the district reveals that food crops like Jowar, maize, Bajra, wheat, gram, turdal, commercial crops like Sugarcane, Cotton, Sunflower, Groundnut, Safflower and horticulture crops like Grapes, Pomegranate, Guava, Sapota, Banana, Citrus, Lime, Mango are grown. Recent trend shows that there is low shift towards fruit crops like Pomegranate and grapes.

### 1.2.6. ANIMAL HUSBANDRY:

Animal husbandry is the second largest allied activity in district contributing nearly 11% of the district's total income. Dairy activities are being undertaken as subsidiary occupation and in terms of importance are next to agriculture. Major part of the beneficiaries are small and marginal farmers and agricultural labourers. Traditionally Dairy Industry is well developed in the river valley regions, Buffalo has been the main source of milk. The rural milch cattle population as per 1970

census cattle was 1.02 ML of which cow population was 0.53ML and Buffalo population was 0.71ML respectively. The average density of milk production was estimated as 10 tonnes/Sqkm., with pockets of very high concentration.

#### **1.2.7.GRAZING FACILITIES:**

about 0.024 Mha. of land is available for grazing which is just sufficient for 4 months of grazing at the rate of 4-5 hours/day. The quality and quantity of grasses available is very poor and hence cannot sustain the requirement.

#### **1.2.8.ANIMAL HEALTH:**

The health care facilities are provided for the cattle population by the Department of Animal Husbandry (DAH) and BIMUL, through the veterinary hospital / rural veterinary dispensary and DCS respectively.

#### **1.2.9.BREEDING FACILITIES:**

BIMUL has provided artificial insemination (AI) facilities at village level by training the DCS staff. Bulls were supplied by Union to cover natural service, especially in buffalo tracts. In addition to the above facility the DAH and BAIFF had also established AI Centres.

#### **1.2.10.FODDER DEVELOPMENT:**

Fodder available from forest, wasteland and grazing land is 212.62MT and crop residues of jowar, bajra, sugarcane tops, ground nut, pulses etc., are the other sources. On the basis of Livestock Census 1990 the total dry matter requirement equals to 216.68MT. Existing grazing lands provide only 10% of dry matter requirements. Since crop residues are used as fodder and are available in plenty, the fodder requirements of animals are met to some extent. Cattle feed of IMF and private companies are readily available in local markets.

#### **1.2.11.MARKETING AND PROCESSING FACILITIES:**

This apart traditional milk products such as khova and curds are also sold to the neighboring state. There is a well knit private milk collection net work which is organised by the private milk business representing the Warana Dairy, Chittalo Bros (Poona), Gokul Dairy, Krishna Dairy, Ganesh dairy and other small private dairy men who supplies milk to Bombay market or local towns. In addition to this the BIMUL and IMF is also having processing facilities. (Details are shown below)

### A) OWNED BY UNION

Facilities	Location	Capacities			
		Initial	Year	Expanded	Year
Chilling Centres	Bagallot	4000 LFD	1976	20000 LFD	1990
	Jamkhandi	4000 LFD	1987	8000 LFD	1992
	Bijapur	4000 LFD	1979	20000 LFD	1997

### B) OWNED BY FEDERATION

Dairy Plant	Asangi	0.15 MLFD	1978	-	--
Drying Plant	Asangi	10 TFD	1978	-	--

#### 1.2.12. SECTORAL PROFILE AND ASSESSMENT OF POTENTIAL:

The present production of milk in the district is about 0.43ML LFD through its combined population of cows and buffaloes which is 0.83ML. Increase in milk production is not commensurate with the increase in cattle population.

The district average milk yield of good buffloe breed is around 4 and 5 LFD, giving a maximum of 1500 litres per lactation. If increase in milk is to be attempted in milk yield, in the long run the CB Cows have to be necessarily inducted in place of buffaloes through proper extension and motivation of the farmers. The annual growth rate works to 1.0 to 1.5%. Taking the same growth rate which is quite likely to be maintained in the next few years too.

Union will continue to implement cross CB cows/upgraded buffaloes with the financial assistance from Scheduled Caste and Scheduled Tribe (SC/ST) and Backward class development corporation.

#### 1.2.13. PROGRAMME RATIONALE:

Removal of poverty has been the central concern of planning in India. However, during the first three Five year Plans, (1951, 56 and 61) the main emphasis of Planning was to achieve higher growth in Gross National Product (GNP). The thinking then was that the benefits of higher growth will automatically.

The incidence of rural poverty has reduced over the past few years. The magnitude of the problem is still very large. To solve the problem of poverty in general, and rural poverty in particular, we have to continue our efforts in implementing different programs of poverty alleviation.

#### 1.2.14.NEED FOR PROGRAMME CONTINUATION:

Integrated Rural Development Programme (IRDP) is one of the major beneficiary oriented poverty alleviation programme. Its objective is to enable selected families in rural areas to cross the poverty line and is achieved by providing productive assets and inputs to the target group through financial assistance in the form of credit subsidies. A Centrally sponsored scheme "TRAINING OF RURAL YOUTH FOR SELF EMPLOYMENT (TRYSEM) was launched by the Govt. of India with an objective to provide technical and entrepreneurial skills to rural youth families below poverty line, backed by financial support through the bank's National Agricultural bank for rural development (NABARD) played a key role in refinancing to regional rural banks. The banks have financed the beneficiaries to purchase the milch cattle after the beneficiaries are trained on various aspects of animal management. Major activities in the IRDP and TRYSEM was rearing of dairy cattle, this has helped in increasing in the milk production and socio-economic status of the people who were below the poverty line. A recent study by Institute of socio economic studies has revealed that the additional income derived by the beneficiaries by rearing milch cattle varied from Rs. 2400/- to Rs. 5000/- per annum in Karnataka. NABARD therefore endeavor to seek and support on priority basis, through its various promotional and refinance scheme avenues of additional employment outside agriculture in rural areas for raising of those living below poverty line.

## CHAPTER II

### 2.0. PROFILE OF THE DISTRICT

#### 2.1. BACKGROUND

A critical evaluation of the profile of Bijapur Mill. shed indicates that a viable dairy Industry can be developed if the DCS are systematically organised on the Amul pattern. The economic backwardness and cyclical drought experienced in the district will render dairying as a boon to the farmers. In times of shortage of fodder, cattle feed can be purchased from the neighboring areas to sustain dairying. The well developed traditional milk production pockets have not only spread throughout the length and breadth of the district but also have to be brought under the co-operative ambit, this will enable to reach economics of scale resulting in a viable network of primary DCS at village level and a strong secondary milk union at the district level.

The Government of Karnataka in the year 1975 had established Karnataka Dairy development Corporation with the financial assistance from world bank in the southern 8 districts. Later in 1983-84 with the assistance of NODD through DF II/III the dairy development activities were extended to the uncovered districts of the state with a prime objective of organising AMUL pattern DCS at the villages. AMUL pattern has a 7 tier structure right from the village level DCS, district level milk unions & ultimately the milk federation at the State level. The organised dairy development activities started in 1984 by positioning the Sphere Head team in Bijapur district by IMF, later with increase in the activities the BIMUL came into existence in 1986 with 101 DCS as its members.

#### 2.2. PROFILE OF BIMUL

The BIMUL is a district level co-operative body affiliated to IMF at state level representing the farmers organisation and also implementing dairy development activities by organising DCS at villages. In order to achieve economics of scale to ensure maximum returns to the milk producers at the same time providing whole some quality milk at lowest possible price to urban consumers thereby improvement of socio economic status of the farmers aimed. (Details showing the past performance on various activities in ANNEXURE - 2).

## 2.3. OBJECTIVES OF MILK UNION

- 2.3.1. Providing assured and remunerative market for all the milk produced by the members.
2. Providing hygienic milk to the urban consumers.
3. To build village level institutions in co-operative sector to manage their activities.
4. To ensure provision of milk production inputs, processing facility and better marketing.
5. To educate the farmer members on the co-operative principles and its working by providing suitable education and training.
6. To facilitate rural development by providing opportunities for self employment at village level.

## 2.4. THE MANAGEMENT:

The Board consisting of elected representatives from the members of the DCS and nominated officials as per Bye laws. The Chief Executive and the Managers are deputed from the F.M.F. The tenure of the board is three years. The board takes the policy decisions, the highest authority is the general body. (The organizational chart is shown in ANNEXURE - 3).

## 2.5. ORGANISATION OF MILK PROCUREMENT:

The DCS organised are in linear milk procurement routes with coverage at three chilling centres namely Bijapur, Bagaliol and Jamhandi. The transportation of milk is through contract vehicles twice a day. The distance between the villages is about 3-10 kms. and coupled with this the absence of inter-connecting bridges across the rivers has compelled to adopt linear routes. The density of milk production although varies across the regions, it is generally low when compared to other unions. All these factors have resulted in higher PTC/lg of milk. The milk procurement varies with a flush to lean ratio of 1:2.5 litres.

## 2.6. INPUTS

Initially the animal health care had received the top priority through weekly mobile veterinary routes, emergency visits, first aid facilities and preventive vaccination services. The AI is catered by trained AI workers in single and cluster concept. Improved varieties of fodder seeds, cuttings are provided to members. All these services are provided at nominal charges to members. Balanced cattle feed is also supplied on no profit no loss basis.

## 2.7. PROCESSING INFRASTRUCTURE:

The total built in capacity of all the processing facilities is 48 LLPD, the surplus milk received during flush season is sent to Dempo dairy/Dharwar Mill Union for conversion.

### PROCESSING CAPACITY & UTILISATION LITERS PER DAY(LPD)

CC Name	91-92		92-93		93-94		94-95		95-96		96-97	
	QTY	%	QTY	%	QTY	%	QTY	%	QTY	%	QTY	%
Bijapur	2750	69	3600	90	3444	86	2855	71	2372	59	2412	60
Jambhandi	6429	80	10020	125	10722	126	7577	95	6622	82	8000	106
Bajajhot												
A	6921*	104	11445*	138	10722*	142	9014*	144	8650*	152	9168*	156
B	13890		15900		17634		19834		21673		21904	

Note :

A : Indicates Raw Milk and B:Indicates Processed Milk

\* k " Indicates capacity utilisation (A&B)

## 2.8.MARKETING AND SELLING:

The union undertakes distribution of toned pasteurized milk in pouches through a distribution network covering 21 towns of the district. The average sales is 19000LPD. The parlor facilities were also established, to ensure availability of liquid milk throughout the day on franchise and marketing of products.

## 2.9.TRAINING AND HUMAN RESOURCE DEVELOPMENT

The emphasis is being laid on man power development through training and other motivational programs.The training and extension plays a vital role to disseminate the knowledge of animal husbandry practices, technical inputs, building sound co-operatives and realizing the long term benefits of self managed co-operatives. Farmer to farmer training and extension programme by inter union exposures.

### 3.0. PROJECT COMPONENTS

#### 3.1. INTRODUCTION

The Bijapur Milk Union is cooperatively new one and at present it has covered around 240 out of 1244 villages. Though the Bijapur district lies in dry and arid tract in the Deccan plateau, it is traversed by five rivers. A close look at the society formation indicates that the societies were formed mainly in the villages located on the banks of the rivers in the southern and southwest part of the district. Therefore the East and Southeast parts of the milk shed could not get the benefit of dairy development activities even though vast potential exists there, this is mainly due to lack of nearby processing facilities. Added to this there is already move to shift the existing plant in view of its location at industrial area as there is no scope for further expansion. The project will be implemented in one year and life time will be ten years. Hence the proposed project is conceptualized.

#### 3.2. OBJECTIVES

3.2.1. The Union is having the main object of dealing with all kind of activities conducive to the economic and socio-economic development of the DCS by organising effective production, processing and marketing of milk products through the organised and affiliated milk producers co-operative societies.

3.2.2. The DCS function daily and act as a marketing outlet for the milk produced in the villages including rehabilitation centres. Input facilities are also channelised to the project affiliated dairy farmers through these Societies. It includes animal health coverage, sale of balanced nutritious cattle feed, supply of fodder seeds and seedlings, artificial breeding facilities, mobile and emergency veterinary health care, training and extension, etc. Payment for the milk purchased is arranged by the milk Union through these societies once in a week. The profits made by the DCS would be appropriated for various purposes as per the bye-laws, the major portion of which will be the bonus to members.

#### 3.3. JUSTIFICATION OF THE PROJECT

According to 1990 census there is a total production of 41300 litres of milk with marketable surplus of 19000 litres in the target milk shed area apart from 20 LFD surplus existing in the already covered area, collecting 14500 LFD from 103 DCS covering 110 villages. About 140 more DCS could be organised in the target milk shed area and attach to 6 to 8 milk routes. (Details showing taluka wise villages and DCS organised and to be organised in ANNEXURE - 4). Given the fact that most of these target villages will be irrigated by lift in the near future, there is enough scope for increasing the milk production. This potential will



further get boosted by inducting milch animals under various Govt sponsored schemes. The proposed plant will receive sufficient milk to become financially and operationally viable.

5.3.1 The AICRP Study team has estimated that by 2000 AD the local Cow and CB Cows population in the district should reach the level of 81,500 and 9500, and buffalo to 98,000. Fodder development in 1400Ha of land, number of dairy cooperative societies should be 350. However, looking to the present level of infrastructure, besides the need for having quality milch animals. For the purpose, female Cross Breed Calf rearing and fodder development in 115Ha., to achieve this a provision Rs.26.36 ML. has been provided in the entire ninth five year plan.

5.3.2 In view of the existing potential for developmental activities in the eastern & southeastern parts of the milk shed. (Details showing taluka wise cattle population in ANNEXURE- 5). The existing plant ideally has to be shifted altogether to a new area where most of the milk routes gets conversed to economize the operational costs. Apart from this the proposed new facility would benefit the larger population which affected by the Upper Krishna Project, a major irrigation project coming up in this area. The rehabilitated villages also can be covered under dairy development activities in a way to help the displaced people to generate remunerative employment avenues to prevent migration to the urban areas. In all this project will be covering 180 villages under the dairying fold, and also to increase the coverage of towns for milk marketing. Thus the plant is justified for funding for the following reasons.

1. Dairying has been a proven and potential income generating activity for the rural poor.

2. There is scope to develop and nurture this activity in most of the villages and also rehabilitation centers of Upper Krishna Project.

3. 180 number of uncovered villages and 41 rehabilitated villages under UFP can be covered.

The existing plant at Bagalalol was established in 1978 with a farm cooler by the GOVT of Karnataka, later in 1992 the IMF strengthened by adding equipment to process 20 TLPD with pasteurisation facility in the industrial shed. As such

1) There is no scope to add civil constructions to house effluent treatment plant which is statutory obligation.

2) One third of the DCS and 50% of villages area are getting submerged within 2 years and there is no scope to organize new DCS in the south and south west, resulting decline in milk flow.

3) The refrigeration system has become old and junked required immediate replacement altogether.

4) The water available is highly saline in nature.

Hence, the milk Union in order cater to the development needs of these region requires to establish a processing facilities.

### **3.4.CREATION OF INFRASTRUCTURAL FACILITY AT VILLAGES**

#### **3.4.1.DCS ORGANISATION**

The dairy co-operatives are organised by the union utilising the existing staff and the infrastructure required to make 140 functional DCS, the union has planned to utilise the grants made available by GOVT. Rs.1.9ML will be spent in five years.

#### **3.4.2.ANIMAL HEALTH CARE;**

The Union provides weekly/fortnightly Veterinary Health checkup of the members at their door step. Other than regular health service the emergency service is also made available on nominal charges. Added to this the first aid facilities is also provided through DCS.

#### **3.4.3.BREEDING FACILITIES;**

The Union locates A.I. Centres at the selected DCs by providing liquid Nitrogen Container having Semen of Proven Bulls to inseminate local Animals by the DCS staff to upgrade the genetic potentiality of milk production. Most of the members in the proposed project area are having 12,000 breedable low yielding cows and buffloes with an average milk production 1.0 to 2.5 litres. In order to increase the milk production by upgrading Union has proposed to start 43 AI.Centres. The union will be spending Rs.2.10ML to provide animal health care and AI facility.

#### **3.4.4.FEED AND FODDER:**

9% of the project area being drought affected area resulting shortage of fodder. The Union provides the various package of practices in helping to grow fodder and to conserve by enriching. In addition to this balanced cattle feed is purchased from federation owned Cattle feed Plants and supplied to the DCs on no profit and no loss basis.The union proposes to spend Rs.0.75ML in this programme.

#### **3.4.5. TRAINING AND EXTENSION:**

The Union machinery will do the extension to educate the farmers on practicing modern Animal Husbandry practices. training the members at the villages to emphasise their role, responsibilities and powers towards DCs. The film shows, cattle shows are conducted at village level for mass education, inter union and union visits are arranged for progressive farmer to see and learn. The staff of the DCs are also trained at Union training Centre to know how to maintain accounts, to test the quality of milk and u.t.training.The union proposes to spend Rs.1.65ML in this programme.

## CHAPTER IV

### 4.0. PROJECT OUTLAY

The total estimated costs for the project is shown in (ANNEXURE 6). This includes the cost of the equipments which can be reused from the existing facility. The project envisages equity participation from the farmer members, the mill Union and donor agencies either the GOVT OR OVERSEAS DEVELOPMENT AGENCIES. The assistance needed is one time and the project is scheduled for completion within 12 months duration. Added to this the funds required to organise and to stabilise DCS in the proposed project area to an extent of Rs.6.4ML. In the first five years Rs.4.4ML will be spent out of this the share GOVT OF INDIA is Rs.3.52ML and the union share is 0.88ML. After fifth year the union will spend Rs.2.0ML out of the funds generated from this project.

### 4.1. PROJECT IMPLEMENTATION

The project is assumed to be implemented in one year. This is a crucial part of the project any delay in implementation will lead to additional investment. The details of the list of activities identified along with the time schedule is shown in in ANNEXURE 7 and 8).

### 4.2. CAPITAL INVESTMENT:

The capital investment of the project is estimated approximately at Rs.15 ML out of this the contribution from union and farmers is Rs. 6 ML. For the balance of capital investments the union will mobilise funds either from district development authority or overseas development agencies. However the project has been appraised considering the cost of the capital at the rate 14% interest.

#### 4.3.SOURCE OF FUNDS

Sl. No.	SOURCE	CONTRIBUTION (Rs.in ML)
A.		
1.	Equity from producers @ the rate of 10 paise /Ltr milk collected for the first two years	0.25
2.	Dairy Milk Union and sale proceeds of existing building	1.25
	DBB utilising existing equipments	4.00
	<b>Total A</b>	<b>6.00</b>
B	<b>Total PROJECT COST</b>	<b>15.00</b>
	Contribution from Union and producer(internal)	6.00
	Funds required (external)	9.00

#### 4.4.APPLICATION OF FUNDS

The total outlay proposed to implement this project is Rs.21.40ML. The capital investment is Rs.15ML, will be spent for construction of dairy. The union is getting funds from GOVT OF INDIA in phases to organise 150 woman VCs in the milk shed for five years in the ratio of 80:20 (GOVT:UNION).After five years to continue the above activity the union will provide 100% funds out of the surpluses generated in the project.(Details showing a physical and financial targets on various activities in ANNEXURE-9)

#### 4.5.BASIC ASSUMPTIONS

1. The procurement per existing DCS 100 LFD and 50 LFD for new DCS in the commissioned years, on an average procurement growth of 3% upto five years and 1.5% there onwards.
2. The average FAT and SNF content of incoming milk is 5.6% and 8.1% for the first 2 years and 6.0% and 7.0% subsequent years.
3. The sale price for toned milk taken @ Rs. 11 and standard milk @ Rs.12 per litre. The sale price of bull milk/ltr is taken @ Rs.9.00/litre 1 year and Rs.9.50 in subsequent years.

1. Surplus FAT converted in to ghee is valued @ Rs.20 per kg and surplus SNF converted in to skim milk is valued @ Rs.5.20 per litre.
2. Handling loss of FAT & SNF taken at 0.75% and 0.25% respectively. (The present handling loss of FAT and SNF is 0.75% and 0.50%)
3. Cost of production per litre taken as under....
  - a. Transportation cost : 65 Paise
  - b. Chilling cost : 15 Paise
  - c. Pastuerisation : 40 Paise
  - d. Facting : 40 Paise
  - e. Selling and distribution : 65 Paise
4. Depreciation @ 8.1%, since the operations are in two shifts. (calculated in written down value method depreciation for buildings is taken as 10% and for equipment and machinery is taken as 6.1%)
5. The salvage value is taken as Rs.2.5ML after ten years.
6. The project will be implemented in one year and its life cycle is taken as 10 years.
7. The minimum procurement price of cow milk (7.5% FAT and 8.5% SNF) is Rs 6.40 and for buffalo (6.0% FAT and 9.0% SNF) is Rs 9.00.
8. Whenever an increase in procurement price will be compensated by increase in selling price of the milk.
9. In the second year number of functional DCS has declined. (23 DCS village: will be submerged).
10. Rs.0.2ML of transportation cost approximately saved in a year.

14. The union doesn't propose for borrowing of working capital for raw material purchase as there is liquidity.

15. In the beginning of the project out of the total milk procured buffalo and cow milk are in the ratio of 80:20 and by the end of the project the ratio will be 60:40.

#### 4.6.PRODUCTION COST:

The sum of fixed costs and variable costs are calculated annually and are shown below.

Year	1	2	3	4	5	6	7	8	9	10
Fixedcost	5.97	6.54	6.75	7.20	7.69	8.23	8.81	9.43	10.19	10.98
Variable	40.09	42.04	50.65	59.90	68.78	72.08	73.98	75.81	77.64	79.47
Total	46.06	48.58	57.40	67.10	75.97	80.31	82.81	85.29	87.84	90.45

## CHAPTER V

### 5.0. FINANCIAL ANALYSIS

#### 5.1. FINANCIAL EVALUATION

The project is appraised projecting the cash flows taking different level of operation based on the milk procurement and sales. During first two year of the project cash flow is almost negligible as the dairy operates at the break even quantity. Third year onwards the project generates sound surplus. The projected cash flow includes the savings in PTC, because of the strategic location suggested for new dairy. The Net present value of the cash flows at 14% discount is more than one, which amounts to Rs. 5.54. Further the project is appraised using the internal rate of return concept. The IRR is around 21%, which justifies the investment. The contribution has increased from Rs. 1.45 to Rs. 8.02/litre. The operating leverage is quite reasonable throughout the project life time except for the first 2 years. The annual cash flow projected is given below. (For details see ANNEXURE-10).

FINANCIAL APPRAISAL											
(CASH FLOWS)											
YEARS	0	1	2	3	4	5	6	7	8	9	10
TOTAL FLOW	-15										
CASH FLOW (N/P)	-0.00	0.00	3.64	5.09	6.51	6.56	6.35	6.08	5.74	5.32	
CASH FLOW (PTC)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
RESALVAGE											2.5
TOTAL	-15	0.20	0.20	3.84	5.29	6.51	6.76	6.55	6.28	5.94	8.02

NET PRESENT VALUE @ 14% DISCOUNT 5.54

#### 5.2. SENSITIVITY ANALYSIS:

Sensitivity Analysis is carried out taking 5% decrease in retail milk sales and 5% decrease in milk procurement. Even at decreased level of operation the project will be viable. It is of most importance that the union attaining the level of activity as contemplated, as economics is very sensitive to small quantum dip in procurement and sales. (See ANNEXURE-11 & 12).

### 5.3.COST BENEFIT ANALYSIS

5.3.1. This project on dairy development encompasses 144 number of villages and 41 number of rehabilitated villages about 12932 families who are eligible for assistance under INCOME GENERATED ACTIVITY of which even 25% of families opt for dairying each family will be generating Rs 2500 to 6000 as net additional income from dairying. In all there are 20200 number of families which can be benefitted by increased income generation by dairying. Each family generates net income of Rs.2000 per annum from milch animals. a total of Rs.40ML is the additional income generated from dairying per year in the project area.

5.3.2.The operational expenditure for the Union would be save substantially by means of reduction in transport cost to the tune of Rs.0.2ML, apart from increased operational efficiency. By means of reduction in handling losses, reduction in spoilage the Union/DCS would be gaining another Rs. 0.3ML/annum. In a nutshell the environment friendly mass employment generating project will not only be a harbinger of prosperity of the rural families but also promoting the silent transformation of socio-economic profile of the target villages.



## CHAPTER VI

### 6.0. SWOT ANALYSIS OF BIJAPUR MILK UNION

#### 6.1. STRENGTH

* DISTRICT HAVING MILK POTENTIAL (IN MLPD)	
TOTAL PRODUCTION	0.43
MARKETABLE SURPLUS	0.16
* BUFFALOE TRACT - HIGH FAT MILK AVAILABLE	
TOTAL BUFFLOE MILK PRODUCTION	0.33
TOTAL COW MILK PRODUCTION	0.11
* OPTIMUM STRENGTH OF STAFF	

#### 6.2. WEAKNESS

DECREASE IN FUNCTIONAL DC'S  
DECREASE IN POURING MEMBER %  
PROCUREMENT AT SUB-OPTIMAL LEVEL  
HIGH PROCUREMENT TRANSPORTATION COST  
INCONSISTENCY IN PRICING POLICY  
LACK OF PROFESSIONALS IN FUNCTIONAL AREAS:  
MARKETING AND FINANCE  
LIMITED SCOPE FOR LOCAL MILK MARKET  
LOW MEMBER EQUITY

### 6.3.OPPORTUNITY

\* SCOPE FOR INCREASE MILK PROCUREMENT

ONLY 26% OF THE VILLAGES COVERED

UNION'S SHARE IS 14% OF THE MARKETING SURPLUS

SCOPE FOR BULK SUPPLY TO MAHARASHTRA

FEDERATION OWNED PRODUCT DAIRY IN THE MILK SHED AREA

### 6.4.THREAT

LIBERALISATION POLICY BY GOVERNMENT

FLOW OF MILK TO NEIGHBOURING STATE - PROCUREMENT BY TRADERS

COMPETITION FROM PRIVATE DAIRIES AND TRADERS IN SELLING MILK

7.0.RECOMMENDATIONS

7.1.Educating the farmers on animal management co-operative work, accountability, roles and responsibilities, finance management etc., which need competent staff to train the farmers with necessary aids/equipments and infrastructure.

7.2. Ensuring active participation by members and also ensuring the discipline among the members of co-operative societies.

7.3. Strengthening the base level co-operative societies financially by internal governance management and accountability the members need to be encouraged as savings and the same should be retained in co-operatives.

7.4. While the union could go-ahead with the organisation of new DCS as planned in the project it should also consolidate the performance of existing societies.

7.5. Serious thought should be given to discontinuance of uneconomic routes. In future the union should never organised non-viable milk routes.

7.6. The Union should try to achieve a minimum procurement of 100 LPD for each DCS to attain viability. The lean and flush ratio in procurement has to compressed by providing AI and selective induction of CB cows.

7.7. Under SC,ST and BLM Schemes are implemented by the union to help the members of the DCS for purchase of milch animals. The loan amount is being recovered from the benificerries by the DCS, without incorporating in the books of accounts,may lead for manipulation and missuse.

7.8. The Union should study in detail the competition it is facing from Local and Maharashtra traders for milk procurement and marketing. Based on this study, it should evolve and suitable strategies to counter.

7.9. The bulk buffalo milk supply to outside the state appears remunerative, should plan to collect buffalo milk separately by encouraging.

7.10. The change in procurement/purchase prices and other costs would need to be compensated either by corresponding increase in selling price or improving in operating efficiencies.

7.11. Manufacturing of value added milk (Homogenised) and milk products (Ghee Butter Phedha etc.) utilising the surplus milk available during the flush season. The quantity of the product should be as high as possible and cost effective. This needs adoption of process technology and infrastructure.

7.12. The union must prepare a comprehensive fodder development plan especially to educate the farmers on conservation and enrichment of fodder.

7.13. The Union should take the measure to attain viability and a minimum of 18% Return on Investment. At most care should be taken to achieve the targets well in time, as envisaged in the project.

7.14. The federation while formulating the state policies should differentiate developed and developing unions.



# ANNEXURE - 1

## BIJAPUR DISTRICT AT GLANCE

1. Name of the district	- BIJAPUR	
2. Geographical area	- 17,092 sq.kms.	
a. No. of talukas	- 11	
b. No. of villages	- 1,44	
3. Rainfall (mm) Normal:552.2, Actual: 1994:540.70 1995:586.80 1996:756.50		
4. Agriculture:		
a. Geographical	- 17,12,348 ha.	
b. Net Sown area	- 15,85,838 ha.	
c. Gross cropped area	- 14,56,771 ha.	
d. Fallow land	- 82,745 ha.	
e. Land not available for cultivation	- 7,547 ha.	
f. Cropping Intensity (%)	-	
5. Irrigation:		
a. Net irrigated area	- 2,94,864 ha. (1994-95)	
b. Sources of Irrigation	-	
i) Canals	- 71,340	
ii) Wells	- 1,16,367	
iii) other sources - tank - 7,405, Tube wells - 14,809, others:- 84,074		
Total 2,94,864 ha. 19.7% of net cropped area and 17.7% of total geographical area.		
6. Size of holdings (ha)	No.	Area
a. Less than 1	36007	21397
b. Between 1 and 2	116530	179337
c. Above 2	247669	1298195
7. Animal Husbandry		
a. Plough animals	19573.	
b. Dairy animals	Cattle : 528472, Buffalo:307200	
c. Sheep Goat	874800	
d. Poultry (no. of birds)	641300	
8. Population (000s) : Male 1491, Female 1457, Total: 2926		
9. Classification of workers		
a. Cultivators	400226	
b. Of (a) small and marginal farmers (less than 4 ha.)	179700	
c. Agricultural labourers	47904	
d. Artisans	82747	
e. Household cottage Industries: 55564		
f. Allied Agro activities	116	
g. Others	198079	
Total	1153426	

PAST PERFORMANCE OF BUDAPEL MILK UNION

ITEM	UNIT	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
DCS Registered	No.	106	140	152	210	231	231	264	272	277	296	293	289
DCS Functioning	No.	103	126	142	176	189	191	233	237	234	210	209	203
Defunct DCS	No.	--	06	24	06	09	11	12	18	18	74	78	78
Members enrolled	No.	10294	13982	16586	24540	27246	31709	34999	33340	40288	41424	43039	4344
Milk routes in operation	No.	07	13	13	15	16	16	18	19	20	18	20	18
Milk procured	Tonnes	2126	3566	3999	4847	6137	6980	6146	9156	9370	7084	6188	7023
Avg. Milk procured/day	KPD	5824	9771	10957	13208	16813	19122	16839	25086	25671	19409	16955	1924
Animals trtd.on weekly visits	No.	234	1965	2830	27436	29579	18816	21714	25358	25399	14067	5221	4845
DCS under AI	No.	12	37	36	70	85	84	86	74	93	80	76	74
AI Done	No.	479	1726	4201	7749	13731	12712	21294	18058	20284	21653	15484	1691
Cattle feed sales	Tonnes	235	267	471	514	1354	1203	1224	1801	1528	1100	1370	1100
AVERAGES:													
Members/DCS (as at March)	No.	100	111	117	139	154	157	143	150	160	146	150	155
Avg.procurement/day	Kgs.	5824	9771	10957	13280	16813	19123	16838	25085	25671	19408	16953	1924
Avg.proc./DCS/Day (as at March)	Kgs.	56	77	77	75	89	100	72	106	110	92	81	95
Avg.proc./route/day	" "	Kgs.	832	751	843	885	1051	1195	935	1320	1284	1078	848



## TALUKAWISE VILLAGES AND DCS (EXISTING AND PROPOSED)

Sl. No.	Name of Taluk	No. of villalges	No. of Existing DCS	% Village covered	Proposed DCS	% of total village covered
01.	Badami	148	50	34	30	54
02.	Bagalkot	89	19	21	16	40
03.	Hunagund	157	16	11	34	32
04.	Mudhol	77	54	70	---	70
05.	Muddebihal	149	--	--	30	20
06.	B.Bagewadi	119	20	17	30	42



ANNEXURE - 5

STATEMENT SHOWING CATTLE POPULATION (TALUKWISE) IN THE PROPOSED MILK SHED AREA (ADDITIONAL COVERAGE AREA ONLY)

S1. Taluk No.	Low Local	Cross bred	Buffaloe	Total
01. B.Bagewadi	25,061	114	13,250	38,425
02. Hunagund	21,132	120	10,379	31,631
03. Muddebihal	45,242	141	21,343	66,726
04. Badami	8,609	418	6,769	15,856
<b>TOTAL</b>	<b>100,104</b>	<b>793</b>	<b>51,721</b>	<b>152,618</b>

NOTE:-

a) Only 30% of the villages of Muddebihal, Hunagund and B.Bagewadi and 25% additional villages of Badami taluk could be attached to the new dairy.

b) Only 30% of the cattle population in Hunagund, Muddebihal B.Bagewadi talukas are considered.

c) 40% is considered as breedable population except in crossbreeds. (Source a hand book of 14th quinquennial livestock census 1990).

d) 66% of breedable population is considered as animals in milk.

e) As per survey about 44% of milk produced is retained for consumption and 56% is marketable surplus.

f) Considered the average milk production of local cow is 1.25 litre, Buffaloe 2.0 litres and Crossbreed 6 litres per day with lactation period of 200, 160 and 270 days respectively.

STATEMENT SHOWING COST ESTIMATE OF DAIRY AND CREATION OF  
INFRASTRUCTURE AT VILLAGE

## A. SUMMARY OF COST ESTIMATE

1. COST OF THE LAND	1.00
2. CIVIL WORKS	
(a) DAIRY BUILDING	3.50
(b) RESIDENTIAL BUILDINGS	1.00
3. PROCESSING AND PRODUCTION EQUIPMENTS	3.00
4. SERVICE EQUIPMENTS	4.00
5. MISC EQUIPMENT	1.00
6. ERECTION	1.00
7. T.S.F	0.50
TOTAL	15.00

## B. SUMMARY OF THE COST OF CREATION OF INFRASTRUCTURE AT VILLAGE

1. ORGANISATION OF OCS	1.70
2. INPUT ACTIVITIES	2.10
3. TRAINING	1.65
4. FODDER DEVELOPMENT	0.75
TOTAL	6.40

## C. TOTAL COST OF THE PROPOSED PROJECT (A+B)

A. SUMMARY OF COST ESTIMATE	15.00
B. SUMMARY OF THE COST OF CREATION OF INFRASTRUCTURE AT VILLAGE LEVEL	6.40
TOTAL	21.40

## ANNEXURE - 7

## PROJECT IMPLEMENTATION PLAN

ACTIVITY	DESCRIPTION	TIME (IN MONTHS)	IMMEDIATE PREDECESSOR
A	PROJECT PRESENTATION	0.5	
B	PROJECT APPRAISAL	0.5	A
C	SITE SELECTION	0.5	B
D	LAND ACQUISITION AND DEVELOPMENT	1.5	C
E	TENDER FINALISATION FOR CIVIL WORKS	2.0	D, H
F	COMPLETION OF CIVIL WORKS	6.0	E
G	TENDER FINALISATION FOR EQUIPMENT AND FLOWING OF ORDERS FOR MACHINERY	4.0	D
H	STATUTORY REQUIREMENTS LIKE, ELECTRICAL/BOTLER INSPECTORATE ETC.	3.0	D
I	RECRUITMENT OF STAFF	1.0	E
J	TRAINING OF TECHNICAL PERSONNEL	1.0	I
K	RECEPTION OF EQUIPMENT POSITIONING, ERECTION AND COMMISSIONING (ALONG WITH CIVIL WORK)	6.0	G, H
L	DETAILED FIELD SURVEY	2.0	B
M	IDENTIFICATION OF VILLAGES FOR POTENTIAL COLLECTION CENTRES	1.0	L
N	REGISTRATION OF DCS	1.0	L, M
O	TRAINING OF DCS STAFF AND FARMERS	1.0	N
P	ORGANISING OF PROCUREMENT ROUTES	0.5	L, M
Q	TENDER PROCESSING FOR HIRING OF TRUCKS FOR COLLECTION OF MILK	1.5	M, N



## BIJAPUR CO-OPERATIVE MILK PRODUCERS SOCIETIES UNION LIMITED, BIJAPUR

DCS ORGANISATION AND INPUT ACTIVITY INVESTMENT (1998 - 2008)  
RS. IN MILLIONS

YEARS	ORGANISATION OF DCS		INPUT ACTIVITIES		TRAINING (STAFF/MEM)		FODDER DEVELOPMENT	
	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN
1998-99	20	0.25	5	0.19	-	0.28	-	0.10
1999-00	25	0.30	6	0.24	-	0.28	-	0.10
2000-01	25	0.30	6	0.24	-	0.28	-	0.10
2001-02	25	0.30	6	0.24	-	0.28	-	0.10
2002-03	20	0.25	5	0.19	-	0.28	-	0.10
2003-04	5	0.10	3	0.20	-	0.05	-	0.05
2004-05	5	0.10	3	0.20	-	0.05	-	0.05
2005-06	5	0.10	3	0.20	-	0.05	-	0.05
2006-07	5	0.10	3	0.20	-	0.05	-	0.05
2007-08	5	0.10	3	0.20	-	0.05	-	0.05
TOTAL	140	1.90	43	2.10	-	1.65	-	0.75

Note : 1) During the first five years of programme, 80% of funds are provided by Govt as grant.  
And 20% by union.

2) After 5th year the union will arrange 100% funds from its own source.

ANNEXURE - 10

STATEMENT SHOWING INVESTMENT ANALYSIS FOR THE PROPOSED BAGALKOT DAIRY

PARTICULARS	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR	VI YEAR	VII YEAR	VIII YEAR	IX YEAR	X YEAR
INSTALLED CAPACITY(TLPD)	30	30	30	30	30	30	30	30	30	30
NO. OF DCS COVERED										
a) EXISTING	103	100	125	150	175	195	200	205	210	215
b) NEW	20	25	25	25	20	5	5	5	5	5
c) TOTAL	123	125	150	175	195	200	205	210	215	220
PRODUCTION										
a) FROM THE EXISTING DCS	3.76	3.87	4.68	5.62	6.56	7.22	7.41	7.59	7.78	7.96
b) FROM NEW DCS	0.37	0.46	0.46	0.46	0.37	0.09	0.09	0.09	0.09	0.09
c) TOTAL	4.12	4.33	5.13	6.07	6.92	7.31	7.50	7.68	7.87	8.06
CAPACITY UTILISATION(%)	37.67	39.50	46.89	55.45	63.21	66.73	68.49	70.18	71.87	73.57
KG FAT RECEIVED	0.23	0.24	0.30	0.35	0.40	0.42	0.43	0.45	0.46	0.47
KG SNF RECEIVED	0.36	0.38	0.45	0.53	0.61	0.64	0.66	0.68	0.69	0.71
A. MILK SALES										
1. FROM RETAIL SALES	2.47	2.60	3.59	4.25	4.84	5.11	5.25	5.38	5.51	5.64
TONED (3.1%FAT 8.5%SNF)	1.98	2.08	2.88	3.40	3.88	4.09	4.20	4.30	4.41	4.51
STANDARD (4.5%FAT 8.5%SNF)	0.49	0.52	0.72	0.85	0.97	1.02	1.05	1.08	1.10	1.13
2. FROM BULK SALES (6%FAT 9%SNF)	1.65	1.73	1.54	1.82	2.08	2.19	2.25	2.31	2.36	2.42
TOTAL	4.12	4.33	5.13	6.07	6.92	7.31	7.50	7.68	7.87	8.06
KG FAT DISPOSAL IN MILK	0.1826	0.1915	0.2139	0.2529	0.2883	0.3044	0.3124	0.3202	0.3279	0.3356
KG SNF DISPOSAL	0.3588	0.3763	0.4442	0.5252	0.5987	0.6321	0.6497	0.6647	0.6808	0.6968
BALANCE KG FAT	0.0483	0.0507	0.0839	0.0992	0.1131	0.1194	0.1225	0.1256	0.1286	0.1316
BALANCE KG SNF	0.0041	0.0043	0.0077	0.0091	0.0104	0.0110	0.0112	0.0115	0.0118	0.0121
HANDLING LOSS										
KG FAT	0.0010	0.0011	0.0013	0.0016	0.0018	0.0019	0.0020	0.0020	0.0021	0.0021
KG SNF	0.0009	0.0010	0.0011	0.0013	0.0015	0.0016	0.0016	0.0017	0.0017	0.0018
NET SURPLUS KG FAT	0.0473	0.0496	0.0826	0.0876	0.1113	0.1175	0.1206	0.1236	0.1265	0.1295
NET SURPLUS KG SNF	0.0032	0.0034	0.0066	0.0078	0.0089	0.0094	0.0096	0.0098	0.0101	0.0103
SALES REALISATION										
a) FROM TONED MILK	21.78	22.84	31.63	37.40	42.63	45.01	46.20	47.34	48.48	49.62
b) FROM STANDARD MILK	5.94	6.23	8.63	10.20	11.63	12.28	12.60	12.91	13.22	13.53
c) FROM BULK SALES	14.85	16.44	14.63	17.30	19.72	20.83	21.37	21.90	22.43	22.96
d) FROM GHEE SALES	3.31	3.47	5.78	6.83	7.79	8.22	8.44	8.65	8.86	9.07
e) FROM SKIM MILK	0.18	0.19	0.38	0.44	0.51	0.53	0.55	0.56	0.58	0.59
TOTAL REALISATION	46.06	49.17	61.05	72.18	82.28	86.87	89.16	91.36	93.57	95.77
COST OF PRODUCTION										
COST OF MILK	33.20	34.82	41.34	48.88	55.71	58.82	60.37	61.86	63.35	64.85
TRANSPORTATION COST	2.68	2.81	3.34	3.95	4.50	4.75	4.87	5.00	5.12	5.24
CHILLING COST	0.62	0.65	0.77	0.91	1.04	1.10	1.12	1.15	1.18	1.21
PASTURISATION	0.99	1.04	1.44	1.70	1.94	2.05	2.10	2.15	2.20	2.26
PACKING COST	0.99	1.04	1.44	1.70	1.94	2.05	2.10	2.15	2.20	2.26
SELLING AND DISTRIBUTION	1.61	1.69	2.34	2.76	3.15	3.32	3.41	3.50	3.58	3.67
TOTAL VARIABLE COST	40.09	42.04	50.65	59.90	68.28	72.08	73.98	75.81	77.64	79.47
CONTRIBUTION	5.97	7.13	10.39	12.29	14.01	14.79	15.18	15.55	15.93	16.30

<b>FIXED COSTS</b>										
SALARY & WAGES	3.60	3.96	4.36	4.79	5.27	5.80	6.38	7.02	7.72	8.49
ADMINISTRATIVE EXPENSES	0.60	0.61	0.62	0.64	0.65	0.66	0.68	0.69	0.70	0.72
PROFIT BEFORE DEP, INT, TAX	1.77	2.55	5.41	6.86	8.09	8.33	8.12	7.85	7.51	7.10
DEPRECIATION @ .081	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
INTEREST	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84

<b>NET PROFIT</b>	-0.00	0.00	3.64	5.09	6.31	6.56	6.35	6.08	5.74	5.32
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<b>% OF PROFIT TO TURNOVER</b>	-0.00	0.00	5.96	7.05	7.67	7.55	7.12	6.65	6.13	5.56
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<b>TOTAL FIXED COSTS</b>	5.97	6.34	6.75	7.20	7.69	8.23	8.82	9.48	10.19	10.98
CONTRIBUTION PER LITER	1.45	1.65	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02
BREAK-EVEN QUANTITY	4.13	3.85	3.34	3.56	3.80	4.07	4.36	4.68	5.04	5.42
OPERATING LEAVARAGE	1.00	1.12	1.54	1.71	1.82	1.80	1.72	1.64	1.56	1.49
BREAK EVEN CAP UTILISATION	37.68	35.17	30.47	32.49	34.71	37.15	39.82	42.76	45.99	49.54

**FINANCIAL APPRAISAL**

**(CASH FLOWS)**

YEARS	0	1	2	3	4	5	6	7	8	9
<b>OUT FLOW</b>	-15									
INFLOW (NET PROFIT)		-0.00	0.00	3.64	5.09	6.31	6.56	6.35	6.08	5.74
INFLOW (PTC SAVINGS)		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SALVAGE										2.5
<b>TOTAL</b>	-15.00	0.20	0.20	3.84	5.29	6.51	6.76	6.55	6.28	5.94

NET PRESENT VALUE @ 14% DISCOUNT

5.54

INTERNAL RATE OF RETURN

0.21

ANNEXURE - II

STATEMENT SHOWING SENSITIVITY ANALYSIS-DECREASE IN RETAIL MILK SALE BY

PARTICULARS	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR	VI YEAR	VII YEAR	VIII YEAR	IX YEAR	X YEAR
INSTALLED CAPACITY(TLPD)	30	30	30	30	30	30	30	30	30	30
NO.OF DCS COVERED										
a)EXISTING	103	100	125	150	175	195	200	205	210	215
b)NEW	20	25	25	25	20	5	5	5	5	5
c)TOTAL	123	125	150	175	195	200	205	210	215	220
PRODUCTION										
a)FROM THE EXISTING DCS	3.76	3.87	4.68	5.62	6.56	7.22	7.41	7.59	7.78	7.96
b)FROM NEW DCS	0.37	0.46	0.46	0.46	0.37	0.09	0.09	0.09	0.09	0.09
c)TOTAL	4.12	4.33	5.13	6.07	6.92	7.31	7.50	7.68	7.87	8.06
CAPACITY UTILISATION(%)	37.67	39.50	46.89	55.45	63.21	66.73	68.49	70.18	71.87	73.57
KG FAT RECEIVED	0.23	0.24	0.30	0.35	0.40	0.42	0.43	0.45	0.46	0.47
KG SNF RECEIVED	0.36	0.38	0.45	0.53	0.61	0.64	0.66	0.68	0.69	0.71
A. MILK SALES										
1.FROM RETAIL SALES	2.27	2.38	3.34	3.95	4.50	4.75	4.87	5.00	5.12	5.24
TONED (3.1%FAT 8.5%SNF)	1.81	1.90	2.67	3.16	3.60	3.80	3.90	4.00	4.09	4.19
STANDARD (4.5%FAT 8.5%SNF)	0.45	0.48	0.67	0.79	0.90	0.95	0.97	1.00	1.02	1.05
2.FROM BULK SALES (6%FAT 9%SNF)	1.86	1.95	1.80	2.13	2.42	2.56	2.62	2.69	2.75	2.82
TOTAL	4.12	4.33	5.13	6.07	6.92	7.31	7.50	7.68	7.87	8.06
KG FAT DISPOSAL IN MILK	0.1880	0.1972	0.2206	0.2609	0.2974	0.3140	0.3223	0.3302	0.3382	0.3461
KG SNF DISPOSAL	0.3599	0.3774	0.4454	0.5267	0.6004	0.6339	0.6506	0.6667	0.6827	0.6988
BALANCE KG FAT	0.0429	0.0450	0.0772	0.0913	0.1040	0.1098	0.1127	0.1155	0.1183	0.1211
BALANCE KG SNF	0.0031	0.0032	0.0064	0.0076	0.0087	0.0091	0.0094	0.0096	0.0098	0.0101
HANDLING LOSS										
KG FAT	0.0010	0.0011	0.0013	0.0016	0.0018	0.0019	0.0020	0.0020	0.0021	0.0021
KG SNF	0.0009	0.0010	0.0011	0.0013	0.0015	0.0016	0.0016	0.0017	0.0017	0.0018
NET SURPLUS KG FAT	0.0419	0.0439	0.0758	0.0897	0.1022	0.1079	0.1108	0.1135	0.1162	0.1190
NET SURPLUS KG SNF	0.0022	0.0023	0.0053	0.0063	0.0071	0.0075	0.0077	0.0079	0.0081	0.0083
SALES REALISATION										
a)FROM TONED MILK	19.96	20.93	29.37	34.73	39.59	41.80	42.90	43.96	45.02	46.08
b)FROM STANDARD MILK	5.44	5.71	8.01	9.47	10.80	11.40	11.70	11.99	12.28	12.57
c)FROM BULK SALES	16.70	18.49	17.07	20.19	23.01	24.30	24.94	25.55	26.17	26.78
d)FROM GHEE SALES	2.93	3.08	5.31	6.29	7.16	7.55	7.75	7.94	8.14	8.33
e)FROM SKIM MILK	0.13	0.13	0.30	0.36	0.41	0.43	0.44	0.45	0.46	0.47
TOTAL REALISATION	45.17	48.34	60.07	71.02	80.96	85.48	87.73	89.90	92.06	94.23
COST OF PRODUCTION										
COST OF MILK	33.20	34.82	41.34	48.88	55.71	58.82	60.37	61.86	63.35	64.85
TRANSPORTATION COST	2.68	2.81	3.34	3.95	4.50	4.75	4.87	5.00	5.12	5.24
CHILLING COST	0.62	0.65	0.77	0.91	1.04	1.10	1.12	1.15	1.18	1.21
PASTUERISATION	0.81	0.95	1.34	1.58	1.80	1.90	1.95	2.00	2.05	2.09
PACKING COST	0.81	0.95	1.34	1.58	1.80	1.90	1.95	2.00	2.05	2.09
SELLING AND DISTRIBUTION	1.47	1.55	2.17	2.57	2.92	3.09	3.17	3.25	3.33	3.40
TOTAL VARIABLE COST	39.79	41.73	50.28	59.46	67.77	71.55	73.44	75.25	77.07	78.88
CONTRIBUTION	5.38	6.61	9.78	11.57	13.19	13.92	14.29	14.64	14.99	15.35



FIXED COSTS										
SALARY & WAGES	3.60	3.86	4.36	4.79	5.27	5.80	6.38	7.02	7.72	8.49
ADMINISTRATIVE EXPENSES	0.60	0.61	0.62	0.64	0.65	0.66	0.68	0.69	0.70	0.72
PROFIT BEFORE DEP, INT, TAX	1.18	2.04	4.80	6.14	7.27	7.46	7.24	6.94	6.57	6.14
DEPRECIATION @ .081	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
INTEREST	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
NET PROFIT	-0.59	0.00	3.03	4.37	5.49	5.69	5.46	5.17	4.80	4.37
% OF PROFIT TO TURNOVER	-1.31	0.00	5.05	6.15	6.79	6.66	6.23	5.75	5.22	4.64
TOTAL FIXED COSTS	5.97	6.34	6.75	7.20	7.69	8.23	8.82	9.48	10.19	10.98
CONTRIBUTION PER LITER	1.30	1.53	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91
BREAKEVEN QUANTITY	4.58	4.15	3.54	3.78	4.04	4.32	4.63	4.97	5.35	5.76
OPERATING LEAVARAGE	0.90	1.04	1.45	1.61	1.71	1.69	1.62	1.55	1.47	1.40
BREAK EVEN CAP UTILISATION	41.82	37.89	32.36	34.51	36.87	39.46	42.30	45.42	48.85	52.62

SENSITIVITY ANALYSIS: DECREASE IN RETAIL MILK SALES BY 5%

FINANCIAL APPRAISAL											
(CASH FLOWS)											
YEARS	0	1	2	3	4	5	6	7	8	9	
OUT FLOW	-15										
INFLOW (NET PROFIT)		-0.59	0.00	3.03	4.37	5.49	5.69	5.46	5.17	4.80	4.37
INFLOW (PTC SAVINGS)		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SALVAGE											2.5
TOTAL	-15.00	-0.39	0.20	3.23	4.57	5.69	5.89	5.66	5.37	5.00	7.07

NET PRESENT VALUE @ 14% DISCOUNT RATE

2.57

INTERNAL RATE OF RETURN

0.17

**A N N E X U R E - 12**

**STATEMENT SHOWING SENSITIVITY ANALYSIS-DECREASE IN MILK PROCUREMENT**

PARTICULARS	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR	VI YEAR	VII YEAR	VIII YEAR	IX YEAR	X YEAR
INSTALLED CAPACITY(TLPD)	30	30	30	30	30	30	30	30	30	30
NO.OF DCS COVERED										
a)EXISTING	103	100	125	150	175	195	200	205	210	215
b)NEW	20	25	25	25	20	5	5	5	5	5
c)TOTAL	123	125	150	175	195	200	205	210	215	220
PRODUCTION										
a)FROM THE EXISTING DCS	3.57	3.47	4.33	5.20	6.07	6.76	6.94	7.11	7.28	7.46
b)FROM NEW DCS	0.35	0.43	0.43	0.43	0.35	0.09	0.09	0.09	0.09	0.09
c)TOTAL	3.92	3.90	4.77	5.63	6.41	6.85	7.02	7.20	7.37	7.54
CAPACITY UTILISATION(%)	35.78	35.63	43.54	51.46	58.58	62.54	64.13	65.71	67.29	68.88
KG FAT RECEIVED	0.22	0.22	0.28	0.33	0.37	0.40	0.41	0.42	0.43	0.44
KG SNF RECEIVED	0.34	0.34	0.42	0.50	0.56	0.60	0.62	0.63	0.65	0.66
A. MILK SALES										
1.FROM RETAIL SALES	2.35	2.34	3.34	3.94	4.49	4.79	4.92	5.04	5.16	5.28
TONED (3.1%FAT 8.5%SNF)	1.88	1.87	2.67	3.16	3.59	3.84	3.93	4.03	4.13	4.22
STANDARD (4.5%FAT 8.5%SNF)	0.47	0.47	0.67	0.79	0.90	0.96	0.98	1.01	1.03	1.06
2.FROM BULK SALES (6%FAT 9%SNF)	1.57	1.56	1.43	1.69	1.92	2.05	2.11	2.16	2.21	2.26
TOTAL	3.92	3.90	4.77	5.63	6.41	6.85	7.02	7.20	7.37	7.54
KG FAT DISPOSAL IN MILK	0.1735	0.1727	0.1986	0.2347	0.2672	0.2853	0.2925	0.2997	0.3070	0.3142
KG SNF DISPOSAL	0.3409	0.3394	0.4124	0.4874	0.5549	0.5924	0.6074	0.6224	0.6374	0.6524
BALANCE KG FAT	0.0459	0.0457	0.0779	0.0921	0.1048	0.1119	0.1147	0.1176	0.1204	0.1232
BALANCE KG SNF	0.0039	0.0039	0.0072	0.0085	0.0096	0.0103	0.0105	0.0108	0.0111	0.0113
HANDLING LOSS										
KG FAT	0.0010	0.0010	0.0012	0.0015	0.0017	0.0018	0.0018	0.0019	0.0019	0.0020
KG SNF	0.0009	0.0009	0.0010	0.0012	0.0014	0.0015	0.0015	0.0016	0.0016	0.0017
NET SURPLUS KG FAT	0.0449	0.0447	0.0767	0.0906	0.1031	0.1101	0.1129	0.1157	0.1185	0.1213
NET SURPLUS KG SNF	0.0031	0.0030	0.0061	0.0072	0.0082	0.0088	0.0090	0.0092	0.0094	0.0097
SALES REALISATION										
a)FROM TONED MILK	20.69	20.60	29.37	34.71	39.52	42.19	43.25	44.32	45.39	46.46
b)FROM STANDARD MILK	5.64	5.62	8.01	9.47	10.78	11.51	11.80	12.09	12.38	12.67
c)FROM BULK SALES	14.11	14.82	13.59	16.06	18.28	19.52	20.01	20.51	21.00	21.49
d)FROM GHEE SALES	3.15	3.13	5.37	6.34	7.22	7.71	7.90	8.10	8.29	8.49
e)FROM SKIM MILK	0.17	0.17	0.35	0.41	0.47	0.50	0.51	0.53	0.54	0.55
TOTAL REALISATION	43.76	44.34	56.68	66.99	76.26	81.42	83.48	85.54	87.60	89.66
COST OF PRODUCTION										
COST OF MILK	31.54	31.40	38.38	45.36	51.64	55.13	56.52	57.92	59.32	60.71
TRANSPORTATION COST	2.55	2.54	3.10	3.66	4.17	4.45	4.56	4.68	4.79	4.90
CHILLING COST	0.59	0.59	0.72	0.85	0.96	1.03	1.05	1.08	1.11	1.13
PASTURISATION	0.94	0.94	1.33	1.58	1.80	1.92	1.97	2.01	2.06	2.11
PACKING COST	0.94	0.94	1.33	1.58	1.80	1.92	1.97	2.01	2.06	2.11
SELLING AND DISTRIBUTION	1.53	1.52	2.17	2.56	2.92	3.12	3.19	3.27	3.35	3.43
TOTAL VARIABLE COST	38.09	37.92	47.03	55.59	63.28	67.56	69.27	70.98	72.69	74.40
CONTRIBUTION	5.67	6.43	9.65	11.40	12.98	13.86	14.21	14.56	14.91	15.26

FIXED COSTS										
SALARY & WAGES	3.60	3.96	4.36	4.79	5.27	5.80	6.38	7.02	7.72	8.49
ADMINISTRATIVE EXPENSES	0.60	0.61	0.62	0.64	0.65	0.66	0.68	0.69	0.70	0.72
PROFIT BEFORE DEP, INT, TAX	1.47	1.85	4.67	5.97	7.06	7.40	7.16	6.86	6.49	6.06
DEPRECIATION @ .081	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
INTEREST	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84

NET PROFIT	-0.30	0.00	2.90	4.20	5.29	5.63	5.39	5.08	4.72	4.29
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% OF PROFIT TO TURNOVER	-0.69	0.00	5.11	6.27	6.94	6.91	6.45	5.94	5.39	4.78
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TOTAL FIXED COSTS	5.97	6.34	6.75	7.20	7.69	8.23	8.82	9.48	10.19	10.98
CONTRIBUTION PER LITER	1.45	1.65	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02
BREAK-EVEN QUANTITY	4.13	3.85	3.34	3.56	3.80	4.07	4.36	4.68	5.04	5.42
OPERATING LEAVARAGE	0.95	1.01	1.43	1.58	1.69	1.68	1.61	1.54	1.46	1.39
BREAK EVEN CAP UTILISATION	37.68	35.17	30.47	32.49	34.71	37.15	39.82	42.76	45.99	49.54

SENSITIVITY ANALYSIS: DECREASE IN MILK PROCUREMENT BY 5%

FINANCIAL APPRAISAL											
(CASH FLOWS)											
YEARS	0	1	2	3	4	5	6	7	8	9	10
OUT FLOW	-15										
INFLOW (NET PROFIT)		-0.30	0.00	2.90	4.20	5.29	5.63	5.39	5.08	4.72	4.29
INFLOW (PTC SAVINGS)		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SALVAGE											2.5
TOTAL	-15.00	-0.10	0.20	3.10	4.40	5.49	5.83	5.59	5.28	4.92	6.99

NET PRESENT VALUE @ 14% DISCOUNT RATE 2.41  
INTERNAL RATE OF RETURN 0.17

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

⑥

**PROJECT PROPOSAL**

Title of the  
Project Proposal : **DEVELOPMENT DAIRY BUSINESS  
PROJECT FOR FARMER MEMBERS  
IN KUD BAYONGBONG GARUT  
WEST JAVA**

Country : **REPUBLIC OF INDONESIA**

Project Proposal  
Prepared by : **ABDURAHMAN SOPA**

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
India, Philippines and Japan



**INTERNATIONAL COOPERATIVE ALLIANCE**

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**PREFACE**

**SUMMARY**

<b>CHAPTER</b>	<b>I. INTRODUCTION</b>
	<b>II. BACK GROUND</b>
	<b>III. THE PROJECT</b>
	<b>IV. DETAILS OPERATION</b>
	<b>V. BUDGET</b>

## PREFACE

I send all praise and thanks be to Allah Swt, for finishing this project proposal.

First of all, I would like to thanks to ICA ROAP< IDACA and Japanese Government that has given me an opportunity to join the program of **STRENGTENING MANAGEMENT AGRICURTURAL COOPERATIVE IN ASIA REGION.**

And I'd also like to give all my gratitude to :

1. Mr. Roby Tulus as the head of the regional ICA ROAP in Asia Fasipic
2. Mr. Daman Prakas as the head of The Project Director who gave me all his Assistance and guidance during the study with all patient.
3. Mr. Ganeshan and all staffs ICA ROAP.
4. ProFfesor Krisna Murthi and all intructurs at IRMA (Institute Rural Management Anand) who already gave so much assistances during the study and the success of this programe.

This Programe has gave a great contribution for the study of Economy and it's very important to developed the true cooperation manament system, and something that so much impressed me during the programe was that, I could shared all experiences with another participants from nine different

countries, and furthermore I be able to know the cooperation Development in India and compare it with my cooperation where I work.

And a lot of thanks goes to all staffs and General Manager of KUD Bayongbong who not only gave me this great chance but also has gave so much materials and morals support that at the end this Project can carried out.

Bayongbong February 1998

ABDURAHMAN SOPA

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## SUMMARY.

1. The Project is Expansion Dairy Business for farmer members/breeder in KUD Bayongbong.
2. The Project will be implemented by KUD Bayongbong as join with PT Nestle and Danamon Bank.
3. The Object Of Project are Increasing the income farmer members by addition Head cow.
4. The Target of this project are farmer member/breeder or milk production Unit Business at KUD Bayongbong.
5. 40 people/farmer members at KUD Bayongbong have job for develop their dairy business.
6. Total Investment the Project is Rp. 465.000.000.00
7. The source of Fund are long term loan from Danamon Bank (Rp 400.000.000,00) and Own Capital ( Rp 65.000.000,00).
8. The collaboration with the milk companies will be Important market for selling milk production.
9. The result of Financial Analisis of the project are as follow :  
Pay back periode 7 (seven) year.  
Weighted Average cost of Capital 10% .



NPV Of Project are Rp. 492.898.324.

Internal rate of return/IRR are 10,15%.

10. The procurement of long term loan from Danamon Bank will be  
Important key to succes of the project

## CHAPTER I. INTRODUCTION.

This project Proposal is made to fulfill the requirements for the credit proposal to Bank Danamon, In order to enlarge Dairy cows Business, KUD Bayongbong is by increasing the population of the herd as the quantity demand from the dairy companeas, they need minimum 5000 kg milk /day.

This Project Proposal is very useful for the breeder business development, because by increasingf the scale point of the “Dairy Cow Ownership” the breeder would set their position stronger in their business.

The number of the Dairy cow ownership that would be proper to the each breeder is five herd of cows or more, know as 1 (one) package.

KUD Bayongbong is as ‘the Responsible Facility’ for the cows Credit acceptance for the breeder, so KUD Bayongbong would not gain any profits from the credit interest, but instead from it came from the milk and herd fooder buying and selling business.

This Project proposal is propose to Bank Indonesia through Bank Danamon with low Interest, it is longterm credit with 14% interest/year decreasing without grace periode.

It was programed for the first submission to provide 40 package/200 herd of cows divided equally for 17 Dairy cow group farmer members of KUD Bayongbong ; as seen on the table list below :

LIST OF GROUPS WHO HAVE ADDITION HEAD COWS				
NO	GROUP CHAIRMAN	MALE/FEMALE	ADDRESS	PACKAGE
1	R. OHIM	MALE	CIBITUNG	3
2	AANG YUDIN	MALE	OLAN	2
3	AMBY	MALE	CIROYOM	2
4	LILIS	FEMALE	BARUSUDA	3
5	UDIN	MALE	ARENG	2
6	YUYUN LS	MALE	BARUKAI	2
7	CECEP TATANG	MALE	SUKAHURIP	3
8	ROHMAN	MALE	CIHURU	2
9	UNDANG	MALE	CIPONDOK 1	3
10	H. IMIN	MALE	NEGLA	2
11	OKET	MALE	CIPONDOK 2	2
12	MAMAN	MALE	CIPONDOK 3	2
13	H. MANSYUR	MALE	PABRIK	2
14	DIDI SUTARDI	MALE	PAMALAYAN	3
15	IYON	MALE	SINDANGSARI	3
16	IRON	MALE	BEBEDAHAN	2
17	TATANG	MALE	BAYONGBONG	2
		TOTAL		40

In this first project will be first explained about the properness Analisis for 1 (one) package and it is continue with the treasury Project for 40 Package. It is mean to make the calculation much easier.

## CHAPTER II. BACK GROUND.

### A. NATURAL RESOURCES

Bayongbong is a Subdistrict, where the head Office of KUD Bayongbong located and it is distance is about 13 km from Garut regency or 65 km from Capital city of West Java (Bandung).

Bayongbong is part of Garut Regency it is about 900-1400 above the sea level and the climate is very suitable for the dairy business development. As the Bayongbong has two seasons dry season and rainy. The water always run to all rural and remote places not mention that Bayongbong has Cimanuk river, which made Bayongbong as a place that never run out of water supply.

### B. THE ECONOMIC AND THE PEOPLE.

About 85% people of Bayongbong are farmers or breeder and they are also work on Horticulture, Rice and Dairy Cow. In the rural area people only have a small piece of land to improve their daily business most of them are poverty. their average daily income is Rp. 5000.00/day.

### C. AGRICULTURE AND SUSTAINABLE OF NATURE RESOURCES

Most of the agriculture business in Bayongbong are be able to run and

grow well; such as : Rice (Irrigated Rice Field), Horticulture business Like : Cabbage, beans, maize, potatoes, pumpkins, oranges etc.

Most of the farmers have the experience working in agribusiness especially in Dairy business. This is reason why I make a proposal for this Project in order to improve their Dairy Business.

#### D. KOPERASI UNIT DESA (VILAGE UNIT COOPERATIVE) BAYONGBONG.

KUD Bayongbong was esthablished at 1973 was placed at Bayongbong, Garut, west java provincy, Indonesia .

KUD Bayongbong is vilage unit cooperative ,this is cooperative of primary/ sosiety level in the rural are multipurpose and have 9500 people of members with 10 busines units, they are :

1. milk unit production.
2. Saving and loans.
3. Small shop
4. Ho lticultural
5. fed mill unit
6. Collecting electricity bill

7. Telephone for call
8. Fertilizer.
9. Rice.
10. Credit for farmer.

from the all, milk production is the main business unit for KUD Bayongbong, about 30000lt/day was collected from dairy farmers member, who spread from many village, than KUD sold to milk factory in Jakarta . (Jakarta is the Capital Country of Indonesia, about 400 Km from KUD Bayongbong).

### ***MILK PRODUCTION UNITS.***

KUD Bayongbong started to improved Dairy Cattle Business since 1980. with 950 head of cows that import from Australia with Government facilities. Than on 1986 and 1989 import again 325 and 450 head of cow from New Zealand untill now KUD Bayongbong have 5070 population of cow.

Dairy cow was growing wery well in KUD Bayongbong area because there are many factor support for that and than support for dairy business cooperative, :

- a. Farmer knowledge about dairy cattle was improve with their experience and extension service from KUD & Government.
- b. Good land condition.
- c. Good market condition/ good demand.

all thought the dairy cattle in KUD Bayongbong was improve but the population of dairy cow per farmers is very small, the average is about 2-4 head of cow per farmer member. So the KUD have programe to add the population per farmer in order to make increase their income.

## ***POLICY OF GOVERNMENT***

The Government have policy for support the coops in order to improve cooperative busines. The gorment provide facilities the coop with joint venture between the coops and BUMN (Business Intitution belonging Goverment) the BUMN give credit to KUD with low interest of loan. and KUD Bayongbong have chance this credit facilities with DANAMON BANK INDONESIA .

## CHAPTER III THE PROJECT

### THE PURPOSE OF PROJECT.

The main purpose of the dairy business development are :

- a. To use unproductive land.
- b. To support government programme to make people eat more protein source animal consumption.
- c. To minimize dairy cow import from other country.
- d. Provide job and less the urbanisation.
- e. Increase income farmer members.

### FEASIBILITY ANALYSIS.

#### Environment Aspect

- 900 -1400 m up of the sea
- Temperature about 16 - 25 C
- Enough land for grass.

with Dairy cow business so farmer members will use the unproductive land.



## Economic and sosial Aspect

The characteristic of the farmer members in KUD Bayongbong are the sell the after weaning calps (about 4 months old), this habit meke decrease of income farmer members. If the the farmers sold this calf until 1,5 years old so the farmers will have more income.

The farmers sold young calf because they did not have more capital ,they are poor people and they need money soon for daily cost lifes.

## Technical Aspect

Dairy cow business begin on 1980 since KUD Bayongbong import dairy cows from Australia and the goverment support them.

Departement of live stock and Department of cooperative , They are put together always give advace and extention about cooperation organisation and about dairy cow business.

KUD Bayongbong make course program to inhance knowledge farmer members .

## CHAPTER IV. DETAILS OPERATION.

### FINANCE ANALYSIS.

#### 1. Dairy cow purchasing

Development of dairy business will use the local dairy cow, that their mothers are dairy import from Australia or new zealand, that was provided in Garut or west java province. than local area dairy cow price is cheep than dairy cow import with the quality is almostsame with dairy cow over the seas.

Three month dairy pregnant with price Rp. 2000.000.00/head cow must provide for this programe.

#### 2. Housing/Stable

Cow stable must be prepare before dairy cow credit was come.

Cost of the cow stable are :

Land            1,5 m x 2,5 m            = 25.000.00

Woods            1 m cubic            = 125.000.00

## Market Aspect

KUD Bayongbong have cooperation with milk factory Industry, like PT Indomilk, PT Bendera/FVI for along time, and now KUD Bayongbong will make contract with PT Nestle to sell milk liquid from KUD to PT Nestle. This good Opportunity for dairy milk business, so there is no problem for the farmer members to sell their milk, because market situation is very good.

Rock sand	1/2 Truck	= 30.000.00
Brick rock	400	= 20.000.00
Cement	5 balls	= 50.000.00
Roof zinc	4 pieces	= 40.000.00
Labour	2 day s	= 30.000.00
Total stable cost		= 320.000.00/cow

After seven years the cow stable and land will have value/salvage Rp.96.000.00/stable. Depreciation 10 %/year.

### 3. Milk sell

Farmer members will sell their milk to KUD Bayongbong in collecting center that was propived in everi farmers group. then KUD Bayongbong take the milk with truck to cooling center in KUD and then KUD sold the milk to milk factory in Jakarta.

The milk price of this year is Rp. 600/lt, with assumption that price will increase Rp.25/lt from the last year price.

On the first year the farmer must be wait for six month untill dairy cow parturition.

Dairy cow will produce the milk for 305 days with 2 months dry cow periode per year.

Average production is 12 lt/day/cow then will increase about 1-2 lt/day for the next year, until 4 year, then milk product will decrease , this assumption can look on table.

#### 4. Calf production

Every year dairy cow will hava 1 (one) calf then farmer members can sell with Averege price is Rp. 400.000.00/calf with assumption that price will increase Tp. 50.00.00/calf/year

#### 5. Concentrate/feeder

KUD Bayongbong provide this concentrate for cow and send it to every groups farmers members.and then farmer members repayment accounted by their milk.

Dairy cow needs about 6 kg/day/cow or 0,5 from the milk produce/day. For this year the price of concentrate is Rp.300/kg, with assuption the price will increase Rp.10/kg every year.

#### 6. Grass.

Every farmer in fact, they can provide the grass by them self, they looking for grass to the land grass or the sidex forest, this sistem we call cut and carry.

For make easy on the cost analyze we have assumption that the price of grass is Rp.20/kg and every day dairy cow need about 50-75 kg grass.

#### 7. Medicene .

For Their health, dairy cow need about Rp. 4.000/head/month for buy the medicine, althought KUD provide veterinary service.

#### 8. Repairing Stable .

Cost for repair their stable, farmer members have experience and then their can repair them self, cost for repair need about Rp.3000/stable/month. with assumption,this cost will increase Rp.100/year/stable.

## 9. Labour cost

Base on Government Department of live stock survey and experience in dairy business, that one farmer can take care minimum 5 (five) head of cow than it's call one packet.

Labour payment is counted on minimum regional payment with assumption increase 10% every year.

This year in Garut minimum regional payment is Rp. 5000/day/people

))))))-----))))))

Assumption :

Average production (liter)	12	14	15	16	15	14	13
Milk price/lt (Rp)	600	625	650	675	700	725	750
Feeder/day (kg)	6	7	7.5	8	7.5	7	6.5
Price/kg	300	310	320	330	340	350	360
Grass (kg)	75	75	75	75	75	75	75
Price/kg	20	25	30	35	40	45	50
Labour cost/day	5000	5500	6050	6655	7320.5	8052.55	8857.805
Repairing cost for stable	3000	3100	3200	3300	3400	3500	3600

Long term loan repayment & interest schedule on interest 14% sliding

Year	0	I	II	III	IV	V	VI	VII
Loan rate in the beginning		10000000	8571429	7142858	5714287	4285716	2857145	1428574
Interest payable		1308333	1109722	925000	725000	525000	325000	125000
Repayment of principle		1428571	1428571	1428571	1428571	1428571	1428571	1428571



DAIRY BUSINESS ANALYZE FOR 5 HEAD COW (ONE PACKET)

REQUIREMENT	year 0	year 1	year 2	year 3	year 4	year 5	year 6	year 7
Milk selling		6390360	12943437.5	14422688	15975900	15532125	15014387.5	14422688
Calf selling		2000000	2250000	2500000	2750000	3000000	3250000	3500000
Salvage head cow and stable								3480000
<b>Total selling</b>		<b>8390360</b>	<b>15193437.5</b>	<b>39422688</b>	<b>18725900</b>	<b>18532125</b>	<b>18264387.5</b>	<b>21402688</b>
<b>Cost :</b>								
Concentrate/feeder		1647000	3309250	3660000	4026000	3888750	3736250	3568500
Grass		2700000	3375000	4050000	4725000	5400000	6075000	6750000
Medicine		250000	275000	300000	325000	350000	375000	400000
Labour cost		1825000	2007500	2208250	2429075	2671982.5	2939180.75	3233098.8
Repairing stable		180000	186000	192000	198000	204000	210000	216000
Insurans		175000	175000	175000	175000	175000	175000	175000
<b>Total cost</b>		<b>6777000</b>	<b>9327750</b>	<b>10585250</b>	<b>11878075</b>	<b>12689733</b>	<b>13510430.8</b>	<b>14342599</b>
<b>Profit</b>		<b>1613360</b>	<b>5865687.5</b>	<b>28837438</b>	<b>6847825</b>	<b>5842392.5</b>	<b>4753956.75</b>	<b>7060088.7</b>

DAIRY BUSINESS ANALYZE FOR 40 PACKET (200 HEAD COW)

	year 0	year 1	year 2	year 3	year 4	year 5	year 6	year 7
Purchasing head cow	40000000							
Repairing Cow Stable	65000000							
working cap margin								
interest during purchase (1 mont)	4700000							
	469700000							
Sales :								
Sales Milk		255614400	517737500	576907500	639036000	621285000	600575500	576907500
Sales cow		80000000	90000000	100000000	110000000	120000000	130000000	140000000
Salvage of cow & stable								139500000
Total Sales		335614400	607737500	676907500	749036000	741285000	730575500	856407500
Cost production :								
Konsentrat/feed		65880000	132370000	146400000	161040000	155550000	149450000	142740000
Grass		108000000	135000000	162000000	189000000	216000000	243000000	270000000
Medicine		10000000	11000000	12000000	13000000	14000000	15000000	16000000
Cost of labour		73000000	80300000	88330000	97163000	106879300	117567230	129323953
Stable service		7200000	7440000	7680000	7920000	8160000	8400000	8640000
Insurans		7000000	7000000	7000000	7000000	7000000	7000000	7000000
Total cost		271080000	373110000	423410000	475123000	507589300	540417230	573703953
Profit before depreciation		64534400	234627500	253497500	273913000	233695700	190158270	282703547
Depreciation		46500000	46500000	46500000	46500000	46500000	46500000	46500000
Profit after depreciation		18034400	188127500	206997500	227413000	187195700	143658270	236203547
Interest on long term loan		52333333	44333333	36333333	28333333	20333333	5611111	55555
Profit before tax		-34298933	143794167	170664167	199079667	166862367	138047159	236147992
Income Tax 15%		0	21559125	25599625	29861950.1	25029355.1	20707073.85	35422198.8
Profit after tax		-34298933	122225042	145064542	169217717	141833012	117340085.2	200725793
	469700000	71734400	220498375	235577875	251971050	216826345	177851196.2	255921348

Interest factor pv 14%	0.909	0.826	0.751	0.683	0.621	0.564	0.513		
	469700000	65206569.6	182131658	176918984	172096227	134649160	100308074.6	131287652	962598325
NPV	492898325	= 962598325 - 469700000							

Assumption								
Average production/day	12	14	15	16	15	14	13	
Milk price/ltr	600	625	650	675	700	725	750	
Feeder/cow (kg)	6	7	7.5	8	7.5	7	6.5	
Feeder price/kg (Rp)	300	310	320	330	340	350	360	
Grass (kg)	75	75	75	75	75	75	75	
Grass price/Kg (Rp)	20	25	30	35	40	45	50	
Labour cost/day	5000	5500	6050	6655	7320.5	8052.55	8857.805	
Stable repair cost	3000	3100	3200	3300	3400	3500	3600	

Long term loan repayment & interest schedule on interest 14% sliding								
Year	0	I	II	III	IV	V	VI	VII
Loan rate in the beginning	400000000	380598933	285714286	228571429	171428572	114285715	57142858	
Interest payable	52333333	44333333	36333333	28333333	20333333	5611111	55555	
Repayment of principle	19401067	94884647	57142857	57142857	57142857	57142857	57142857	
						diferent	1	

Working Capital reqt								
feed	65880000	132370000	146400000	161040000	155550000	149450000	142740000	
Grass	108000000	135000000	162000000	189000000	216000000	243000000	270000000	
total raw material	173880000	267370000	308400000	350040000	371550000	392450000	412740000	
total Current Asset	173880000	267370000	308400000	350040000	371550000	392450000	412740000	
20% total current asset	34776000	53474000	61680000	70008000	74310000	78490000	82548000	

Working cap margin		82548000	82548000	82548000	82548000	82548000	82548000	82548000
working cap loan reqt		91332000	184822000	225852000	267492000	289002000	309902000	330192000
interest rate on working capital loan		0%	0%	0%	0%	0%	0%	0%
interest on working capital loan		0	0	0	0	0	0	0
Cost of capital								
Equity		65000000	65000000	65000000	65000000	65000000	65000000	65000000
net cash flow	469700000	71734400	220498375	235577875	251971050	216826345	177851196	255921348
less interest repayment principal		52333333	44333333	36333333	28333333	20333333	5611111	55555
Net cash surplus		0	81280395	142101685	166494860	139350155	115097228	198722936
Debt		400000000	342857143	285714286	228571429	171428572	114285715	57142858
interest on debt 14%								
weight cost of capital		0.120430108	0.1176883	0.114053	0.10900243	0.10151057	0.089243028	0.06549708
		0.102489206						
Share capital 0%	65000000							
Debt	400000000							
Interest	14%							
weight cost of Capital	0.8516074							

Year	Cash flow	Present Value Int factor @10%	Present Value @10%	Present Value Int Factor @ 11%	Present Value @11%	IRR
0	-469700000		-469700000		-469700000	
1	71734400	0.909	65206569.6	0.901	64632694.4	
2	220498375	0.826	182131657.8	0.812	179044680.5	
3	235577875	0.751	176918984.1	0.731	172207426.6	
4	251971050	0.683	172096227.2	0.659	166048922	
5	216826345	0.621	134649160.2	0.593	128578022.6	
6	177851196	0.564	100308074.5	0.535	95150389.86	
7	255921348	0.513	131287651.5	0.482	123354089.7	
			962598324.9		929016225.7	
NPV	962598325-469700000 =		492898324.9			0.146774125
IRR	962598325-469700000		x 1% + 10 = 10,15			
	962598325-929016225					

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
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AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

② M  
26.2.98

**PROJECT PROPOSAL**

Title of the  
Project Proposal : DAIRY CATTLE FEED MILL  
IN GENERAL DAIRY FARMING  
KPSBU LEBANG

Country : INDONESIA

Project Proposal  
Prepared by : TARYAL ALI NURSIDIK

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
India, Philippines and Japan



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- Since of funding is totally External
- Monitoring & Evaluation
- Milk availability Consumption, like
- More information on KPSTBU & its new localisation

# CHAPTER I

## SUMMARY

North Bandung Dairy Co-operative (KPSBU : Koperasi Peternak Sapi Bandung Utara) is a single purpose dairy co-operative.

KPSBU is situated in Lembang Subdistrict. Lembang is a subdistrict regency about 15 km North of Bandung in West-Java Indonesia. Lembang the Hill area and the altitude is about 1200 meter above sea level near mount Tangkuban Parahu. The area temperature range about 17- 18 °Celcius. The relative humidity range is 60%-70% and the rainfall range is about 1800 mm - 2500 mm per year. The Climate in Lembang is suitable for dairy farming, crops, plantation, and horticulture.

The main activities of KPSBU are :

1. Collecting and selling dairy cattle Milk which are produced by the members.
2. Loan and saving
3. Animal health services
4. Artificial insemination services

In 1996 the dairy cattle population was about 10605 heads and the Milk production was about 27,375,000 litre/year.



In 1997 KPSBU was established as a central of Dairy Farming area with the purpose of :

1. Providing dairy farming area.
2. Improving dairy farming system
3. Increasing Dairy Cattle Population.
4. Increasing Quality and Quantity Cattle Milk.

In order to achieve the 4<sup>th</sup> object, I am planning to develop a project on dairy feeding mill. This small yet important project will become part and parcel of the my organization on going main project .

The need of this project is that a present sufficient and quality feeding is not available for dairy cattle. That is way, the production of milk and health of cattles is not good. This emphasises the important of concepts. My target is to form dairy feed mill Which will product quality feed. This will be provided at minimal posible cost to the member farmers. The feed mill ensure balanced diet to the cattle besides increasing production of milk. The main componen of milk production is feeding Therefore, providing a lowest price with good quality of feedstuff by better distribution system would be a great and positip effort and will solve many problems that existing now. The programme of feed mill improvement and distribution of KPSBU Central Farming Area has many advantages, i.e :

- a) Gives the farmers an optimal and constant feed quality of the lowest cost per feed unit with maximum yield.
- b) Creating an increasing demand for concentrate, efficient of raw material procurement and operation, increasing the present capacity of production. Increasing the present capacity of feed mill and there after would gradually utilized the excess.
- c) Has establish an efficient feed distribution system to farmers.

The main target of those above advantages is to increase the income of the farmer by reducing or stabilizing cost of milk production and increasing the quality and the yield of milk.

In 1997 the members of KPSBU Lembang is 3860 farmers member consist of 576 female 3284 male. Population of dairy cattle is 10,605 consist of 4,864 lactation, 889 drycows, 2667 heifers, 2191 calfs. Each dairy generally needs concentrate and grass 3% and 10% of its weight. The use of consenstrate depends up on the farmers condition. The generally use 1 kg consenstrate for calf, 1,5 for heifers, 8 kg for lactation, 1,5 kg for dry lactation.

In 1997 the milk price from the private milk factory to the co-operative that is RP. 720/kg (average). The sale price depends on the contents of Fat and SNF. One gram of fat price Rp. 5.17 and one gram of SNF price Rp 3.1.

## CHAPTER II

### INTRODUCTION

#### 1. BACKGROUND

The Republic Indonesia 1945's Constitution article 33 (1) said : The economy shall be organized as a joint endeavor based upon the principle of brotherhood.

The article above stated the basic of economic democracy production is carried out by all for all under the leadership or control of the member of society, not prosperity of the individuals. The form enterprise is conformity with that the Co-operative.

North Bandung Dairy Co-operative (Koperasi Peternak Sapi Bandung Utara : KPSBU) is a single purpose dairy Co-operative. KPSBU is situated in Lembang subdistrict regency about 15 km north of Bandung in West-Java Indonesia. Lembang is the hill area and the altitude about 1200 m above sea level near mount Tangkuban Parahu. The area temperature above 17 - 18 °C. The relative humidity range is 60%-70% and the rainfall range is 1800-2500 mm/year. The climate in Lembang is suitable for dairy farming, corps, plantation and horticultura.

Dairy farming in North Bandung was introduced at the end of 19<sup>th</sup> century by dutch societies. After Indonesia declared its independence, dairy farming activities were continued by local farmers. There were

no improvement at that time because due to the minimum knowledges, capabilities and no dairy organization were established. The milk production of individual farmer were sold to the milk collectors and the price was determined by the collectors.

KPSBU was registered as a co-operative organization with the legal Government registered number : 4891/BH/DK-10/20 date on August, 8<sup>th</sup> 1971. The main object of KPSBU in general is making improvements of members welfare and their societies through dairy business development activities that carry out.

The main activities of KPSBU are:

1. Collecting and selling dairy cattle milk which are produced by the members.
2. Providing dairy cattle feed to the farmers.
3. Loan and saving.
4. Providing dairy cattle loan for the members.
5. Animal health services.
6. Artificial insemination services.
7. Providing medical health for the members and their families.
8. Extension.

## *2. Area of Project*

Location of Central Farming Area in Cikalong Wetan Subdistrict, Bandung West-Java Indonesia. This Project consist are Wangun Jaya village, Ganjar Sari Village, Cipta Gumati Village and Mandala Mukti Village. This are covers : 400 Ha.

KPSBU Central Farming Area in Cikalong Wetan is 40 km from KPSBU Head Office in Lembang and 22 km to Jakarta. Cikalong Wetan subdistrict is the hill area and the altitude about 750 meter above sea level. The area temperature range ,about 20-30 °C. The relative humidity range is 60%-70% and the rainfall range is about 1800mm-2500mm/year. The climate in Cikalong Wetan is suitable for farming, crops, plantation and horticulture.

## *3. The Population Growth of Cows and Farmer*

From year to year the population of dairy cows bussines grows. This bussines is very benefical for the farmers and it is not seasonable, also is an essential source for them to support their family. As a result the numbers of the farmers increase average everyday 1 member but the cows relative constant per years.

TABLE 1. The Population of Members (Farmers) of KPSBU

Year	1991	1992	1993	1994	1995	1996
Population	2.156	2.148	2.448	2.840	3.216	3.860

#### 4. Dairy Cows Feeding

Feed cost represent very important aspect of the total cost milk production. Gross efficiency of milk production is greater for high producing cows because a lower proportion of total feed intake is use for maintenance of the cows.

The farmers has to provide average 7 kg concentrate for lactation milk cows per day, if a lactation is given 1 kg of concentrate it may produce 2 liter milk perday, it should be given 7 kg of concentrate. A heifer or a dry lactation is suppose 2 kg concentrate perday, to make it well prepared for breeding. A bull needs only 1 kg concentrate perday.

Table 2. Population of Dairy Catle KPSBU Lembang

Tahun	1991	1992	1993	1994	1995	1996
Population	7.983	7.728	9.142	8.124	9.225	10.605

Table 3. Dairy Cattle Import Credit

Bank	Year	Heads	Rupiah	Explanation
BRI	1979-1983	2.709	991.117.900	Paid
BUKOPIN	1987-1988	500	624.651.400	Paid
BRI	1989	150	251.898.000	Paid
Jumlah		2.359	1.867.667.300	Paid

## 5. Dairy Production

In 1997 milk produce 75.000 litre per day from 5000 head dairy lactation. The average production is 15 litre/cow/day. This amount 15 litte/caw/day is considered under optimum production of Frissian Holstein dairy cow. This is caused by lack of good management of the farmers, and the difficulties is geting high quality of consentrate and the continuity of giving it to the cows.

Table 4. Milk Production Per Dairy Cattle (1995)

Milk Production (littre per day)	Heads	Prosentage
> 20	38	3.7
15 - 20	286	28
10 - 15	591	58
< 10	105	10.3
J u m l a h	1.020	100

## 6. Processing and Marketing.

Table 5. Milk Production and Marketing (Million Litre)

Year	1991	1992	1993	1994	1995	1996
Production	15.1	17.1	20.5	21.0	24.0	24.8
Marketing	15.0	17.0	20.5	20.6	23.8	24.5

## 7. The Infrastructure

The co-operative has dairy implements which are completed enough to support its operational tasks. This can be seen from the following properties it has :

TABLE 6. The Infrastructure

No.	Items	Amount	Capacity
1.	Land	31 unit	60.153 M <sup>2</sup>
2.	Office building	1 unit	4.000 M <sup>2</sup>
3.	Cooling unit	14 unit	1.000M <sup>2</sup>
4.	"Milk Truck" 8500 kg	9 unit	76.500kg
5.	"Milk Truck" 3000 kg	8 unit	24.000kg
6.	"Feed Cattle Truck" 6.000kg	7 unit	42.000kg
7.	Motoreycle	29 unit	-
8.	Ware house	1 unit	920 M <sup>1</sup>



## **8. PROBLEM FACED BY SOCIETY**

The feed mill activity is depend on the provision of inputs which primarily is wheat pollard or rice brand. Government has given subsidies on selling wheat pollard with the system to the farmer through KPSBU.

Over the years, the dependence of feed mill on the usage of wheat pollard is getting bigger and bigger. In addition the feed mill needs bigger working capital, so at the end mill faced the following situation :

- a) At the beginning, the procurement of wheat pollard was based on UPS's quota and later was changed to KPSBU quota.
- b) The high dependence upon wheat pollard, because beside the price relatively much cheaper with high constant quality. Also because it is palatable for their cattle.
- c) While rice bran as a pollard substitute is seasonal with the higher price, and fluctuable quality.
- d) According to the government policy, every mill which receive pollard quota, has to supply concentrate to the farmer at a fix price, but in the other hand the cost of product was necessarily high, due to the problem of indogenous material availability such as copra cake, maize and rice bran.
- e) Not adequate with the fund purchasing raw material on the cash payment such as wheat pollard.

## 9. NEEDS AND JUSTIFICATION

Base on above mentioned problem, KPSBU have to defined strategy and choosing alternative viz :

- a. Establishing Dairy Cattle Feed Mill in KPSBU central dairy farming in Cikalong Wetan subdistrict Bandung West Java..
- b. Cutting down the production cost by enhancement activities such as rice bran and cake during the peak season.
- c. Improving the distributing system by provision transportation to obtain better price for existing volume of feed handled.
- d. The programme surely will change the socio - economic condition of the farmer to be better than the existing one, while the feed mill plant still has the benefit.
- e. The cash flow calculation is presented in annex 1. It is positively a profitable programme, which is :

IRR = 24.29, NPV at 18 % disc. Rate = Rp. 68,193,173.-

B/C ratio at 18 % discount rate = 1.23

Pay - back periode at 18 % disc. Rate = 8 years.

## CHAPTER III

### THE PROJECT

#### *3.1. The Objective*

By establishing a feed mill, the following advantages may be gained.

- To increase production and improve the quality of dairy product
- To increase the farmers income by reducing the cost of feeding
- To maintain the stability of the feed prices
- To increase the cooperative activities which one oriented to the raising of farmers income .

#### *3.2. Area of Operation*

This project is located in Cikalong Wetan in Bandung District (KPSBU Central Dairy Farming), it operates for own farmers, consist of 22 Village, 8 sub district, 2 district.

There is a road connected to the main high way of Bandung Jakarta. Therefore raw materials as wellas product can be transported easily.

### 3.3 Project Component

#### 1. Componen Activities

- a. Marketing survey
- b. Feed mill consultancy
- c. Feed Processing Equipment
- d. Production Activities

#### 2. Component Time

- a. Time and Phase Plan.
- b. Project implementation schedule.

*Table 7. Formula of cattle feed concentrate :*

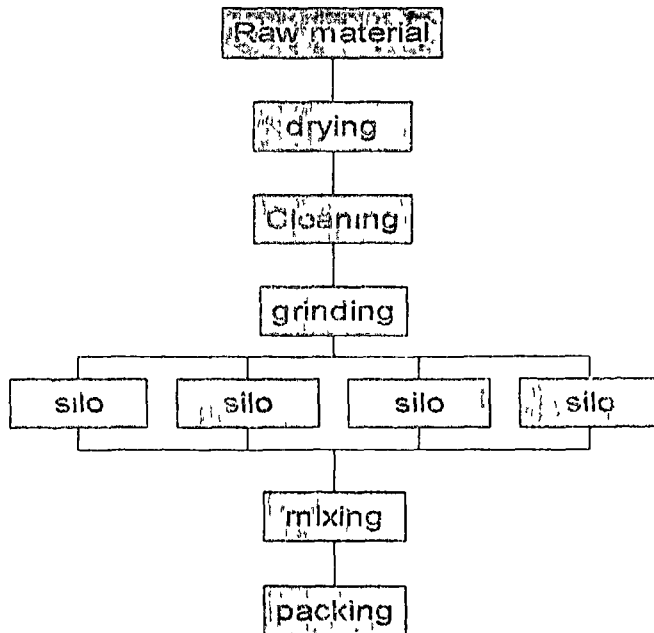
No.	Name of Ingredients	Composition (%)	Price (Rp/Kg)
1.	Wheat Pollard	45	112.20
2.	Copra Cake	13	250.00
3.	Palm Oil Cake	13	155.00
4.	Rica Bran	13	130.00
5.	Kapook seed Cake	6	150.00
6.	Fish Meal	1	800.00
7.	Mineral Vitamin	5.5	375.00
8.	Maize	3.5	350.00

## 2. Processing

The raw materials, either dry matter or fresh, process should be dried first. The grinding machine then will process them into powder matter. However, the raw materials should be cleaned first to prevent the rough materials from being ground because this may break the machine. Powdered concentrate is kept in silos. The five/six kinds of raw material are put into the mixer.

Within a certain period of time if the concentrate has been homogenous the mixer will stop working. The feed concentrate is then packed in 50 kg plastic bag and ready to distribute to the farmers.

**Chart of Processing**



### 3. Marketing

Concentrate marketing is done by the cooperative by enclosing it in the milk price (market monopoly). The farmers receive payment from Cooperative every fifteen days. The milk is purchased at Rp 720,- /liter. The price of feed from private factory is Rp 300,- /kg. While the Cooperative sell it at only Rp 200,-/kg. The farmers not to worry about the concentrate because it is available in the Cooperative.

#### 1. Preparation of general plant.

- Preparation of official proposal
- Approval by cooperative representatives and Board of Directors.

#### 2. Purchasing of Land.

- Land is already available.

#### 3. Loan.

- Preparation of loan plan
- Obtaining approval from the government.
- Signing of loan contract.

#### 4. Building Contraction.

- Design and preparation of building site.
- Construction of the building.

#### 5. Ordering machinery equipment

- Ordering the machinery.
- Purchasing the equipment

#### 6. Education and Training of staff.

- Preparation of operation manual
- Training staff

#### 7. Test working/trial production

#### 8. Formal operation

The general progress of work is :

- Develop of the land it will take 3 month
- Instalation of plant and machinery and other accessories etc. would be completed by 10 months.

# CHAPTER IV

## DETAIL OF OPERATION

### 4.1. Time and Phase of Plan

The project would be implemented in 6 month of continuous work which include :

- ◆ Project designing
- ◆ Approval by the chairman of KPSBU
- ◆ Fund collection
- ◆ Tender for civil construction and its finalisation

Table 8. Project Implementation Schedule

COMPONENT / MONTH	1		2		3		4		5		6	
	1	2	3	4	1	2	3	4	1	2	3	4
a. Detailed survey	**											
b. Land Development	****											
c. Building, Storages & Office	*****											
d Electricity Supply			*****									
e Procurement of Mixer Silo and Grinder			*****									
f Laboratory Equipment							****					
g Mixer Installation							*****					
h Access road & Parking								*****				
i Office Equipment									**			
j. Truck Procurement									**			
k. Production trial									**			



## Phase of Plan

1. Pra Operative : Project Implementation Schedule
2. Operative 10 years
3. Phase of Evaluation

### 4.2. *Source of Fund*

The total finance that is proposed to be come from Bank Indonesia is Rp.300,000,000 over 8 years periode to cover the investment. In order to execute the program smoothly, there are two key point must be taken into account. Firstly the investment cost which is very important for providing the equipment and other fascilities. Secondly the working capital which is very important for starting the comercial business. Without these two, the programme will not be run or the programme will stay as a course reported and nothing is implemented.

### 4.3. Cost Estimates

Table 9. Cost Specification

Items	Total Cost	Cost (000)
<b>Investment :</b>		
• Land	Already	Available
• Land Development (Access Road etc.)		8,000
• Building (Plant & Storage)		120,000
• Mixer, silo and Grinder		50,000
• Handling and storages equipment		6,500
• Laboratory and software		10,000
• Generator		3,000
• Feed truck		10,000
• Office furniture		30,000
• Office furniture		2,500
• Miscellaneous & Contingency (10% from above)		24,000
• Consultancy, Prelim. Exp. Incl interest capitalized		5,000
• Margin money for working capital		31,000
	<b>TOTAL</b>	<b>300,000</b>

# CHAPTER V

## ORGANIZATION AND MANAGEMENT

### 4.1. System of Organization

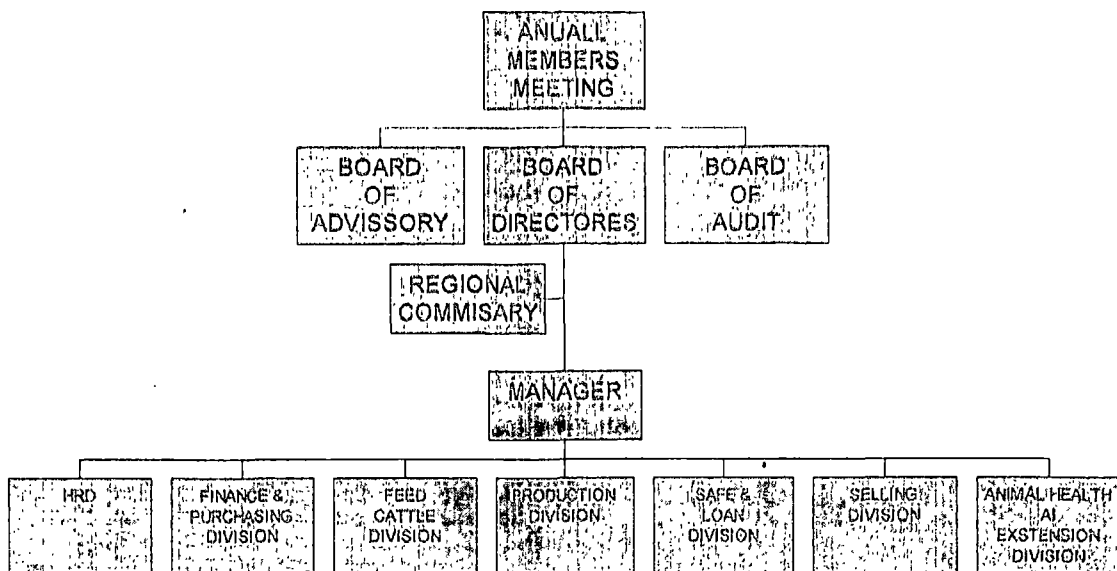
The project's organization can not be separated from the Cooperative organization. It is the manager who is able to carry out the activities, due to manager has already available, and then they would be assisted by the staff.

### 4.2. Function of Organization.

The function the organization is carrying out the task given by the members to advance the cooperative and increase their income.

The board of directors are chosen by the members together with the manager act as the executor of the cooperative activities.

## ORGANIZATION STRUCTURE OF KPSBU



### 4.4 Staff Requirement and Worker (incremental)

TABLE 10. Worker Wages Expenses

Personal	No .	Monthly Salary	Annually Salary
Head of Feedmill Dvn	1	200 , 000 . -	2, 400 , 000 . -
Extention Worker	1	150 , 000 . -	1, 800 , 000 . -
Supervisor	1	200 , 000 . -	2, 400, 000 . -
Plant Operator	2	250 , 000 . -	3, 000, 000 . -
Unskilled Labour	8	600 , 000 . -	7, 200, 000 . -
Benefits, Allowance & Incentive		10 %	1, 680,000 . -
		<b>Total</b>	<b>18, 480, 000</b>

# CHAPTER VI

## FINANCIAL ANALYSIS

### 1. Basic Assumption

Feed Mill minimal will covers 5 villages in Cikalong Wetan subdistrict. Number of farmers : 200

Number of cows : 1740 (lactation )

Feed requirements/cow/day average 7 kg.

So, daily requirements of feed =  $(1740) * (7) = 12,180$  kg.

Yearly requirement of feed =  $(12,180) * (365) = 4,445,700$  kg.

= 4,46 MT

Additional cows to be given to farmer = 714

Feed requirement for extra cow  $(714) * (7) * (365) = 1,824,270$ .-

Total requirement of feed = 6,271 MT.

Assuming 300 working days in a year ;

Daily production =  $6271/300 = 20.90$  MT.

Assuming 2 shift operation, i.e. 15 effective hour/day.

Hourly production =  $20.9/15 = 1.39$  MT./ hour.

## 2. Estimation of Project Cost.

TABLE 11. Investment

Land has already available

Items	Rp. 000 . -
Land Development	8,000.-
Building (Plant & Storage)	120,000 . -
Mixer , silo , and grinder	50,000, -
Handling & storage equipment	6,500, -
Laboratory equipment	10,000, -
Computer and softwear	3,000,-
Generator	10,000,-
Feed truck	30,000,-
Office furniture	2,500,-
Miscellaneous & Contingency (10 % from above)	24,000 . -
Consultancy + preliminary Expenses including interest capitalized	5,000 , -
Margin money of working capital,	31,000 . -
<b>TOTAL</b>	<b>300,000 . -</b>

TABLE 12. Depreciation

Asset subject to Depreciation		Life	Depr. rate
Land development	8 , 000 . -	-	-
Building + Civil Construction	120 , 000 . -	20	5 %
Machinery + Furniture	82 , 000 . -	10	10 %
Feed truck	30 , 000 . -	5	20 %
Preliminary Exp . + Consultancy	5 , 000 . -	to be 10	amortized over

TABEL 13. Production Cost / kg. Of Feed

A. Variable

Raw Material	Price	Composition
Wheat Pollard	112 . 20	45 . 0 %
Copra Cake	250 . 00	13 . 0 %
Palm Cake	155 . 00	13 . 0 %
Chocolate Skin	130 . 00	13 . 0 %
Kapook Seed Cake	150 . 00	6 . 0 %
Fish Meat	800 . 00	1 . 0 %
Min - Vit	375 . 00	5 . 5 %
Maize	350 . 00	3 . 5 %
		169 . 92 %
W. Pollard Transportation		5 . 85
Raw Material Price		175 . 77
Packaging		7 . 70
Power & Fuel		1 . 00
Handling		1 . 53
Total Variable Cost / kg.		186 . 00

B. Fixed Costs (first year)

Wages & Salaries	16 , 500 , 000 . 00
Administration	8 , 400 , 000 . 00
Maintainence + Repair	9 , 000 , 000 . 00
Depreciation	As per Calculation
Interest on Work in Capital	As per Calculation
Interest on long Term Loan	As per Calculation
Miscellaneous	2 , 500 , 000 . 00

**TABLE 14. Working Capital**

<b>Working Capital Requirement at Full Cap. (10,500 MT.)</b>	<b>( Rp. )</b>
1 / 2 Month requirement of raw material	76 , 897 , 187 . 50
1 Month salaries , wages , maintainence + repair , Miscellaneous (year 4 th)	3 , 906 , 670 . 87
1 Month Power and Fuel	875 , 000 . 00
1 / 4 Month Packaging Materials	1 , 684 , 375 . 00
1 / 8 Month (approx. 3 days) Finished goos invent	20 , 175 , 859 . 38
<b>Total Working Capital Requirement</b>	<b>103,539 ,092 . 74</b>

Margin Money for Working Capital (30 %) = 31,061, 727.82

Say 31,000,000.00

Interest on Working Capital = 18 %

Interest rate on Long term loan = 20 %

Long Term Loan (Investment) Rp 300 , 000, 000, 00

**TABLE 15. DEPRECIATION**

Year	Building (A)		Plant Aquip+ Machine(B)		Truck ( C )	
	Depreciate	Book Val.	Depreciate	Book Val.	Deprec.	Book Val
0	-	120,000	-	82,000	-	30,000
1	6,000	114,000	8,200	73,800	6,000	24,000
2	5,700	108,300	7,380	66,420	4,800	19,200
3	5,415	102,885	6,642	59,773	3,840	15,360
4	5,144	97,741	5,978	53,800	3,072	12,288
5	4,887	92,854	5,380	48,420	2,458	40,000
6	4,643	88,211	4,842	43,578	8,000	32,000
7	4,411	83,800	4,358	39,220	6,400	25,600
8	4,190	79,610	3,922	35,298	5,120	20,480
9	3,981	75,630	3,530	31,768	4,096	16,384
10	3,781	71,848	3,177	28,592	3,277	13,107



Salvage Value end of 10 years = 152,609.12

(A + B + C + Land + Margin Money for Working Capital)

\*The Truck Will be sold at end of 5 years at about value, and new truck will be bought at Rp. 40,000,000

TABLE 16. LOAN REPAYMENT SCHEDULE

Year	Loan Amount	Interest Payment	Principle Repayment	Balance to Loan
0	300,000	---	--	--
1	300,000	48,000	30,000	270,000
2	270,000	43,200	30,000	240,000
3	240,000	38,400	30,000	210,000
4	210,000	33,600	30,000	180,000
5	180,000	28,800	30,000	150,000
6	150,000	24,000	30,000	120,000
7	120,000	19,200	30,000	90,000
8	90,000	14,400	30,000	60,000
9	60,000	9,600	30,000	30,000
10	30,000	4,800	30,000	0

**Cash Flow for Discounted Measure of Project Worth**

Cash in flow = P . A . T . + Depreciation + Interest of L . T . Loan  
 Preliminary exp. + Consultancy

P . A . T . = Profit After Tax

L . T . = Long Term

TABLE 17.

Year	Investment	Cash Inflow	Net Cash Flow
0	- 300 , 000	0	300 , 000
1	0	68 , 942	68 , 942
2	0	76 , 917	76 , 917
3	0	84 , 683	84 , 683
4	0	92 , 206	92 , 206
5	- 30 , 170	87 , 631	57 , 461
6	0	83 , 648	83 , 648
7	0	78 , 227	78 , 227
8	0	72 , 452	72 , 452
9	0	66 , 271	66 , 271
10	0	59 , 630	212 , 239
	Salvage Value	152 , 609 +	

TABLE 18.

Year	Net Cash Flow	D . F . at 20 %	P . V . at 30 %	D . F . at 30 %	P . V . at 30 %
0	300 , 000	1,0000	300,000	1,0000	300,000
1	68 , 942	.8333	57,451.67	.7692	53,032.31
2	76 , 017	.6944	53,414.58	.5917	45,513.02
3	84 , 683	.5787	49,006.37	.4552	38,544.83
4	92 , 206	.4823	44,466.65	.3501	32,283.90
5	57 , 461	.4019	23,092.15	.2693	15,475.83
6	83 , 648	.3349	28,013.47	.2072	17,329.83
7	78 , 227	.2791	21,831.84	.1594	12,466.82
8	72 , 452	.2326	16,851.05	.1226	8,881.87
9	66 , 271	.1938	12,843.84	.0943	6,249.37
10	212 , 239	.1615	34,277.83	.0725	15,395.45
NPV	41,248.45		41,248.45		54,826.79

$$\begin{aligned}
 \text{IRR} &= 20 + \left( \frac{41240}{41240 + 54838} \right) (30 - 20) \\
 &= 20 + 4,29 \\
 &= 24,29 \%
 \end{aligned}$$

The project is therefore viable

Lets evaluate NPV and B/C Ratio at 18 % discount rate

TABLE 19.

Year	Net Cash Flow	D. F. at 0.18	P. V. at 0.18
0	- 300 000		- 300 000
1	68,942		58,425.42
2	76,917		55,240.59
3	84,683		51,540.69
4	92,206		47,558.85
5	57,461		25,116.58
6	83,648		30,985.78
7	78,227		24,557.55
8	72,452		19,275.03
9	66,271		14,941.29
10	212,239		40,551.39
	68,93.17		68,193.17

NPV at 18 % discount rate = 68 . 193 . 17

B / C Ratio at 18 % discount rate =  $\frac{368 . 193}{300 , 000} = 1.23$

At 18 % discount rate, the pay - back periode 8 years

Present Value at 18 % for 7 years 293 , 425 . 47

Present Value at 1 % for 8 years 312 , 700 . 49

To Calculate B . E . P , suppose we consider the case of 3th. Year  
 Contribution/Kg - (Selling - Variable Cost ) = 200 - 186 = Rp.

14

Total Fixed Costs in 3<sup>rd</sup>. year = 109 , 140 , 000

B. E. P. = 7 , 795 , 714 Kg

7 , 795 . 71 · MT

$$= \frac{7,795,714}{10,500,000} = 74.24\% \text{ of Capacity}$$

Availability of Funds for Repayment of Loan Installment + Interest  
 Funds Available = PAT + Depreciation + Interest on Long  
 Term Loan + Preliminary Expenses Amortised

TABLE 20.

Year	Loan Installment + Interest on Loan	Funds Available	Debt Service Coverage Ratio (DSCR)
1	78,000	68,942	0.88 **
2	73,200	76,917	1.05
3	68,400	84,683	1.24
4	63,600	92,206	1.45
5	58,800	57,461 *	0.98 **
6	54,000	83,648	1.55
7	49,200	78,227	1.59
8	44,400	72,452	1.63
9	39,600	66,271	1.67
10	34,800	59,630	1.71

\* After less 30,170, required to pay for the new truck, after selling the old truck

\*\* Funds not adequate to service loan during these, and repayment will be affected. Extra short term borrowing will be necessary.

## CHAPTER VII

### RECOMMENDATION

1. The Project may last in 10 - 20 years
2. From the previous calculation, it can be seen the average sale price of concentrate from the cooperative is Rp. 200 .-/ kg, compare to Rp.350.- / kg. - the factory (privat) sale price. Consequently the expenses for concentrate can be reduced by Rp , 150 . - / kg. Or 75 %.
3. The financial analysis reveals that the total investment cost is Rp. 300,000, 000. The IRR is 24.3 % and the Pay - back periods of about 8 tears and B/C Ratio is 1.23
4. IRR is 24.3 %, is higher than Bank Interest (0,3 %) and the pay- back periods of bout 8 years is shorter the project life periods of 10 years. Therefore, it is reasonable that this project should be carried out.

**PROJECT OF FEED MILL PLANT  
CASH FLOW**

DESCRIPTION	YEAR											
	0	1	2	3	4	5	6	7	8	9	10	
Investment Rp 300 000												
Capacity MT/Year	200 00	10,5	10,5	10,5	10,5	10,5	10,5	10,5	10,5	10,5	10,5	10,5
Capacity Utilization (%)		70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%
Production (MT)		7 35	8,4	9,45	10,5	10 5	10 5	10 5	10 5	10 5	10,5	10,5
<b>Sales Revenue (RP 000)</b>												
Sale of Feed (RP/kg)		1,470 000	1 680 000	1,890 000	2,100,000	2,100,000	2 100 000	2,100 000	2 100 000	2 100,000	2,100,000	2,100,000
Sale of Empty Bags		10	11	12	13	13	13	13	13	13	13	13
Total Revenue		1,480 000	1 691 000	1,902 000	2,113,000	2,113,000	2 113 000	2 113 000	2,113 000	2,113 000	2,113 000	2,113,000
<b>Variable Cost</b>												
Manufacturing Cost(Rp/kg)	184 40	1,355,340	1 548 960	1,742 580	1 936,200	1,936,200	1 936 200	1 936 200	1,936 200	1 936 200	1,936,200	1,936,200
Handling Cost (Rp/kg)	1 60	11,76	13,44	15 12	16 8	16 8	16 8	16 8	16 8	16 8	16 8	16,8
Total Variable Cost (Rp/kg)	186 00	1,360 100	1,562,400	1,757,700	1,953,000	1,953,000	1 953 000	1 953 000	1 953 000	1,953 000	1,953 000	1,953,000
<b>Fixed Costs</b>												
Wages + Salaries(10%incr /Yr)	1 10	16,5	18,15	19 965	21,962	24 158	26 573	29 231	32 154	35 369	38,906	38,906
Administration(5% incr /Yr)	1 05	8,4	8 82	9 261	9 724	10 21	10 721	11 257	11 82	12 411	13,131	13,131
Maintenance+repair(incr 10%/Yr)	1 10	9	9 9	10 898	11 979	13,177	14 495	15 944	17 538	19 292	21,222	21,222
Depreciation		20 2	17 88	15 897	14 194	12 725	11 485	10 169	8 832	7 606	6 506	5 536
Preliminary Exp +Consultancy		500	500	500	500	500	500	500	500	500	500	500
Interest on Working Capital		7 515	9 356	11 202	13 052	13 116	13 185	13 26	13 434	13 434	13,533	13,533
Interest on Long Term Loan		48	43,2	38,44	33 6	28,8	24	19 2	14 4	9 6	4,8	4,8
Miscellaneous (10% incr /Yr)	1 10	2,5	2,75	3,025	3,328	3 66	4 026	4 429	4 872	5 359	5,895	5,895
Total Fixed Cost		112,615	110 556	109,14	108 338	106 346	110 985	108 99	107 859	107 571	108,123	108,123
Profit Before Cost		285	18 044	35 16	51,662	53 654	49 015	51 01	52 141	52 429	51,877	51,877
Tax (15%)	0 15	43	2 707	5 274	7,749	8 048	7 352	7 652	7 521	7 864	7,782	7,782
Profit After Tax	0 85	242	15 337	29 886	43,913	45 606	41 663	43 359	44 32	44 565	44,096	44,096
Cumulatif Cash Flow	-300	-231,058	-154 141	-69 458	22 748	80 209	163 857	242 084	314 536	380 807	593,046	593,046
Discounted Cum Cash Flow	-300	-242 548	-189 134	-140 127	-95 661	-72 569	-44 556	-22 724	5 74	6 97	41,248	41,248
Discounted Pay-Back Periode	9											
Cum Cash Flow @30%	300	-246 968	-201 455	-163 171	-130 887	-115 411	-98 081	-85 614	-76 734	-70 483	-54,88	-54,88
IRR	NPV at 20	30%										
24 29	BCR	41 248 45	-54 826 79									
1 23												

**MONTHLY CASH BUDGET FOR THE FIRST YEAR**

PARTICULAR	Januan	Pebruan	March	April	May	June	July	August	September	October	November	Des
Cash Receipt from sales	100	112 5	122 5	122 5	122 5	127 5	127 5	127 5	127 5	127 5	127 5	127 5
Purchased of												
Manufactured	92 2	103 725	112 945	112 945	112 945	117 555	117 555	117 555	117 555	117 555	117 555	117 555
Direct Labour	800	800	800	800	800	800	800	800	800	800	800	800
Over Head	2 125	2 125	2 125	2 125	2 125	2 125	2 125	2 125	2 125	2 125	2 125	2 125
Administration	700	700	700	700	700	700	700	700	700	700	700	700
Sales expenses	42	42	42	42	42	42	42	42	42	42	42	42
Interst exp	735	735	735	735	735	735	735	735	735	735	735	735
Total Cash disbursement	96 602	108 127	117 347	117 347	117 347	121 957	121 957	121 957	121 957	121 957	121 957	121 957
Deficit / Surplus	3 398	4 373	5 153	5 153	5 153	5 543	5 543	5 543	5 543	5 543	5 543	5 543
Cumulatif	3 398	7 771	12 924	18 077	23 23	28 773	34 316	39 859	45 402	50 945	56 488	



TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
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AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

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2872.98

**PROJECT PROPOSAL**

Title of the  
Project Proposal : RUBBERWOOD SAWMILL

Country : MALAYSIA

Project Proposal  
Prepared by : ZAHARI MAT AMIN

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
India, Philippines and Japan



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Zahari Mat Amin  
NARSCO Malaysia

## SUMMARY

1. This project is to construct the Rubberwood Sawmill, where rubberwood logs are being processed to sawntimber, and it will be implemented by the Negeri Sembilan Rubber Smallholders Corporative Ltd. in the state of Negeri Sembilan.
2. The objectives of the project are to create another source of income to the corporative through rubberwood sawmilling by using raw materials which can be obtain from the members.
3. The total investment of the project is RM328,000 and will be supported by the corporative fund RM78,000 and bank loan RM250,000.
4. The capacity of the project is to process 21,600 m<sup>3</sup> rubberwood logs and to produce 6,480 m<sup>3</sup> sawntimber per annum. The price of rubberwood logs is RM80 per m<sup>3</sup>, meanwhile the price of sawntimber is RM450 per m<sup>3</sup>.
5. The construction work will begin in Jun 1998 until Disember 1998. The factory will begin it's operation on Januari 1999. Term of project operation will be 5 years which will end in Disember 2003.
6. The major components of rubberwood sawmill are :
  - Building, bendsaw, grading centre, logs depot, sawntimber depot, dipping area, saw sharpener area, burning area, office and a store.
7. 17 people will be employed as regular workers, and 13 workers will be employed based on wages basis in two shift working hours.

8. Sawntimber will be marketed to the kiln dry factory, furniture factory and also to the moulding and joining factory.
9. The viability of the project as a financial analysis are as follow :
  - a) Net present value (9.15%) is RM 886,742
  - b) Intrenal; rate of return is 80.41%
  - c) Loan repayment in 5 years.
  - d) Break Even Point is RM 966,592 ini year one and RM 1,067,535 in year five.
  - e) Net Cash Flow is RM 255,719 in year one and RM 457,118 in year five
10. Anyway the ccmmittment of workers and members and also the BOD will influence the progress and the success of the project.
11. Based on the market situation today, the project has a very good prospect in future though it is aware that the competition is slightly great.

## **1. INTRODUCTION**

Koperasi Pekebun Kecil Getah Negeri Sembilan Berhad or Negeri Sembilan Rubber Smallholders Corporative Ltd. founded in 1980. The main activities done by the corporative is helping the members in implementing the replanting for rubbers. The process of work involved are :

- a) Falling off old rubber trees;**
- b) Land clearing;**
- c) Planting new rubber trees.**

In the process of land clearing, rubber trees will be cut into 6 feet long and being sold to the sawmiller or other purposes. In certain condition, the rubber trees had to be burn.

Looking to the prospect of utilization of rubberwoods, the Corporative should think forward on how to manipulate the resources of rubberwood logs to sawntimber on their own. It can happen if the Corporative are willing to set up a sawmill. The important issue here is how the Corporative should increase the value-added of the rubberwood from logs to sawntimber.

This project paper are prepared based on the intensive observation to the resources, supply and demand of the sawntimber at present and future estimate.

Here with the project paper define the details viability of the Rubberwood Sawmill.

The Corporative Board of Directors should study, assess and justify the project correspondence in order to make the decision.

## 2. BACKGROUND

Malaysia is a constitutional monarchy under the Yang DiPertuan Agong (King), which are being elected from among the Rulers Of The Nine Malay State, once in every five years.

The Malaysian Parliament consists of two houses that is the Dewan Negara (Senate) and the Dewan Rakyat (House of Representative). The Dewan Negara comprise of 43 Senators who are appointed by the Yang Di Pertuan Agong and 26 members are being elected by the State Legislative Assemblies. The 180 members of the Dewan Rakyat are being elected in the General Election held once in every five years.

The present government are elected in the general election, and the ruling party - the Barisan National (National Front) is a coalition of various parties representing the various races in the Malaysia.

Malaysia is one of the fastest economy developing today, and have been able to sustain the economic growth of about 8% for nine consecutive years. Total Gross Domestic Product (GDP) (at 1978 price) in 1995 is RM120.3 billion, increase 9.5%. Agriculture, forestry and fishery Gross Domestic Product (GDP) is RM16.4 billion, increase 2.2%. Gross National Product (GNP) at current price in 1995 is RM202.5 billion, increase 14.8%. (Refer Appendix 1).

In 1995, Malaysian population is 20.1 million, and contribute 8.1 million labour force. 7.8 million are employed in various sectors. Per capita earning for Malaysian people are RM7,000 per annum.

Manufacturing or industrial sectors contribute RM39.8 billion to GDP in 1995 and has become one of the important economic key to the country. The Malaysian furniture industry experienced phenomenal change in the mid 1980's following the successful utilization of rubberwood as "a newly discovered" resource.

The processing of rubberwood is now a major component of the wood based industries especially for the production of furniture and reconstituted wood based products such as chipboard and Medium Density Fibreboard(MDF).

The largest group of users of rubberwood sawntimber is the furniture sector, and 80% of the furniture exported in 1994 were of rubberwood based. In 1994, total value export of rubberwood furniture are RM1,130 million. Export value of rubberwood moulding in 1994 are RM146.7 million, and export of MDF in 1994 are RM182 million. (Refer Appendix 2).

There are two government agencies under the Ministry of Primary Industries responsible to the industry :

- 1) Malaysian Timber Council**
- 2) Malaysian Timber Industry Board**



### 3. NATURAL RESOURCES

- \* The availability of rubberwood is highly influence by the rubber areas proposed for replanting when the old rubber trees are no longer economically tapped for latex production. The average period for replanting is usually about 25 years, although in certain cases it may be until 30 years.
- \* The smallholdings sector, which cover about 1.14 million hectars is largely owned by the Rubber Industry Smallholder Development Authority (RISDA), Federal Land Development Authority (FELDA) and Federal Land Consolidation Rehabilitation Authority (FELCRA). As for the estate sector, its ownership ranged between the public and private companies about 164,800 hectars.
- \* Table 1 indicate the total area planted with rubber trees by smallholdings and estate by states in Peninsular Malaysia in 1992.

Table 1  
**TOTAL RUBBER PLANTING UNDER SMALLHOLDINGS  
 AND ESTATES IN PENINSULAR MALAYSIA  
 IN 1992 (HECTARS)**

State	Smallholdings			Estates	Total
	RISDA	FELCRA	FELDA		
Johor	256,500	9,700	22,500	21,800	310,500
Kedah / Perlis	121,200	4,500	-	46,500	172,200
Kelantan	91,100	-	500	6,600	98,200
Melaka	18,000	1,200	4,000	6,700	29,900
Negeri Sembilan	88,700	10,700	29,500	18,200	147,100
Pahang	146,300	300	34,800	25,900	207,300
Penang	13,500	-	-	600	14,100
Perak	182,300	-	-	21,400	203,700
Selangor	6,500	1,600	1,400	11,600	21,100
Terengganu	91,600	3,600	2,800	5,500	103,500
	1,015,700	31,600	95,500	164,800	1,307,600

(Sources : Malaysian Timber Industry Board)

According to the MTIB study, the conversion factor of 180 m<sup>3</sup> rubberwood per hectare for the smallholdings sector and 220 m<sup>3</sup> per hectare for the estate are determined.

The variation is due to the factors such as the quality and quantity of rubberwood available in both sector.

Total availability of rubberwood logs suitable for sawntimber production is based on the assumption that 20% of rubberwood are processed. Based on this conversion rate, the availability of rubberwood logs is 36m<sup>3</sup> per hectare for smallholdings. To derive the supply of rubberwood sawntimber, the average recovery rate of 30% of logs is converted into sawntimber. It means that one hectare of rubberwood can produced

Under the replanting scheme in the country, RISDA proposed 40,000 hectares are to be replanted every year. Based on the conversion rate indicate the supply of rubberwood sawntimber is 432,000 m<sup>3</sup> every year. It is estimated that about 86% of the total supply of rubberwood logs and sawntimber came from smallholdings, whereas the estate sector only contributed about 14%.

#### **4. SUSTAINABILITY OF NATURAL RESOURCES IN THE PROJECT AREA**

- RISDA in the state of Negeri Sembilan has identified about 88,700 hectares of land planted with rubber trees. Out of that, 26,600 hectares are more than 25 years old and due to replanted. Throughout the replanting scheme, the replanting target of RISDA Negeri Sembilan are 2000 hectares of old rubber trees will be replanted yearly, which will be done by the Timber Latex Clone (TLC), and introduce hedge planting (increase planting capacity in the area). Estimated from 2,000 hectares the availability for rubberwood logs are 72,000 m<sup>3</sup> and can produce about 21,600 m<sup>3</sup> sawntimber.
  
- 70% of the smallholders involved in replanting programme are the corporative members. Meaning that, the estimated 1400 hectares which follow the replanting programme own by the corporative members. 30% of the land are remote area, and lack of infrastrurcture to bring out the rubberwood logs. Only 70% or 980 hectare are available for rubberwood logs which can produce 10,500 m<sup>3</sup> sawntimber.
  
- Until now, the corporative involved in helping the members in clearing the land for replanting, and at the same time doing arrangement trading rubberwood logs on behalf of the members.

## 5. PROJECT RATIONALE

The rationale to the established rubberwood sawmill by the corporative are based on the criteria below :-

### 5.1. *Raw Material :*

- Most of rubberwood logs in Negeri Sembilan are supply by the smallholders which are also the corporative members. In this condition, the corporative are already involved in the trading of rubberwood logs.
- The situation are clear now that there is no problem to the corporative in finding rubberwood logs as a raw material to the sawmill. Members are willing to give chance to the coprorative to take advantage, and hoping there is no manipulating in the price of the rubberwood logs.

### 5.2. *Demand of Rubberwood Sawntimber :*

- Consumption of rubberwood sawntimber in 1995 for furniture is 492,800 m3 and moulding 278,400 m3. By the year 2000, the estimated consumption for furniture is 796,000 m3 and moulding is 508,900 m3. Within 5 years increasing in consumption for furniture is 303,200 m3 and moulding is 230,500 m3.
- According to the MTIB, by the year of 2000, the estimated sawntimber production will be 1,332,000 m3 and consumption 1,305,000 m3 and export will be 40,000 m3. The figure show deficit in supply 13,000 m3.

### 5.3. ***Stabilise Rubberwood Logs Price :***

- Through experience, smallholders or members of corporative cannot receive good price especially at the pick season of replanting. Buyers sometimes try to push to lower price and delay in payment.
- The problem can be solve where the corporative rubberwood sawmill directly buy from the members.

## 6. DESIGN CONSIDERATION

- The design of the factory only concentrate on processing rubberwood logs to sawntimber. The operation of factory or sawmill influenced by two main factors :
  - a) **Rubberwood are perishable items;**
  - b) **Supply of raw materials and marketing practices.**
  
- The rubberwood fibres contains highly lactose and moisture which will cause the rubberwood to be slightly wet. The condition are very sensitive and can attract bacteria in a very short period. Bacteria infection can be avoided by processing the rubberwood within 14 days (from cutting day), and given chemical treatment. It can be stored for maximum 7 days and had to be dried by kiln dry process.
  
- To avoid destruction, suppliers should deliver the rubberwood logs not more than 5 days after cutting, and sawmill can be process within 5 days. Further sawmiller will deliver sawntimber to the buyer not more than 7 days after being process.

### 6.1. **Project Location :**

- The rubberwood sawmill or factory will be set up on a piece of land located at Kampung Kepis in the district of Kuala Pilah in the state of Negeri Sembilan. The land is own by the corporative 4 years ago. The land is a flat area with a road frontage. The border of the land is divided by a small stream. There is also an electric supply in that area. (Refer appendix 3).
  
- Located in a strategic place where most rubber area surrounds the district of Kuala Pilah. The situation give certain advantages to the factory such as :
  - a) Supply of rubberwood logs are easily obtain;
  - b) Process of delivery can be manage in a short period.

- The nearest settlement area are around 1 kilometer from the site.

According to the environmental study, there will be no disturbance of environment nor the health of the society around.

## **6.2. Scale And Components :**

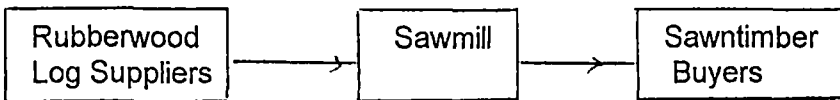
- At early stage, the factory will be set up on half acre of land. The size of the factory can be hold of:-
  - a) One unit of building 18m x 48m
  - b) 3 units of bendsaw
  - c) 2 unit of grading/quality control area
  - d) Rubberwood logs depot
  - e) Sawntimber depot
  - f) Cistern/dipping area
  - g) Saw sharpener area
  - h) Dust collecting/burn area
  - i) Office
  - j) Store
- The design of the building are simple. It is just fixing roof without wall, looks like and open air concept, except for the office space 10m x 13m, store 6m x 10m and saw sharpener area 6m x 6m. Setting arrangement for equipment and machinery as in appendix 4.



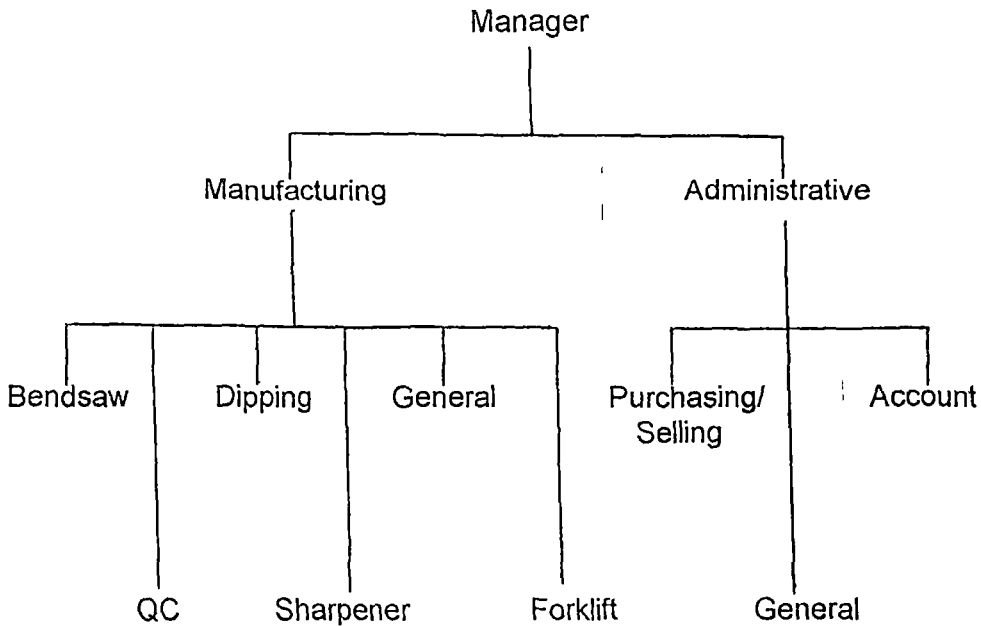
- The important component in processing rubberwood logs to produce sawntimber are the bendsaw. 3 units of bendsaw are fix besides other machinery and equipments as a supporting to the production. One unit of bendsaw can process 12.0 m<sup>3</sup> of rubberwood log and can produce 3.6 m<sup>3</sup> sawntimber in 8 working hours per day. It means that in 8 hours capacity of sawmill available can manage to process 36.0 m<sup>3</sup> rubberwood logs and produce 10.8 m<sup>3</sup> sawntimber.
- The operation of sawmill proposed , run in two shift from 9a.m. to 5 p.m. and from 5 p.m to 1 a.m. So the consumption of rubberwood logs are 72 m<sup>3</sup>,and 21.6 m<sup>3</sup> sawntimber are produced daily.
- There are about 25 working days per month. Therefore consumption of rubberwood logs are 1,800 m<sup>3</sup> and production of sawntimber are 540 m<sup>3</sup> per month.
- Estimated 5% of rubberwood logs supplied are spoilt, so the amount of sawmill required roughly is 1970 m<sup>3</sup> logs monthly.

### 6.3. Organisational Arrangements :

- There are three important aspects should be given more attention in running the business. Determining that correlation between rubberwood logs suppliers, sawmilling and sawntimber buyers influence the business totally. The relationship among them are as follows :-



- Rubberwood logs should be supplied continuously in order to fulfill the requirement of the capacity of the sawmill as scheduled. At the same time, the supplier must follow the specification stated. In order to achieve the requirement, an agreement should be made between the supplier and the sawmiller for a one-year contract. Monthly orders and schedules from the sawmill should be received by the supplier one month in advance to ensure there is enough time to prepare rubberwood logs.
- The sawmill should process rubberwood logs immediately according to the buyers' description. To ensure both parties benefit, an agreement concerning selling and buying should be made between the sawmiller and the buyer. The buyers should prepare a monthly estimate of requirements and confirm their orders one month in advance.
- As a conclusion, sawmills are permitted to prepare processing arrangements one month earlier after confirmation by the rubberwood logs suppliers and sawntimber buyers.
- Explicitly, the sawmill's operational structure is as shown in the diagram.



- Under manufacturing or production site, the link between them are divided into two ways that is : **horizontal and vertical correlation.**

Direct process flow such as the bendsaw, quality control and dipping are categorised as the vertical connection whereas the sharpener which are related to the bendsaw as the horizontal.

- The management team had to list down all the work process in order to achieve maximum productions.

## **7. THE PROJECT**

- Generally rubberwood sawmill is a factory processing of rubberwood logs into sawntimber. The final product of the manufacturing activities are sawntimber, one of the perishable item, valuable product and highly demand in the market.

### **7.1. Objectives :**

The intention to develop the factory is to achieve the following objectives :

- a) To create new source of income to the corporative through rubberwood sawmilling project by using raw material from the members.
- b) To help the members (small holders) to obtain reasonable price of rubberwood logs without price manipulating.
- c) To set up first strong based for the corporative to involve more seriously in the furniture manufacturing and down stream activities in future.
- d) To fulfill the market demand of sawntimber.

### **7.2. Summary Of Main Components :**

#### **a) Building :**

- The size of the building planned is 18m x 48m x 9m height which will be able to accomodate an office (9m x 12m), a store (6m x 9m), saw sharpener area (6m x 6m) and others for operational area without wall.

b) Bendsaw.

- There are 3 units bendsaw will be fixed including dust blower pipe to the burner area. Two bench will be set up near by each bendsaw for placing rubberwood logs.
- A bendsaw generated by one unit electric motor 25 volt, and one unit electric motor 10 volt for dust blower.

c) Grading Centre.

- Two grading centre will be set up nearby the bendsaw as to check the sawntimber. The equipment used are one cutting machine and one binding machine for each centre.

d) Dipping Area.

- One unit of cistern size 1.8m x 1.8m x 2.4m will be installed for chemical solution.

e) Saw Sharpener Area.

A good quality sawntimber can be produce by using sharp saw. For that purpose, it is very important to check and to make sure the saw is always in good condition. Three machines used for the purpose of sawing are the saw sharper machine, saw balking and saw welding.

f) Forklift.

This equipment are used for :

- Set up logs on bench nearby bendsaw.
- Transporting sawntimber to grading centre.
- Transporting sawntimber bundles to cistern and dipping process.
- Assemble sawntimber bundles at depot
- Lifting bundles into transport / lorry
- Others transporting usage

Only one worker will be require to handle this job at a time.

- Details components and parts of machinery and equipments as shown in appendix E.
- Total cost involve to complete all equipments, machineries and building including earth work are approximately RM328,000.00

### 7.3. Detailed Features :

#### 7.3.1. Raw Materials.

Generally the corporative members are willing to supply raw materials or rubberwood logs to the sawmill. Estimated production rubberwood logs from members are 35, 280 m<sup>3</sup> per year. But at early stage the requirement of sawmill to fulfill the capacity are 21,600 m<sup>3</sup> per year (excluding estimated 5% rejected).

Corporative involved in delivery rubberwood logs to the sawmill, but in case of sawmilling purpose, assuming there are two different parties involved :

- a) Corporative as a rubberwood logs supplier
- b) Corporative as a sawmiller

Sawmill can only accepted rubberwood logs which fulfill the characteristics below :

- a) Diameter of logs equal or more than 20cm. Rubberwood are considered high density when achieve 20cm diameter and also profitable to process for sawntimber.
- b) There is no soft pith. Soft pith are not suitable for furniture.
- c) Rubberwood cambium are not damage. Good tappers will not damage the wood cambium and they just tap the bark of the tree for latex. Sometimes tapper did not handle the tapping knife carefully which will due to the damage of the cambium. The effect is black stripe will formed inside and the part will swell.

Sometimes the characteristics required are difficult to detect and therefore estimated 5% of rubberwood logs will be rejected.

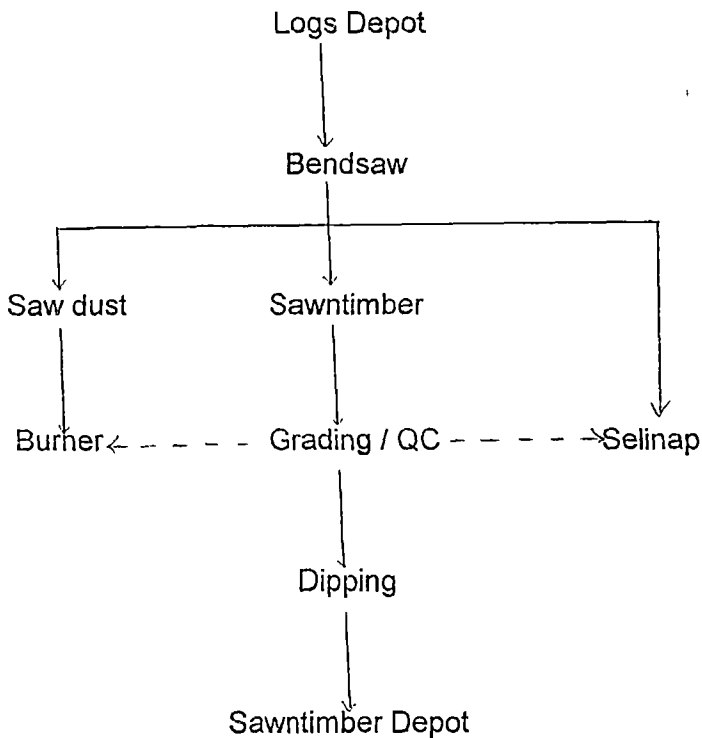
Suppliers had to select only good rubberwood logs and deliver them to the sawmill at maximum of 5 days after cutting.

The price of rubberwood logs at the sawmill are RM80 per m<sup>3</sup>.



### 7.3.2. Processing.

Rubberwood logs delivered are collected at the depot nearby the bendsaw machine and had to be process latest on day seventh after being delivered. The processing activity at the sawmill follow the steps as shown on the diagram below :-



- Before starting sawing process, the manager will decide the size and quantity of sawntimber that should be produce for the day and give the briefing to the bendsaw operator.

a) *Sawing Process* :

- For the purpose of sawing, the rubberwood logs will be placed on the bench nearby a bandsaw. Two operators do their task each bandsaw. By standing at the opposite end of the bench, one operator will push the rubberwood log through the bandsaw and the other will pull off the sawn log which is now known as sawntimber.
- The sawntimber will be stacked up on a platform, meanwhile the 'selinap' (rest of the woods) will be put at another place. Sawdust will be blown through a blower to a burning area. Each platform contains roughly 1 m<sup>3</sup> sawntimber and will be transferred to the grading area by forklift.
- Sawing process is being done according to the number of sizes that have been ordered such as 1" x 1 1/2" x 6', 1" x 1" x 6', 2" x 2" x 6', 4" x 4" x 6' etc.

b) *Grading* :

- On the same day, sawntimbers will be checked by two Quality Controllers at a grading centre. Sawntimber will be examined piece by piece according to the quality standard.

The characteristics of good quality sawntimber are :

- i) There is no black-stripe;
- ii) There is no scars (earring marks);
- iii) Without wood barks

- If it is found that there are black stripe or scars or wood bark, that portion will be cut off and the good part will still remain.
- Sawntimber that have been stack up to roughly 1 m<sup>3</sup> (same size) will be tied in bundle.
- The bundles therefore will be transfered to the dipping area for chemical treatment.

c) *Dipping Process*

- To avoid bacteria infection, sawntimber need to be treat by dipping them in a combination of chemicals :
  - i) P.C.P. Sodium powder;
  - ii) Borax powder;
  - iii) Lindance 20 EC
- A cistern contain of water which was added with sodium powder, borax powder and lindance 20 EC as solution.
- Sawntimber bundle will be soak in the solution in order to absorb chemical for about ten minutes.
- The bundles will then be place in an open air for 8 hours as a drying process, and after that will be transfer to the sawntimber depot.
- The process is now finalized and sawntimber are ready for market.

### 7.3.3 Marketing :

For marketing purpose, an agreement had been signed by the sawmill and the buyers for one year contract. The sawmill should engage a contract with at least four or more manufacturers which operate on different functions. The identification of different manufacturers using sawntimber are :

- a) Kiln Dry factory
- b) Furniture factory
- c) Moulding and Joinery factory

The price of sawntimber are different according to it's sizes as follows :-

<u>Size</u>	<u>RM Per m3</u>
1" x 1"	420
2" x 2"	470
3" x 3"	570
4" x 4"	640

Rate of consumption also different depend on it's size:

<u>Size</u>	<u>% Consumption</u>
1" x 1"	60
2" x 2"	30
3" x 3" and above	10

- The contract done would refer to the two variables above (price and % consumption). Estimated sawmill would supply sawntimber to achieve and fulfill the normal consumption. The average sold price are RM453.00 per m3. (approximately RM450 per m3)

Calculation :

Sawmill productions 6840 m3 per year.

Size	Price(Rm)	% Consumption	Product (m3)	Value (Rm)
1" x 1"	420	60	4100	1,722,000
2" x 2"	470	30	2050	963,500
≥ 3" x 3"	605	10	690	417,450
	Total		<u>6,840</u> =====	<u>3,102,950</u> =====

$$\text{Average price} = \frac{3,102,950}{6,840}$$

$$= \text{RM}453.64$$

Approximately RM450.00

**Note :** The price and consumption percentage above based on actual market today.

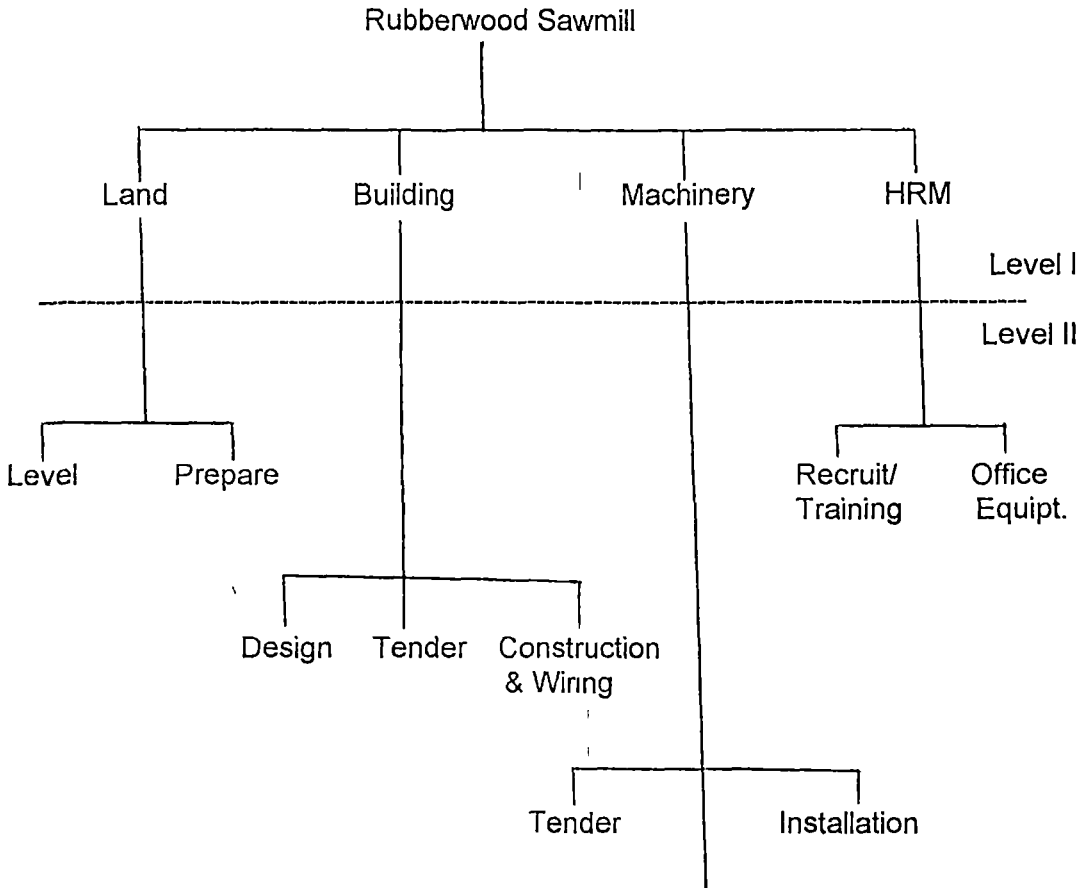
7.3.4. Legality :

- The government rules had to be fulfill as a legal documentation as follows :
  - a) Business Registration of Peninsular Malaysia
  - b) Bendsaw licence - Forestry Department
  - c) Premise Licence - Local Council Authority
  - d) Manufacturing inspection - Labour Ministry

### 7.4. Project Implementation Plan

#### 7.4.1. Work Breakdown Structure :

Breakdown of working structure for rubberwood sawmill are as follows:-



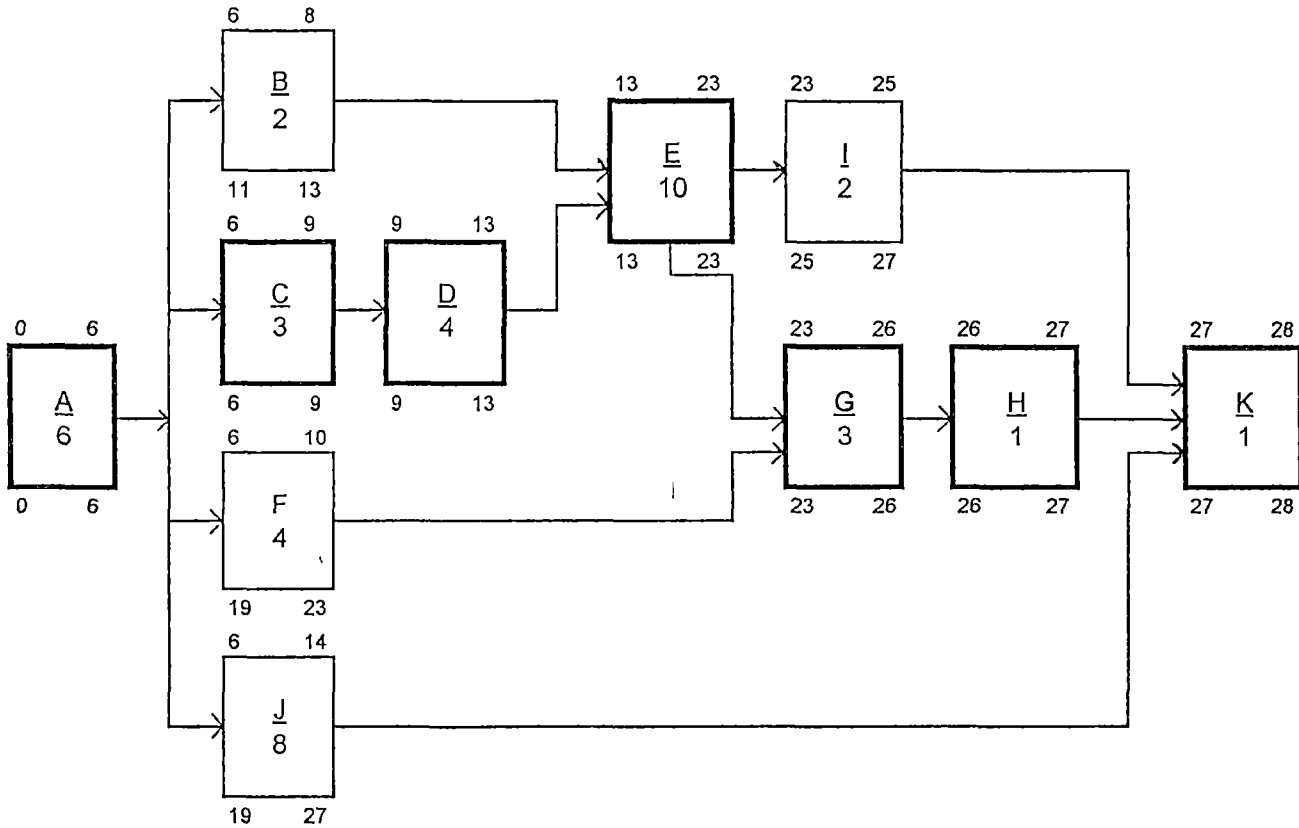
#### Order/Supply

1. Bandsaw/ blower eqp.
2. Sharpener tools.
3. Grading equipment.
4. Forklift.

7.4.2. Activities Lists :

	Activity	Duration (weeks)	Immediate Predecessor
A	Legal acknowledgement / approval	6	-
B	Land preparation	2	A
C	Building design	3	A
D	Tender of building	4	A, C
E	Construction of building and wiring	10	B, D
F	Tender of machinery and supply	4	A
G	Machineries installation	3	E, F
H	Running test of machineries	1	G
I	Office equipment	2	E
J	Recruiting & Training Employees	8	A
K	Launching/Commision of factory	1	H, I, J

7.4.3. Network :



- Maximum duration time : 28 weeks (7 months)

- Management should pay attention on critical path : A, C, D, E, G, H, K

- At the same time management should prepare Gantt Chart and resource estimation for budgeting.

- The rubberwood sawmill project will begin Jun 1998 and the operation estimated is on Januari 1999.



**7.5. Investment Of The Project :**

- Raw material : Rubberwood logs (year 1)
  - Quantity per annum : 21,600 m<sup>3</sup>
  - Price per unit (m<sup>3</sup>) : RM80.00
  - Total cost : RM1,728.00
  - Price increment predicted : 10% per year
  - Payment in term of cash.

- Production : Sawntimber (year 1)
  - Quantity per annum : 6,480 m<sup>3</sup>
  - Price per unit (m<sup>3</sup>) : RM450.00
  - Total Revenue : RM2,916,000
  - Price increment predicted : 8% per year
  - Sales credit : 1 month

- Total Projek Cost :
  - Building : RM 150,000
  - Earth work : RM 5,000
  - Machinery : RM 173,000
  - Total : RM 328,000  
=====

Note : 1) Life span for building : 40 years

2) Depreciation rate for building : 2.5%

3) Life span for machinery : 5 years

4) Depreciation rate for machinery : 20%

i

- The project financed by :

a) Bank loan . RM250,000

b) Corporative Fund : RM 78,000

RM328,000

=====

Note : 1) Interest rate on Bank Loan : 12%

2) Payback term : 5 years

ii

iii

- Other Cost :

	Total/Annum(Rm)	Remarks
1. Permanent staff :		
Salaries	178,000	Yearly increament 3%
2. Contract workers :		
Wages	174,960	Yearly increament 2%
3. Chemicals	12,000	Yearly increase 5%
4. Insurance	2,000	
5. Repair & Maintenance	12,000	Yearly increase Rm2000
6. Communication & Utilities	12,000	
7. Electricity & fuel	36,000	
8. Training	12,000	
9. Others expenditures (stationery, snack & tea, etc)	12,000	
10. Staff facilities	14,400	RM600 x 24 staff

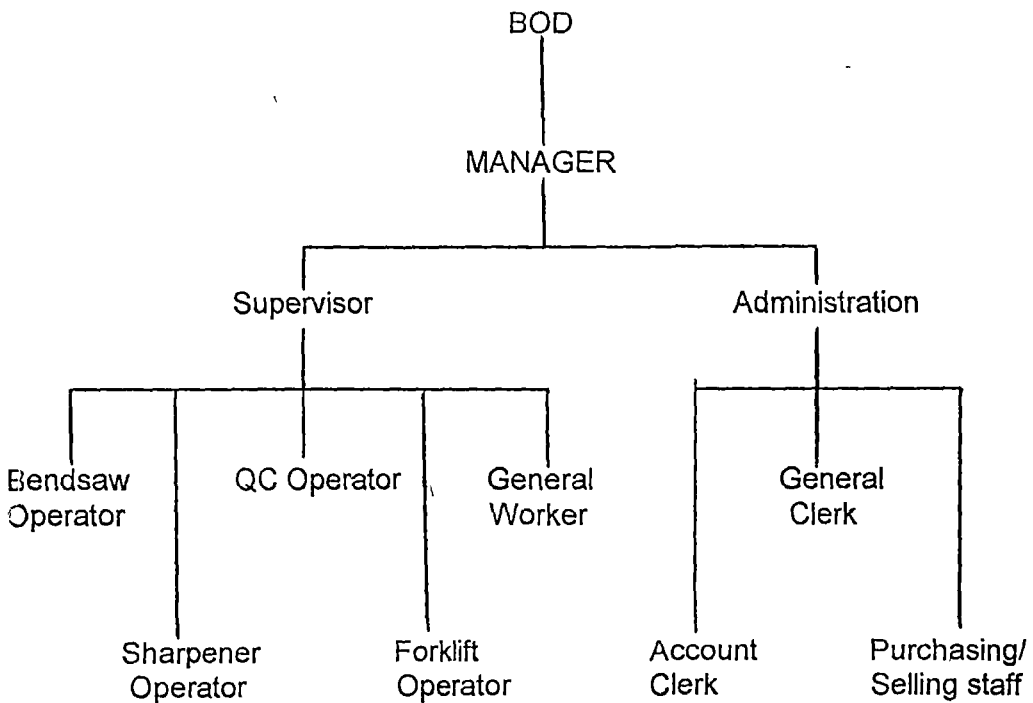
- Project time frame 5 years (1999 - 2003) - operational stage.

- Early stage : Construct of building, machinery installation started on

Jun 1998 - Disember 1998.

## 8. ORGANISATION AND MANAGEMENT

- Corporative Board of Director are the highest post in the organisation which are responsible to the development and the progress of the sawmill. The role of the BOD are to determine the basic prinsiples to accomplish the objectives that has been implemented by the management.
- A manager are appointed to organise the sawmill and accountable to the organisation prosperity based on the BOD's intentions. Management strength and team work will influence the success of the business. At the same time the sawmill should have clear organization structure as below :



A) Manpower :

- The requirement of staff are depend on the working schedule.

On recomendation, the sawmill operation should be done in two shift and the staff strength are as follows :

	Job Task	One shift	Two shift
1	Manager	1	1
2	Supervisor	1	2
3	Bendsaw operator (3 machines)	6	12
4	QC operator (2 station)	4	8
5	Sharpener Operator	1	1
6	Forklift Operator	1	2
7	General Worker	1	1
8	Purchasing / Selling staff	1	1
9	Account Clerk	1	1
10	General Clerk	1	1
	TOTAL	18	30

Bendsaw Operator and Sharpener Operator are contract basis.

B) Working Hours

- Sawmill operation in two shifts :

First shift : 9 am - 5 pm : normal working hours

Second shift : 5 pm - 1 am

- Workers will be divided into two categories :

a) Normal working hours

b) Follow shift

	Job Task	Normal	Shift
1	Manager	/	
2	Supervisor		/
3	Bendsaw Operator		/
4	QC Operator		/
5	Sharpener Operator	/	
6	Forklift Operator		/
7	General Worker	/	
8	Puchasing/Selling Staff	/	
9	Account & General Clerk	/	

- Normal working days are 6 days a week form Monday to Saturday, except public holidays.

C) Salary / Wages

- Sawmill applied two concepts of payment :

- a) Sallery - fixed
- b) Wages - based on commission of production

	Job Task	Salary/month (Rm)	Wages/m3 (Rm)
1	Manager	2000.00	
2	Supervisor	1500.00	
3	Bendsaw Operator		12.00
4	QC Operator	750.00	
5	Sharpener Operator		3.00
6	Forklift Operator	600.00	
7	General Worker	500.00	
8	Purchasing/Selling Staff	800.00	
9	Account Clerk	800.00	
10	General Clerk	600.00	

- Others benefit to the staff are (permanent staff only) :

- a) Bonus
- b) Hospital benefit
- c) Insurance
- d) Yearly salary increament.

D) Training :

- Allocation for training are RM12,000 a year intention to improve technical know how and office management.

9. PRODUCTION AND FINANCIAL RESULTS

a. Investment

The total project costs is RM328,000 and are divided to earth work RM5,000, set up building RM150,000 and machineries RM173,000 (more details in appendix 5). The sources of fund for the project :

- i) Corporative grant - RM78,000
- ii) Bank loan - RM250,000

Bank charges will be 12% interest and repayment schedule is 5 years within operation period. The average cost of capital is 9.15%.

b. Cash Flow

Details of cash flow are as follow in appendix 6, item B to L.

Net cash flow are :

Year 1	Year 2	Year 3	Year 4	Year 5
255,719	273,131	288,636	314,078	457,118

Refer to NPV shown the positive sign, and it is understood that the project are viable.  $R_{min} 938,862$

IRR is  $\frac{84.31}{87.02}\%$  indicate that the project considered worthwhile.



c. **Working Capital.**

Details on the working capital requirement are as follow in appendix 6.

Total working capital required are :

<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
2,327,160	2,528,379	2,752,934	2,979,231	3,250,471

Requirement of working capital supported by the bank loan at 10% interest rate, and corporative loan at 4% interest.

Refer to the ratio of the current assets to sales, in year one 0.67 and year five 0.72, indicate that the project implementing conservative current assets policy.

The surplus current assets under it, enable to cope easily with variations in sales, production plans and procurement time.

d. **Break Even Point Sales**

The calculation in appendix 6 shown the average ratio BEP compare to sales more than 3 times.

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
Sales	2,916,000	3,149,280	3,402,000	3,674,160	3,965,760
BEP Sales	966,592	992,221	1,021,814	1,052,442	1,067,535

The figure above shown the profitability of the project.

Through observation on three main indicators NPV, IRR and BEP, the project are relevant and viable.

MALAYSIA : MACRO ECONOMIC INDICATORS

	1993	1994	1995
Population (million persons)	19.2	19.7	20.1
Labour force (million persons)	7.6	7.8	8.1
Employment (million persons)	7.4	7.6	7.8
Unemployment (million persons)	3	2.9	2.8

NATIONAL PRODUCT	1993		1994		1995	
	Rm billion	% change	Rm billion	% change	Rm billion	% change
Gross Domestic Product (GDP) at 1978 prices	100.6	8.3	109.9	9.2	120.3	9.5
Agriculture forestry and fishing	16.2	4.3	16.0	-1.0	16.4	2.2
Mining and quarrying	8.0	-0.4	8.2	2.5	8.9	8.4
Manufacturing	30.3	12.9	34.8	14.7	39.8	14.5
Construction	4.0	11.2	4.6	14.1	5.3	15.0
Services	44.4	9.8	48.7	9.7	53.2	9.2
Gross National Product (GNP) at current prices	153.5	10.7	176.4	14.9	202.5	14.8
Gross National Product (GNP) at 1978 prices	95.3	8.7	104.0	9.1	113.5	9.2
Aggregate domestic demand	100.2	9.2	113.3	13.1	129.8	14.6
Private expenditure	72.3	7.2	82.3	13.9	93.4	13.4
Private consumption	47.8	5.3	51.1	7.0	57.2	12.0
Private investment	24.8	8.9	31.1	25.5	36.1	16.0
Public expenditure	27.9	15.0	31.0	11.0	36.4	17.6
Public consumption	14.9	10.7	16.4	9.9	18.1	10.6
Public investment	13.1	18.0	14.5	10.6	18.2	25.5
Gross National savings (% of GNP)	32.2		34.5		34.2	

**EXPORT OF RUBBERWOOD BASED  
(MILLION RM/VOLUME '000M3)**

Year	Sawntimber		Furniture		Moulding		MDF	
	M3	RM	M3	RM	M3	RM	M3	RM
1991	71.2	42.7		282.0	83.9	107.00		22.0
1992	38.8	23.2		405.0	92.0	98.6		36.0
1993	27.6	18.6		749.0	89.0	103.2		99.0
1994	45.3	35.9		1,130.0	94.3	146.7		182.0

(Source : Malaysian Timber Industry Board)

PETUNJUK

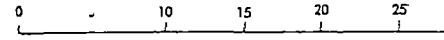
- Lebu Raya Kembar
- Jalan Tunggal Tol
- Lebu Raya Sedang Dibina
- Penanda Jarak
- Jalan Utama
- Jalan Lain
- Jalan Raya Sedang Dibina
- Penanda Jarak
- Jalan Keretapi
- Stesen Keretapi
- Nombor Laluan Persekutuan
- Nombor Laluan Negeri
- Tol
- Sempadan Antarabangsa
- Sempadan Negeri
- Sempadan Jajahan/Bahagian
- Sempadan Daerah
- Ibu Negara
- Ibu Negeri
- Ibu Jajahan/Bahagian/Daerah
- Bandar/Pekan
- Kampung
- Sungai Dua Garisan
- Sungai Satu Garisan
- Tasik/Koiam/Takungan

DNMM 9  
EDISI 1-PP

PETA JALAN RAYA NEGERI  
**NEGERI SEMBILAN**

Appendix 3

Skala 1:350.000



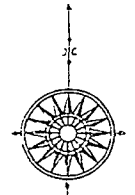
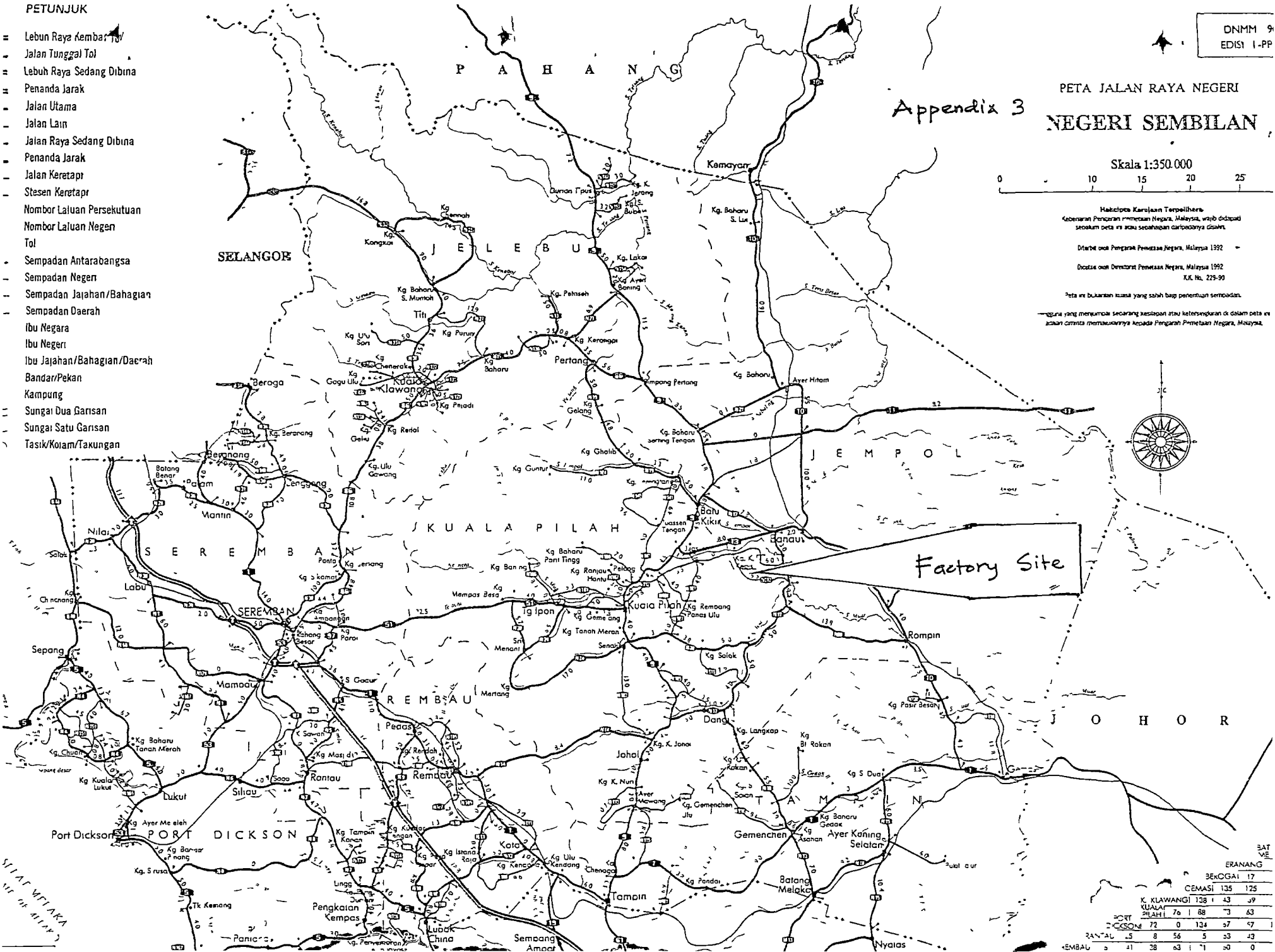
Maklumat Kerajaan Terpeliharakan  
Keberanian Pencarian Pemetaan Negara, Malaysia, wajib dipaparkan  
sebelum peta ini atau sebarang carterainya diterbitkan.

Diterbitkan oleh Pengarah Pemetaan Negara, Malaysia 1992

Dicetak oleh Direktorat Pemetaan Negara, Malaysia 1992  
K.K. No. 225-90

Peta ini bukannya rasmi yang sah bagi penentuan sempadan.

— Negeri yang mempunyai sempadan kesilauan atau ketidaktepatan di dalam peta ini  
adalah diminta memaafkannya kepada Pengarah Pemetaan Negara, Malaysia.

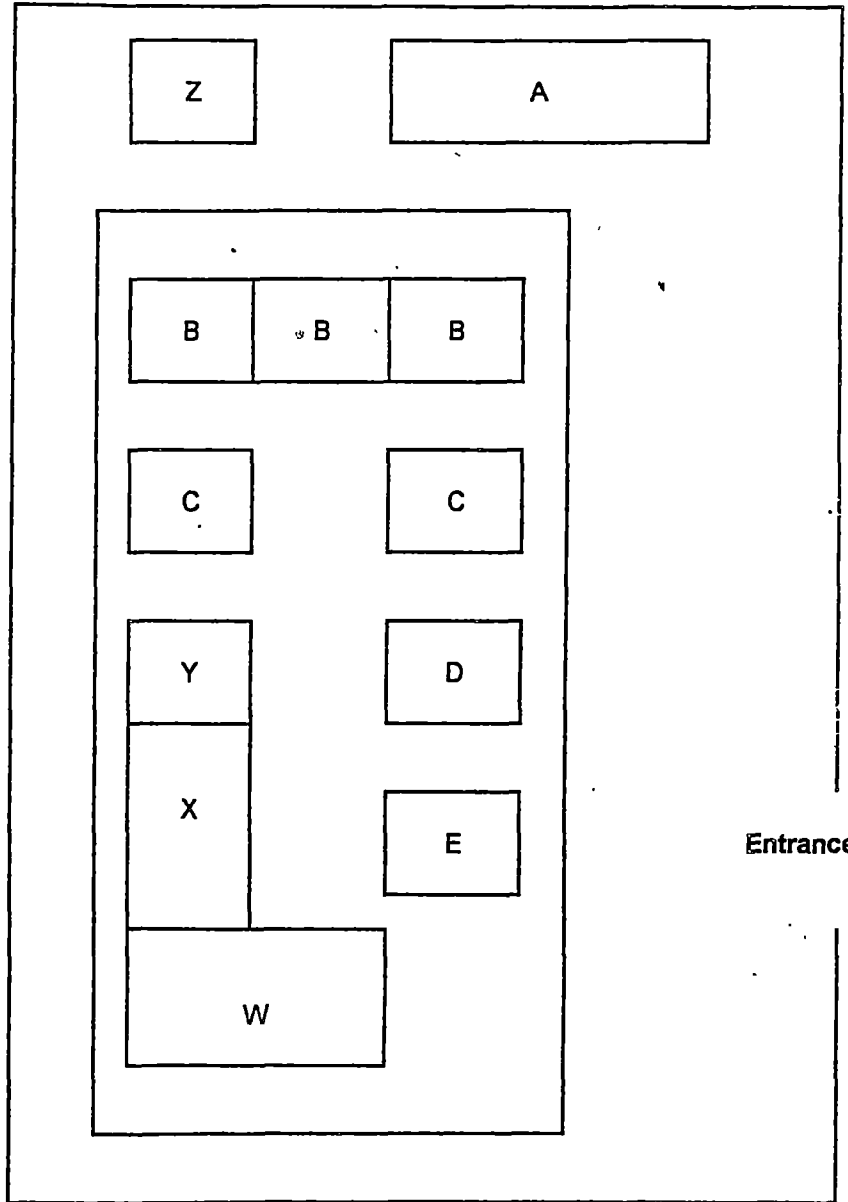


SEKOGAI	17
CEMASI	135 125
K. KUALAWANGI	128 1 43 39
KUALA PILAH	76 1 88 3 63
PORT DICKSON	72 0 124 27 57 1
RANTAU	5 8 56 5 53 43
SEMBAU	21 28 63 1 71 50 0

SILAH MFLIKA  
MFLIKA

### FACTORY MANAGEMENT

- A Logs Depot
- B Bendsaw
- C Grading Centre
- D Cistern / Dipping
- E Sawntimber Depot
- W Office
- X Store
- Y Sharpener
- Z Burner



## DETAILS COMPONENTS AND COSTS

### A. BUILDING

	ITEM	Size / Qty.	RM / Unit	Total RM
1	Building Construct.	18m x 48m	80,000	80,000
2	Electrical Assemble	-	30,000	30,000
3	Office	10m x 13m	10,000	10,000
4	Sharpener Area	6m x 6m	2,000	2,000
5	Store	6m x 10m	3,000	3,000
6	Burner	1	5,000	5,000
7	Bench	10	500	5,000
8	Fence	180m	14,500	14,500
9	Cistern	2mx2mx3m	500	500
	TOTAL			150,000

Remarks : Life span of building 40 years.

### B. EARTH WORK

Cost of clearing and leveling of land - RM5,000

## C. MECHINERIES

	ITEM	Quantity	RM/Unit	Total RM
1	Sawing :			
	a. Bendsaw	3	25,000	75,000
	b. Electric motor 25 volt	3	5,000	15,000
	c. Electric motor 10 volt	3	2,000	6,000
	d. Blower	3	3,000	9,000
	Sub-total			105,000
2	Grading :			
	a. Cutting machine	2	3,000	6,000
	b. Binding machine	2	2,000	4,000
	Sub-total			10,000
3	Sharpener :			
	a. Saw ballancing	1	8,000	8,000
	b. Saw sharpener	1	8,000	8,000
	c. Welding machine	1	2,000	2,000
	Sub-total			18,000
4	Forklift	1	40,000	40,000
	TOTAL			173,000

Remarks : Life span of machinerics 5 years

SI NO	DETAILS	YR 0	YR 1	YR 2	YR 3	YR 4	YR 5
A	PROJECT COST						
		(5,000)					
1	Earth Work	(150,000)					
2	Building	(173,000)					
3	Machines	(328,000)					
	Total Investment						
B	SALES REVENUE						
			6,480	6,480	6,480	6,480	6,480
1	Production (M3)		450	486	525	567	612
2	Price per M3 (RM)		2,916,000	3,149,280	3,402,000	3,374,160	3,965,760
3	Revenue						
C	COST OF PRODUCTION & SALES						
1	Raw material						
	Consumption M3		21,600	21,600	21,600	21,600	21,600
	Price per M3		80	88	97	106	117
	Raw material cost		1,728,000	1,900,800	2,095,200	2,289,600	2,527,200
2	Salaries		178,800	184,164	189,528	194,892	200,256
3	Wages		174,960	178,459	181,958	185,458	188,957
4	Chemicals		12,000	12,600	13,230	13,892	14,586
5	Insurance		2,000	2,000	2,000	2,000	2,000
6	Repair & maintainance		12,000	14,000	16,000	18,000	20,000
7	Communication & Utilites		12,000	12,000	12,000	12,000	12,000
8	Electricity & Fuel		36,000	36,000	36,000	36,000	36,000
9	Training		12,000	12,000	12,000	12,000	12,000
10	Facilities to staff		14,400	14,400	14,400	14,400	14,400
11	Others expenditures		12,000	12,000	12,000	12,000	12,000
12	Interest on working capital loan		218,753	237,667	258,776	280,048	305,544
	Total Cost		2,412,913	2,616,090	2,843,092	3,070,290	3,344,943
D	EARNING BEFORE DEPRECIATION, INTEREST & TAX		503,087	533,190	558,908	603,870	620,817



SI. NO.	DETAILS	YR 0	YR 1	YR 2	YR 3	YR 4	YR 5
E.	DEPRECIATION						
	1. Building (40 yrs) 2.5%		3,750	3,750	3,750	3,750	3,750
	2. Machines (5 yrs) 20%		34,600	34,600	34,600	34,600	34,600
	Total depreciation		38,350	38,350	38,350	38,350	38,350
F.	EBIT		464,737	494,840	520,558	565,520	582,467
G.	INTEREST (Long-Term Loan)		30,000	25,278	19,986	14,065	7,431
H.	EBT		434,737	469,562	500,572	551,456	575,036
I.	TAX (50%)		217,368	234,781	250,286	275,727	287,518
J.	EARNING AFTER TAX		217,369	234,781	250,286	275,728	287,518
K.	SALVAGE VALUE		-	-	-	-	131,250
L.	NET CASH FLOW (E-J+K)	(328,000)	255,719	273,131	288,636	314,078	457,118
M.	NET PRESENT VALUE @ 9.15%	886,742				- -	
N.	INTERNAL RATE OF RETURN (%)	80.41					
O.	WORKING CAPITAL REQUIREMENT						
	1. Raw material		1,728,000	1,900,800	2,095,200	2,298,600	2,527,200
	2. Salary		96,000	98,800	101,846	104,901	108,048
	3. Wages		174,960	178,459	181,958	185,458	188,957
	4. Chemicals		12,000	12,600	13,230	13,892	14,586
	5. Others expenditures		73,200	75,200	77,200	79,200	81,200
	6. Credit sales (1 month)		243,000	262,440	283,500	306,180	330,480
	Total working capital		2,327,160	2,528,379	2,752,934	2,979,231	3,250,471
	7. Loan from cooperative 10% (Interest 4%)		232,716	252,938	275,293	297,923	325,047
	8. Loan from Bank 90% (Interest 10%)		2,094,444	2,275,541	2,477,641	2,681,308	2,925,424

SI NO	DETAILS	YR 0	YR 1	YR 2	YR 3	YR 4	YR 5
	10 Interest on working capital						
	Coop Loan		9,309	10,113	11,012	11,917	13,002
	Bank Loan		209,444	227,554	247,764	268 131	292,542
	Total Interest		218,753	237,667	258,776	280 048	305,544
P	LONG TERM LOAN REPAYMENT						
	1 Loan ballance at 1 Jan		250,000	210,648	166,574	117,211	61,924
	2 Interest rates (%)		12	12	12	12	12
	3 Interest payable		30,000	25,278	19,989	14 065	7,431
	4 Principle repayment:		39,352	44,074	49,363	55 287	61,924
	Total payment		69,352	69,352	69,352	69 352	69,352
Q	VARIABLE COST		2,265,713	2,464,406	2,647,010	2 909 899	3 180,335
R	FIXED COST		215 550	215,312	214,581	213 292	211,372
S	CONTRIBUTION		650,281	684,874	714,990	734 261	785,425
T	P/V Ratio % ( / )		22.3	21.7	21.0	20.8	19.8
U	BEP $\frac{F}{P/V \text{ Ratio}}$ (RM)		966,592	992,221	1,021,814	1 025 442	1,067,535

**"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"**

**INDIA-PHILIPPINES-JAPAN**

**October 20, 1997 to April 23, 1998**

**PROJECT PROPOSAL**

Title of the  
Project Proposal : **NATURAL ORGANIC FERTILIZER  
PRODUCTION PROJECT**

Country : **MYANMAR**

Project Proposal  
Prepared by : **MR. SEIN WIN**

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
**in collaboration with its Member-Organisations in**  
**India, Philippines and Japan**



**INTERNATIONAL COOPERATIVE ALLIANCE**

**Headquarters**

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Geneva, Switzerland

**Regional Office for Asia & the Pacific**

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## SUMMARY AND CONCLUSIONS

Today, Myanmar is endeavouring to boost up the all-round productivity especially in basic agriculture economy, simultaneously attempting to establish an industrial economy.

It is still within ten years that the Myanmar economy has been in the process of transformation from centralized to market economy. So it is apt to assume Myanmar as in teething time in all fields of life. However developments are discernable all-round. The profile of a modern nation is emerging for all to see.

The project area is infact a district town with plenty of general resources. One of the four districts in Bago Division, Taung-ngu District is famous for general resources, such as agriculture, forest, mine and mineral and industry especially for agro-processing. Though small in related square mile, Taung-ngu District ranks second in important for the whole of Myanmar. Set on the main highway from Yangon to Mandalay, infrastructures are well looked after and institutions are relatively sufficient.

With the above mentioned background, reasons and considerations for choice of Taung-ngu area for the project can well be understood.

The project can be classified as not sophisticated while objectives are both simple and easily realizable. Project components are not numerous, costs and project phasing are realistic, providing for uncertainties and inflation. Plant inputs are of domestic origin and of easy availability. Product processing is straight forwards but the marketing will have to spear-head at the beginning. Financially a balance can be struck between equity and Bank loan. Conditions are very much favourable legally, socially and economically.

Established under 1992 Co-operative Societies Law, project implementing agriculture co-operative is well organized and plans are afoot to disseminate technical and management training. Though the head office of the syndicate is in Yangon, all its primaries are in project area. There may be some difficulties in marketing at the initial stage. It is however assured that farmers in general are used to bio-fertilizer, before the chemical fertilizer appeared in the market. So there will not appear any specific technical changes in all aspects as a result of the project. Risks may be very few and far between.

The project is technically feasible and economically viable. It may well serve the immediate interest of the Agricultural Co-operative Syndicate, its member societies in particular and general interest of the farmers not only within the environ of project area, but also of the whole of Myanmar.

## CHAPTER I

### INTRODUCTION

The present project is prepared with the all-round assistance from office of the Htet Arkar Kyaw Agricultural Co-operative Syndicate in consultation with technical papers from Department of Co-operatives. It is intended to be an exercise for participant in (Twelfth ICA- JAPAN Training Course on "Strengthening Management of Agricultural Cooperatives in Asia) as well as authentic document for implementation by Htet Arkar Kyaw Agricultural Cooperative Syndicate. The origin of the proposal for the project lies in a meeting between Htet Arkar Kyaw and foreign associates last year. Practically, the purpose of the project is to meet the immediate requirements of agricultural cooperative society members in particular and the farmers in general. Being the vice-chairman as well as Managing Director of the Board of Director at the Union of Agricultural Cooperative, which is country level, U Khin Maung Aye is also president of Htet Arkar Kyaw Agricultural Cooperative Syndicate in Taung-ngu. From his point of view, the project will be directly addressed to associates from foreign partnership country. He may probably address to those concerned for approving proposal, at the government level. The project is drawn as thoroughly as possible to be bankable as well.

## CHAPTER II

### BACKGROUND

#### **Key features of the political and economic situation**

Myanmar is a country of many nationalities consisting of 135 ethnic groups living in 7 States and 7 Divisions. The government has been placing emphasis on stability, community peace and tranquillity, prevalence of law and order, national reconsolidation, building of a new modern developed nation in accord with an enduring State Constitution. These are the political objectives and efforts are being made to sustain the country.

With regards to the economic situation, Myanmar has practised market oriented economy since 1989. The situation on the whole is a transitional period from socialist aspired to full-fledged market oriented economy on the trend of proper evolution. For the development of economy, participation in terms of technical know-how and investments from sources inside the country and abroad are being invited. Private capital are allowed for acceptance by co-operatives. Myanmar economy is solely based on agriculture. Although service and trade sectors are growing most since the practice of market oriented economic system, agriculture still remain dominant force in the national economy. Agriculture plays significant role in providing overall domestic self sufficiency and boosting of external trade. Besides, long term objectives of industrial policy has been to transform a predominantly agricultural economy into an agro-based industrialized country. The government has promoted and fostered small and manageable industry in the first instance.

#### **Agricultural sector**

Still agricultural sector is the main stay of the economy of the country. In fact, "Development of agriculture as the base and all-round development of other sectors of the economy as well" is being laid down in the first place out of the four economic objectives of the State. Ministry of Agriculture and Irrigation has taken all out efforts to promote production of four main crops, which are cereal crops leading to a surplus in Paddy, Cotton, Sugarcane, Beans and Pulses for domestic consumption and export, besides ensuring sufficient in edible oil and other industrial crops. Myanmar still has a vast potentials of land resources for cultivation and for further expansion of cultivable land. Out of the total area of 167 million acres only about 22.34 million acres (or) 13 percent is under cultivation. It is capable of growing different kinds of crops ranging from equatorial to cool temperate. That is why the fertilizer sufficiency and



availability become important in using high yielding varieties and applying modern technology in cultivation.

## **Income distribution and poverty**

As a result of emphasis placed on agricultural development, the gross domestic product shows substantial increase by 6.1% to Kyat 70.586 billion realizing 97.1 percent of the plan target, compared with Kyat 72.7 billion as of 1996/97 fiscal year. The growth is mainly due to achievement in related economic activity in sectors and substantial rise in investment and all promotion of agricultural product export .

The population of Myanmar is about 45.57 million , 75% of which are living in the rural area. The total labour force is about 17 million , out of which about 55 percent is employed in agricultural sector. Expediting of the sectorial development accounts for the economic growth of the State and on the other hand for the farmers which are majority of the population as well. Thus, this project is aimed at, as far as possible, exporting for earning foreign currency and assuring sustained regional self sufficiency , import substitution. On the other hand, most of the farmers are facing difficulties with chemical fertilizer which are gradually becoming more expensive ; one bag ( 50 Kg ) costs 2000 kyats . Besides, it is not available when the farmers need it and some havenots can not afford to buy it though they wish to apply for a good yield. That means one kind of poverty or suffering . Organic fertilizer do not leave harmful and poisonous residues in the crops and spoil the soil as chemical fertilizer do, it will gradually improve the nutrient of the soil and productivity. Furthermore , they will be sold out at cheaper price of Kyats 500 for a bag (25Kg) by producing on project schedule.

## **Development policies and social objectives**

The government is developing agriculture as the base and other sectors including industrial structures with greater momentum as part of an on going movement. The long term objectives has been to transform into a modern developed agro-based industrialized country. Special projects for the development of nation are being undertaken to uplift the health, education and socio-economy standard of the entire nation. This scheme will more or less make up the morale and morality of the whole nation.

In conformity with above, the main theme of this project is to practice an ideal agriculture, resulting in the following:-

1. to produce safe and nutritious food to enhance the health;
2. to be economically and spiritually beneficial to both the co-operative member farmers , other farmers and society itself;
3. to conserve the soil fertility sustainability;
4. to produce exportable quality and import substitution for domestic consumption;

5. to earn foreign currency by exporting produce and organic fertilizer;
6. to adopt organic farming by using organic fertilizer.

### **Institutions and services**

Project site is located in Taung-ngu, Bago Division where farming and orchard raising is dominant. Taung-ngu has above 190 thousand population and majority of them 16195 households are engaged in farming. It possesses 59936 acres of arable land, out of this, 53337 acres are used for monsoon paddy and winter crops and 6599 acres along the Sittaung river bank and other streams bank are cultivated winter crops while 6875 acres are raised orchard.

There are ( 55 ) primary level Agricultural Cooperatives and ( 1 ) secondary level Agricultural Cooperative syndicate in Taung-ngu Township. These cooperatives have been serving their members from production to marketing through financial assistance, supplying farm inputs like seeds, fertilizer, farm machinery and collectively tapping agricultural loan and repaying the loan collectively etc. In addition, Township Cooperative Department is assisting these cooperatives in education, regulation and organization on management, interaction, negotiation, accounting and other services.

Likewise, Township Agriculture and Irrigation Department is responsible specifically for the development of agriculture. The main function of Agriculture and Irrigation Department constitutes extensive and intensive cultivation to improve production technology and to develop acreage yield, advising soil conservation and to get the adequate water for cultivation. The Village Extension Managers are charged to give farm education, extension activities and training. Aiming to adopt agro-technology, the extension workers pay regular visit and assist the farmers during their regular visits, according to their programme. In these ways, the farmers gain knowledges and technology to promote their cultivation.

### **Ongoing and proposed project**

Htet Arkar Kyaw Farming and General Trading Cooperative Syndicate has designed an Organic Fertilizer Production Project, utilizing side product and waste of agro-processing such as rice bran, fermented waste of alcohol factory, oil cake, husk ash, straw, husks of dried prawn/shrimp, water hyacinth. Effective Microorganism culture(EM) will be used to turn out these into microbial diversity of soils organic fertilizer. These raw materials are freely available. Fermenting microorganisms can breakdown organic matter, thereby releasing complex compounds such as amino acid for plant use. This increases the efficiency of organic matter

for crop production. This in turn, can improve soil quality and health, which enhances the growth, yield and quality of crops.

The project is proposed to be established on a plot of 10 acres, 4 miles away from Taung-ngu beside the Yangon-Mandalay highway. Land tenure permit was issued to this syndicate to establish the proposed organic fertilizer factory. The project consists of eight warehouses, one 3-unit building for main factory, one office building and one staff quarter. All the project estimate cost is 195.21 million kyats and to be built in the year 1998 and will start production not later than December 1998.

Myanma Agriculture and Irrigation Department is undertaking agricultural activities, to increase cropping intensities, transformation of traditional to mechanized agriculture, use of improved seeds, efficient use of agricultural inputs such as fertilizer, pesticides, weedicides and improvement in agro-technique through agricultural extension personnels. They are providing information, education and motivation according to their township programme. Rice is the staple food of Myanmar and therefore for self sufficiency and surplus, double and triple cropping pattern is prescribed. For boosting paddy production, summer paddy cultivation is encouraged by the State by specially providing diesel, quality seed, Agricultural loan, inputs and machines to the farmers who are interested in the programme.

## CHAPTER III

# THE PROJECT AREA, ITS PEOPLE AND DEVELOPMENT POTENTIAL

### Natural Resources

Project site is located in Taung-ngu Township, Bago Division, where farming and orchard raising is the main livelihood of the majority populace. Being on the mid way of Yangon-Mandalay highway, and rail road, it is easily accessible by car or train from up, down and around. It is 175 miles away from Yangon and convenience in communication facilities, leads to decide in choosing site there. Project location is selected considering to minimize capital requirements of operation and distribution as main rationale. Besides that the planning is done on regional, the project will go a long term towards smooth utilizing of resources, especially widely needed raw materials, labour and also aiming to disseminate this fertilizer use by conducting pioneer application on own cooperative farming and then to domestic consumption.

Like other region in lower Myanmar, Bago Division is classified tropical zone and has two distinct dry and wet season. The dry season falls from October to May and the rest is the wet season. During the dry season there is a cold spell from December to February after that hot weather set in. So a year is divided into 3 seasons, Summer, Rainy and Winter. The temperature varies in the magnitude of around 40°C in hot season and 11°C in cold season. Its annual rainfall varies from 80 inches to 100 inches and July is the period of heavy rain, specially in lower Myanmar, where the moisture content of soil and availability of water for cultivation are much better than in upper Myanmar.

As this region is of tropical zone, the area occurs mostly black soil, which contain 40-60 % clay and sticky when wet and very hard when dry. Most of the area is plain and crop suitabilities are rice, sesame, groundnut, sugarcane, pulses, chilli and vegetable and orchard and able to reclaim arable land. It is capable to cultivate all the seasonal crops, getting sufficient rain water in wet season and pumping water from Sittaung and Bago river and streams. Besides, there are two large irrigation systems viz Mazin dam, Tabula dam covering 52000 acres. For the whole country, the irrigation by various means increased to 3.784 million acres forming 16.4 percent of sown area, with 9.19 million acres of multiple cropping meeting 24.3% on multiple cropping irrigated area.

## **The economy and the people**

The agricultural sector in this region is the main income earning sector in this region. Besides, animal and livestock breeding, orchard, forestry and other farming business are common. Most of the populaces are living in rural area and engaged in these businesses. Their social life centered on farming and related agricultural business. Throughout the country, there is no restriction in legal-right for citizen. It has equality and equity regardless of races and gender. Most of the female are engaged in farming but mostly male are head of the family. As agriculture development is a crucial factor for the country, the government has been carrying out with all out effort, that spell the impact on majority.

## **Agriculture and the sustainability of Natural Resource Use**

Myanmar still has a vast potentials of land for cultivation and for further expansion of the cultivable land. Of the total area of (167) million acres only about 22.34 million acres (or) 13 percent is under cultivation. There is also a great deal of potential for extensive cultivation by means of multiple cropping method. It still possesses (2.743) million acres of current fallow land and (19.599) million acres of culturable waste land for further expansion. As of 1996-97, sown area of (31.27) million acres are under various crops on the net area sown and (8.253) million acres are under mixed and multiple cropping. Out of sown acres, sown acreage of selected crops are (14.5) million acres of paddy, (0.25) million acres of wheat, (0.63) million acres of maize, (1.264) million acres of groundnut, (3.1) million acres of sesame, (2.4) million acres of pulses.

So far, agro-ecological condition is still improving. The government is always seeking the development of agriculture and keen on how to strive the balance of environmental conservation. But it has to take a consideration for long term, as the farmers use chemical fertilizer to achieve good yield. Application of more than normal quantity of fertilizer will cause deterioration of the soil and the declining productivity. The more they use, the more the ecology of the soil may be ruined occurring decline of productivity. Consequently, the farmers have to use more fertilizer to get good yield. Besides, rising prices of chemical fertilizer and to produce safe and nutritious food to enhance the health are some of the problem for thought. In these day, some developed countries are gradually switching over to organic fertilizers. Knowing that organic farming is environmentally friendly, it also offers ecological stability and genetic diversity, increase soil fertility and improves the soil productivity and so the government has introduced Japanese Bokashi organic fertilizer in Myanmar through MAS.

In view of the advantages of organic farming, this syndicate has decided to carry out this project, to produce natural organic fertilizer and sale as a part of the services offered by federation to its members and then to distribute widely as a commercial, business. The project will be established on a plot of (10) acres, 4 miles far from Taung-ngu in

Do Thaug village. Project site is selected beside the Yangon-Mandalay highway, and far from the settlement to avoid public annoyance. The buildings for the project consist of 1 three unit-building factory, 1 office, 4 raw material stores, 4 warehouses, 1 staff quarter, 1 two inches tube well water system. Estimate of civil work cost is 71.83 million kyats. (Detail plan of building, the layout of plant and machinery and estimate of civil work are shown in annexes respectively.)

The technology is based on recycling organic energy contained in plant and animal residues through direct utilization of organic molecules by plants. This means that fermenting microorganisms can also breakdown organic matter, thereby releasing complex compounds such as amino acids for plant use. This increases the efficiency of organic matter for crop production.

Effective microorganism (EM) is made up of mixed cultures of microbial species that are found in natural environments. EM has beneficial influences (such as promotes flowering, fruiting and ripening in plant, increases efficiency of organic matter as fertilizer, enhances the photosynthetic capacity of crops and suppresses insects and pests etc.)

This project is designed to produce Bokashi. EM can utilize any type of organic matter, in preparing Bokashi, rice bran is the most important ingredient, it contains excellent nutrients for microorganisms. Requirement of raw materials and estimated cost (at present market price) are shown in annex-11. The content of ingredients to prepare Bokashi are rice bran, oil cake, scraps of dried shrimp, straw, husk ash, expelled sugarcane fibres, residue of alcohol factory. (Ratio and yearly required amount are shown in annex-11). Processing steps are very simple, they are spread on the floor and spray water onto the heap of them till the moisture content is 30% and mix and crush them by crushing machine. Then pour the EM mixture onto the pile gradually but there should be no drainage of excess of water.

## Rural Institution and Infrastructure

Myanma Agriculture Service (MAS) and Irrigation Department have opened offices in each township to promote agriculture. For effective distribution of modern technique, number of deputy assistant supervisors was increased to 6432 persons, each has been supervising in their field according to the township office's programme.

In every Township, Agricultural Mechanization Department (AMD) has stations to assist mechanization. AMD has been rendering extensive tractor services. Besides, according to 1995-96 data, 144 tractors, 2351 power tillers, 263 power threshers, 264 paddy seeders, 2229 weeders, 32 paddy dryers and 2235 water pumps were sold to agriculture by AMD.

Myanma Agricultural Development Bank has been disbursing agricultural loan, loan for purchasing draught cattle, cart and agricultural implements. State Economic Enterprises like Myanma Agricultural Product Trade purchased agricultural products through advance payment system.

Besides, a total of 1023 cooperatives are formed, of this 6208 societies are solely agriculture, while 971 are farming in character. Remaining 229 cooperatives are related one way or other to agriculture. These cooperatives are undertaking in agriculture from production to marketing. There are 30 special cooperative zones in 14 States and Divisions to boost up agriculture.

The State spent 100 million kyats annually on rural development work, besides public contribution of cash, labour and material. Total expenditure is estimated round about 419.5 million kyats for 558 development works.

MAS and cooperative sector are supplying farm inputs like fertilizer, pesticides, insecticides, farm machineries and others. In the field of fertilizer sector, there are three Urea factories being run by State. In spite of its domestic production, it had to be imported. Yearly imported fertilizer is amounted to 300.72 thousand metric tons beside 142.8 thousand metric tons of production in 1995-96. In 1996-97 fiscal year, 160 thousand metric tons was produced in home and 185.2 thousand metric tons was imported. In year 1995-96 total compound fertilizer distributed by cooperative sector was 438 tons and it increase to 647 tons in 1996-97 and 8083 tons in current year.

*organic*

*Local production*  
142,800 MT  
160,000 MT

160,000  
142,800  
302,800

185,200 MT Imported

## CHAPTER IV

### PROJECT RATIONALE AND DESIGN

### CONSIDERATIONS

#### **Project Rationale**

Changes in agriculture have been no less dramatic than development in fertilizer technology. Increasing a large part of demand for fertilizers, has played a large part of production for fertilizers. This situation combined with rapidly increasing prices, needs presence of raw materials, provides an opportunity for Myanmar to establish fertilizer industry to become at least self-sufficient, there-by help improve the import substitution and export for foreign currency. On the other hand, repeated application of chemical fertilizers and insecticides often leaves poisonous residues in crops and deteriorates the fertility of soil. Besides, crops have not become as nutritious and tasty as the ones produced with organic fertilizer. Organic fertilizer do not leave harmful and poisonous deposits in plants as chemical fertilizer do.

Moreover, presently chemical fertilizer costs more than 10 USD for one (50 Kg) bag or 2000 Kyats in retail. Detail calculation shows that it may cost cheaper around 5USD or 1000 Kyats for one (50Kg) bag . Because, they can be turned out from waste and side products which are less expensive and more readily available than ingredients of chemical fertilizer.

In view of these advantages, Htet Arkar Kyaw Agricultural Cooperative Syndicate has set out this project of production and sale of organic fertilizer as a part of services offer to its member societies and other member farmers. It is its general objective. This project is to produce quality organic fertilizer through the use of raw materials like bran, oil cake, scraps of dried fish, husk ash, straw, green crops like water hyacinth, sugarcane fibre, waste from alcohol distillery etc. which are abundantly available throughout the country. According to the production schedule of the project, the plant capacity per annum is 6000 tons in the start up year, followed by 21000 tons at full capacity in later year. Thus, 84 million Kyats ( USD 0.365 million) in start up year to 323.4 million Kyats ( USD 1.406 million) in later year could be saved as import substitution.

#### **Design Consideration**

The project factory is proposed to be established on 10 acres plot of land, 4 miles away from Taung-ngu beside the Yangon-Mandalay highway.



Plant location is selected to minimize operating and distributing costs, especially on the basis of long term availability of raw materials. In producing proposed organic fertilizer, mainly one BACKHUS machine costing USD- 265000 and EM are needed to be imported. All the negotiation and arrangement have been carried out with a foreign company under import first system. One-fourth of the cost of the BACKHUS machine will be paid as down payment and then the company will accept the product on buy back basis as deferred payment for the rest.

Normal production rate of this plant is 21000 tons per annum. In case of necessity, it can shift and be easily operated anywhere by mobile system, as the BACKHUS machine itself is a moveable vehicle. Annually, 21000 tons of fertilizer will meet the requirement for 160,000 acres of farm lands engaged in paddy cultivation. It is expected to coup with the demand of land owners and member farmers in Taung-ngu and its vicinity. The demonstration and training would be conducted by this syndicate.

It is expected that all formalities relating to the project, such as approval of BOD, negotiation with foreign company, submission to Myanmar Investment Committee, proposal for bank loan, procurement and other preparation, project construction work, test running will be completed not later than November 1998. The project may begin operation by December 1998. Continuously marketing, demonstration, training and monitoring will be conducted along as designed schedule. All the working steps are shown in implementation schedule and net work diagram. (annex-8)

After all, the past studies, environmentalists, scientists, nutritionists and agriculturists are recommending the organic farming. In developing countries, organic farming in agriculture is gaining momentum. The choice of technical strategy and technology is to produce fermented microorganisms namely BOKASHI ( Japanese origin ) by using EM which is made up of mixed cultures of microbial species that are found in natural environments worldwide. This kind of production technology is favoured in developing countries where abundance of raw materials is assured. Organic fertilizer has the increasing efficiency of organic matter for crop production and cheaper than the chemical fertilizer. That is why this technology is selected in priority and especially because it will enhance the promotion of self-reliance, development of more domestic projects for common livelihood and encouragement of more agricultural activities to spur economic growth in all aspects.

Htet Arkar Kyaw Agricultural and General Trading Cooperative Syndicate was organized on 29.12.93 with 3 member societies sharing an initial capital of 60 million kyats. Share value is 100000 kyats each. This syndicate is situated in ancient city Taung-ngu, Bago Division and mainly concentrates on agricultural production, trading, exporting and importing. After 4 years of existence, the syndicate has grown sugarcane 270 acres, jute 50 acres, paddy 630 acres and 50 acres of variety of winter crops. Besides, there is virgin land of 1058 acres in adjacent Kywe Pwe village tract. It is

still possible to acquire and utilize more lands around in accordance with the law from Government.

This syndicate is directed and supervised by (9) members of the Board of Directors and assisted by a set of committees, namely, Farming, Timber and Saw Mill, Export and Import, Wholesale and Retail, Audit, Education and Training Committees (Organizational charge is shown in annex-6 ). The board of Directors is headed by Chairman with member Directors each assigned in respective enterprise. Main office is opened in Yangon and one branch office is in Taung-ngu. Although it is still in its initial year of development, there are ( 49 ) full time staffs and ( 11 ) casual staff or work charge. It is planned to fill up the needed (72) employees starting from April 1998.

## CHAPTER V

### THE PROJECT

#### General Description

This project is designed and dedicated to carry out the following objectives :-

- (a) to promote self-reliance, better livelihood and self-sufficiency and to adopt organic farming
- (b) to enhance import substitution and save foreign currency
- (c) to enhance earning foreign currency
- (d) to combat against rising price of chemical fertilizer
- (e) to obtain the smooth and systematic production of basic agriculture
- (f) to sustain optimum level of agricultural production
- (g) to economise raw materials and labour
- (h) to compete in the market at reasonable price by controlling the overhead costs in production and distribution
- (i) to establish the sustained organic fertilizer production heading to development.

This project consists of 3 main parts, production, marketing and financing and cost 195.21 million kyats, breakdown of which are as follow:-

(a) civil work	17.25
(b) plant and machinery	130.80
(c) office, furniture and instruments	2.31
(d) working capital margin	40.74
(e) Interest during construction period	4.11
	<hr/>
	195.21
	<hr/>

#### Detail Features

The proposed project is composed of one factory, one office, 8 warehouses, one staff quarter, one tube well system costing around 71.84 million kyats. The project is to be constructed in 10 months, so far the land is already developed with an access road. The syndicate has already

accumulated 114.25 million kyats for the project. The project can be operational within (11) months and capable of producing 21000 tons annually.

The project total investment cost is 195.21 million kyats. Its main breakdown are one BACKHUS machine 60.98 million kyats. The negotiation with a foreign company, was settled down to pay one fourth of the cost, 15.24 million kyats as down payment and 45.71 million kyats as deferred payment within one year after receipt of machine. It is intended to be financed by a long term loan of 35.25 million kyats from Myanmar Industrial Development Bank at 17.5% interest rate and 66.77 to 122.22 million kyats from Co-operative Bank as annual loan at 20% interest rate. The remaining 114.25 million kyats is the equity of the syndicate. Some of the raw materials like straw, fish meal, EM etc. which are only possible to procure during dry season should be stored for the whole year production.

The proposed project is to produce organic fertilizer with the content of N:P:K ratio (4:1:1) and other micro nutrients. The method of processing is based on mixturing and crushing of raw materials with 30% of water moisture and then fermenting with EM solution.( The plan of buildings, layout of the plant, crushing machine, needed raw materials and a schematic process flow chart are shown in annexes)

The selling price of organic fertilizer (25kg) per bag is around 500 kyats at the starting year. It may not costly, otherwise it may be hard to introduce to the farmers who are reluctant to change. Starting from second year of the production, these may be sold at 525 kyats up to third year and thence at 550 kyats. Cooperatives which are engaged with farming in production and farmers in general are the target buyer inside the country and thirty percent of the production will be exported abroad. It will accrue around 55 million kyats net profit yearly. The borrowed capital will be repaid with interest in 6<sup>th</sup> year of the project life.

## **Project Implementation**

The project life is designed for 10 years starting from December 1998 to 2008/09. All the detail implementation will be undertaken according to the schedule. (Net work diagram for implementation schedule is shown in annex-8.)

## **Cost Estimate**

According to the proposed project, phasing of production is scheduled into three. Test running and start up will be in the first phase. It will accelerate the production momentum gradually in year 2 and 3, then to full capacity in year 4 (The production schedule is shown in annex-19 )

At the beginning, manufacturing cost of per bag is estimated at 641.42 kyats. It is always so , as a rule in initial stage. It will lessen the manufacturing cost to around 530 kyats starting from year 2. Successive

computation are done thoroughly to couple with the rising cost of raw material. ( Estimate of production cost is shown in annex-15 )

## **Financing**

According to calculation estimate of project cost amounted to (195.21) million kyats. For initial investment, this syndicate has accumulated (114.25 ) million kyats to be invested in the project. The remaining long term expenditure is planned to be borrowed from Myanma Industrial Development Bank. A long term loan of (35.25) million kyats at 17.5% interest rate and annual loans of (66.77) million kyats in year 1, (113.1) million kyats in year 2, (117.38) million kyats in year 3, (122.22) million kyats from year 4 to year 10 , at the interest rate of 20% are scheduled for financing. The long term loan will be recovered , serviced and repaid within six years by annual installments starting from year 2. This syndicate has already tied up with the bank for loans required for financing the working capital. Gencrally, bank is flexible in its lending when the borrowers is credit worthy.

## **Procurement**

Procurement of construction materials, machineries, raw materials for processing and resources for operation will be undertaken according to the planned schedule (detail schedule is mentioned with net work diagram).

## CHAPTER VI

### ORGANISATION AND MANAGEMENT

This project is to be directed and supervised by (3) members of BOD, headed by chairman of the syndicate. (organisation chart of the project is shown in annex-7 ). Main division of the responsibilities are broken down into production, marketing and administration.

Chairman and BOD has had informal discussions already with their colleagues and authorised persons from foreign agency. From this discussion, one technician and one skilled labour will accompany together with the crushing machine BACKHUS, which will be also sold at deferred payment. These technicians will be training the local labours as an “ on the job training ” through their work. . .

The staff required for this project is shown in annex-13.

## **CHAPTER VII**

### **AGRICULTURAL DEVELOPMENT, PRODUCTION AND FINANCIAL RESULTS**

Changes in Agriculture has played in large part to be sufficient with increasing demand and producing safe and nutritious food to enhance human health. It is no less dramatic than development in fertilizer technology. Farmers are endeavouring to increase their crops' yield, but they are facing with difficulties such as unavailable to obtain necessity in right time and rising prices of chemical fertilizers. So the organic fertilizer user farmers will gain availability of fertilizer at low price, resulting in good yield and sustainability of soil. These are the impact of the project on farmers.

This project will accrue profits starting from year (2) and get average net profit around about (53) million kyats yearly. In order to promote the production, the Government gives 3 years exemption of tax to investors approved by Myanmar Citizen Investment Committee. Recoupment period of this project is ( 4 ) years and contribution to National Income may be nearly (83.87 ) million kyats per year. So this project is fairly cost effective to carry out.

## CHAPTER VIII

### MARKET PROSPECTS AND PRICES

In the field of fertilizer production, Myanmar has only three urea factories being run by State, yearly production of these factories is around 130 thousand of metric tons while the State distributes around 140 thousand of metric tons. Since the production of Phosphate and Potash is commercially not feasible, they have been imported from other countries. Comparing with the prevailing price of chemical fertilizer which is not less than 1000 kyats for one (25kg) bag, it is more cheaper to cost 550 kyats for one (25kg) bag of organic fertilizer. Such a price is quite so cheap that this organic fertilizer will be selling well and could easily penetrate into the existing market.

As said in chapter (5), BACKHUS crushing machine is worth USD 265000, and one-fourth of the value USD 66250 is to be paid as down payment. The rest three-fourth of the value USD 178750 is to be paid in kind after one year. It may also export well since organic fertilizer are currently calculated to be exported at USD 135 for one metric ton. This project is prospecting to export 30% of the production abroad and 70% is meant for local consumption. Distribution will be implemented on cash as well as credit. After proper negotiation, it is payable after harvest either in cash or in kinds.



## CHAPTER IX

### BENEFITS, RISKS AND SUSTAINABILITY

Other cooperatives and syndicate may secure organic fertilizer at low price. Financially the syndicate will have NPV of around ( 81.82 ) million kyats profit. For agriculture, utilization of organic fertilizer will result in conservation of soil fertility, producing safe and nutritious food, promotion of germination and quality of produces. For the State, it will gain around (16.42 ) million kyats from taxation and ( 83.87 ) million kyats for National Income.

Regarding risks, it is really hard to disseminate a new technique to Myanmar farmers. But the syndicate will conduct “on the job training” as an after sale service, raising pioneer plot and training as well. These will overcome main constraint. As crushing machine is installed with wheeled vehicle, processing can be undertaken anywhere. Besides, needed raw materials are available everywhere in Myanmar. These would justify this project and it is also a sustainable project.

As organic farming is environmental friendly, it would be easy sooner to introduce the organic fertilizer produced by the syndicate. The credit sales may also entice farmers in general. These above facts may be surely incentive for the user farmers and also for whole salers and retailers.

As far as analysing the investment profitability of this project, it results in the following: the net present value (NPV) is positive, benefit cost ratio is ( 1.096 ) and greater than one, break even sales is ( 140.54 ) million kyats in the first year and internal rate of return is ( 22.55 ). For all these, it is identified that there is a strong possibility to implement this project. ( Detail calculation are shown in annexes )

## CHAPTER X

### COMMITMENTS, ISSUES AND FOLLOW-UP ACTIONS

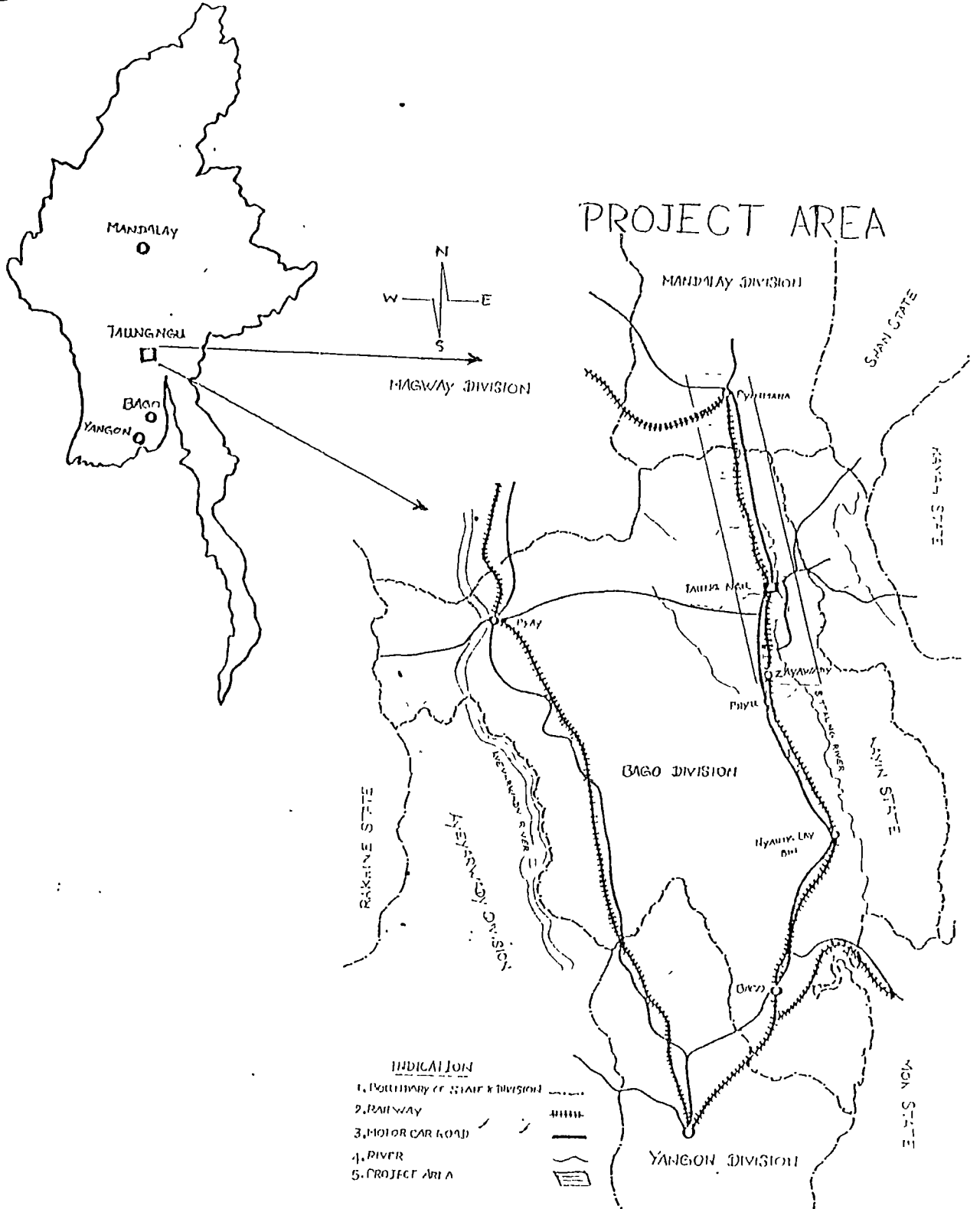
All the hallmarks of this project has been stated in the previous chapters of this proposal about the favourable and outstanding feature. Out of them, using available waste as raw material, remarkable reduction of operation cost in farming, resulting soil conservation, securing domestic demand and either earning foreign currency or producing import substitution are highly commendable. }

Introducing a new technical know-how to Myanmar farmers is a serious constraint, but organic farming is originally friendly to farmers, as they are used to manures and various kinds of compost. In strengthening the scheme, syndicate will undertake to send technician to assist the farmers, deliver out the pamphlets and give training.

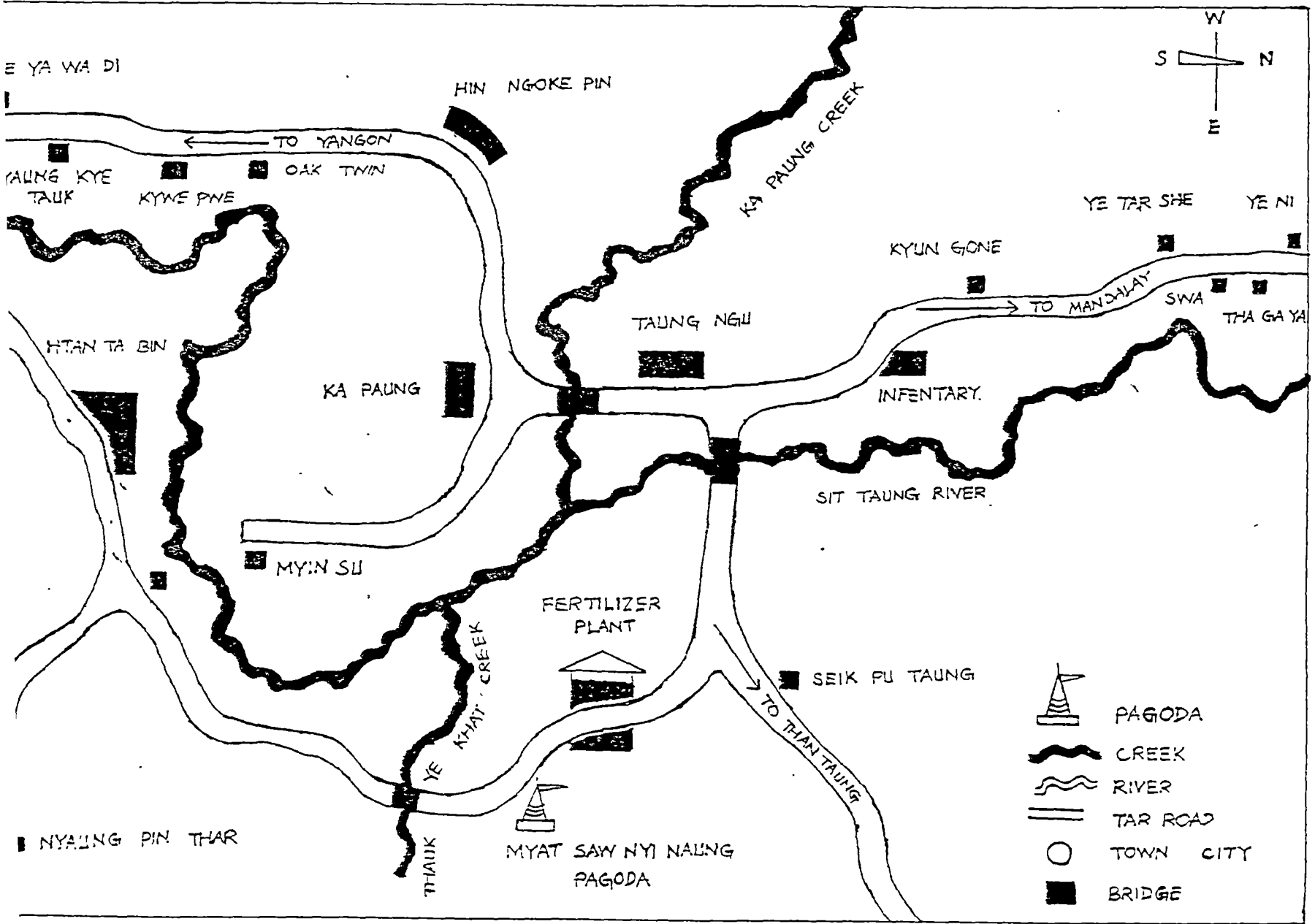
One of the main task of the Government policy direction is "To strive for the better condition of food, clothing, shelter of the people and render necessary assistance to the cooperative and private sector in performing this task". Government's aim is to enrich farmer's life and to assist them free from debts. So MAS has taken priority on the development of the agricultural sector as a base. MAS has been giving special training on preparing Bokashi organic fertilizer to extension workers since 1996. Beside, long term objectives of Myanmar industrial policy has been to transform a predominantly agricultural economy into an agro-based industrialized country. So far as the syndicate's BODs has had discussion with the officials and farmers, this project is justified a beneficial one to carry out.

# MAP OF TAUNGNGU, BAGO DIVISION

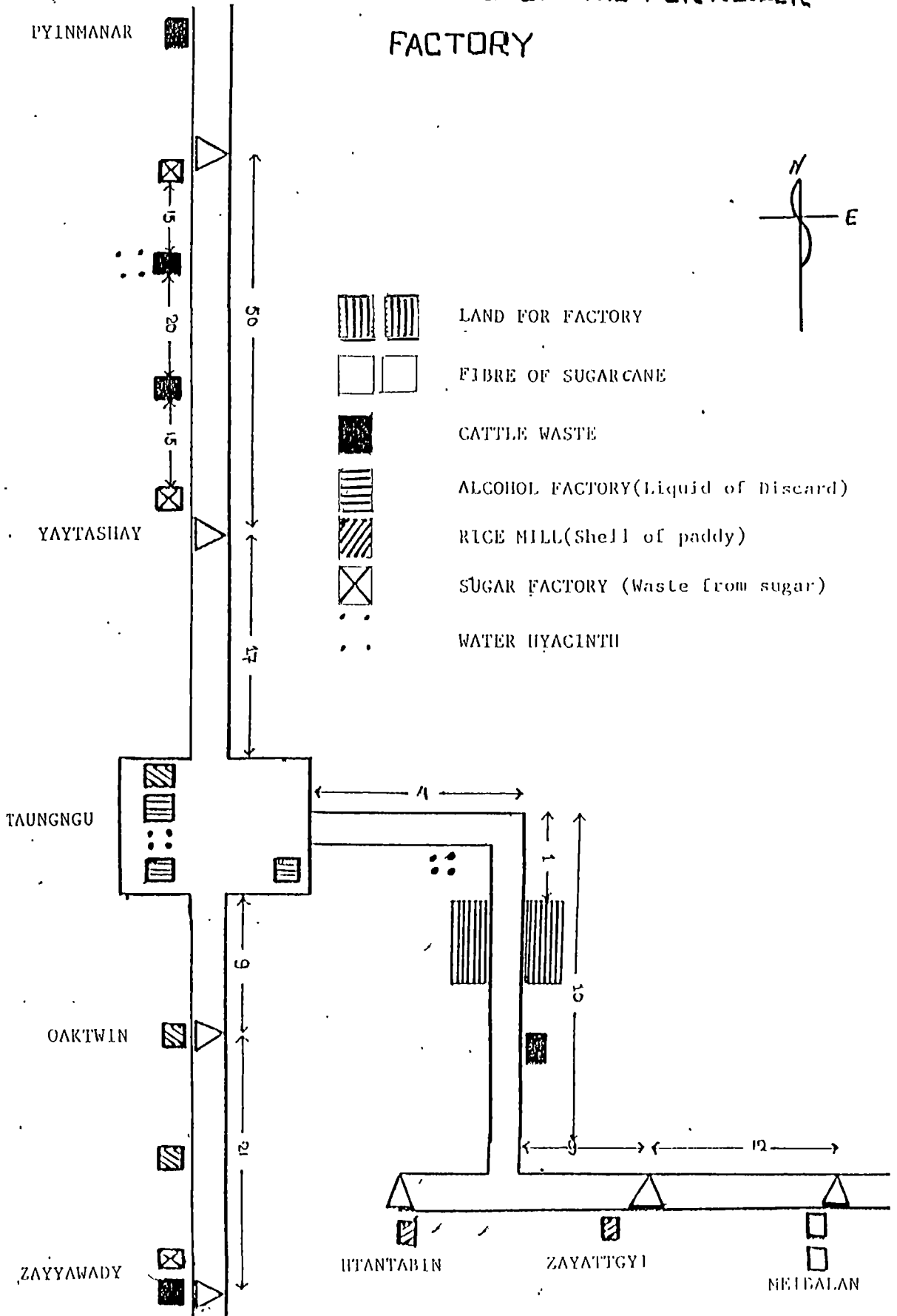
## UNION OF MYANMAR

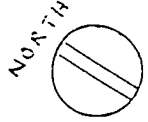
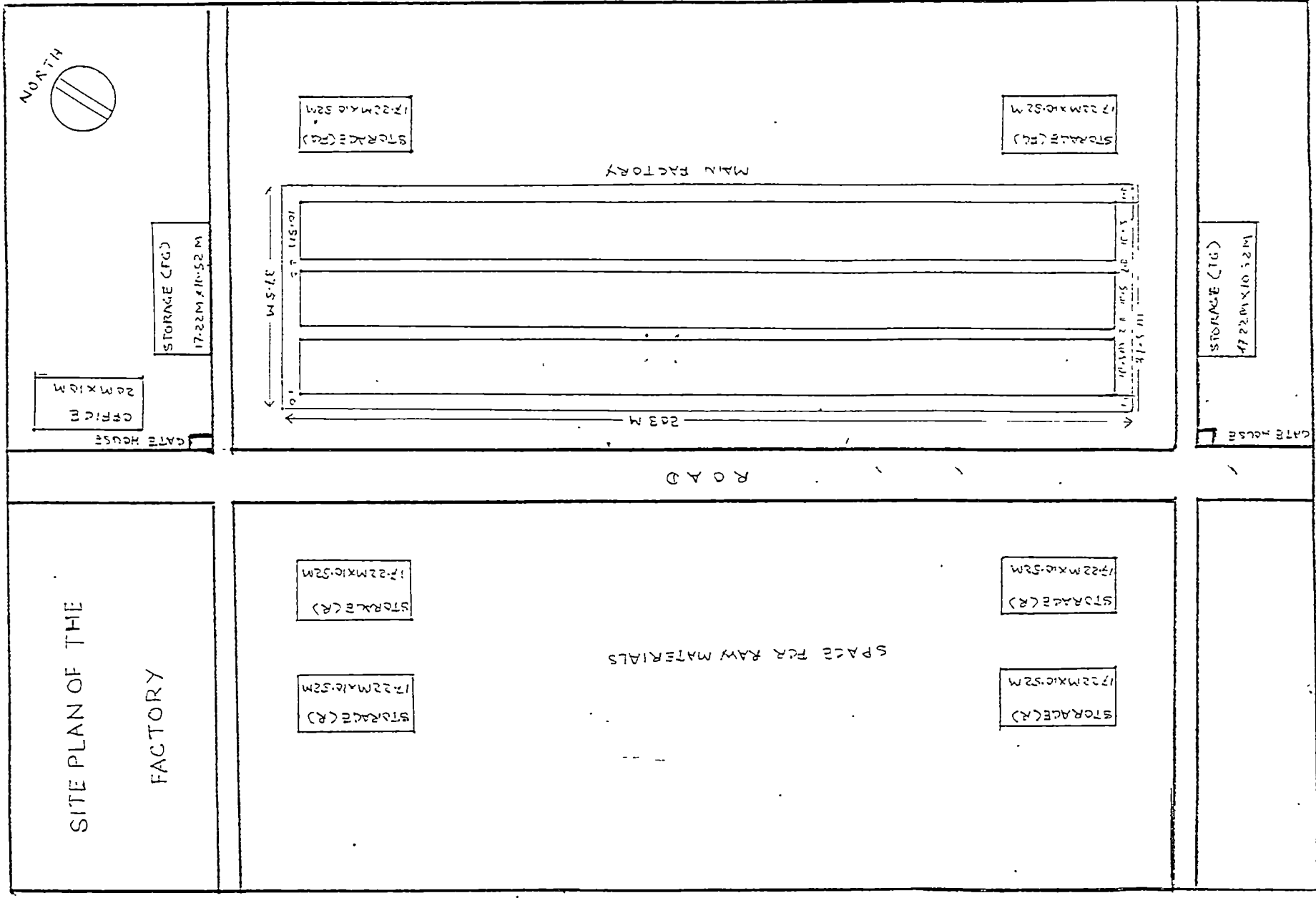


LOCATION MAP OF ORGANIC FERTILIZER PLANT



# THE MAP OF THE DIRECTIONS OF THE FERTILIZER FACTORY





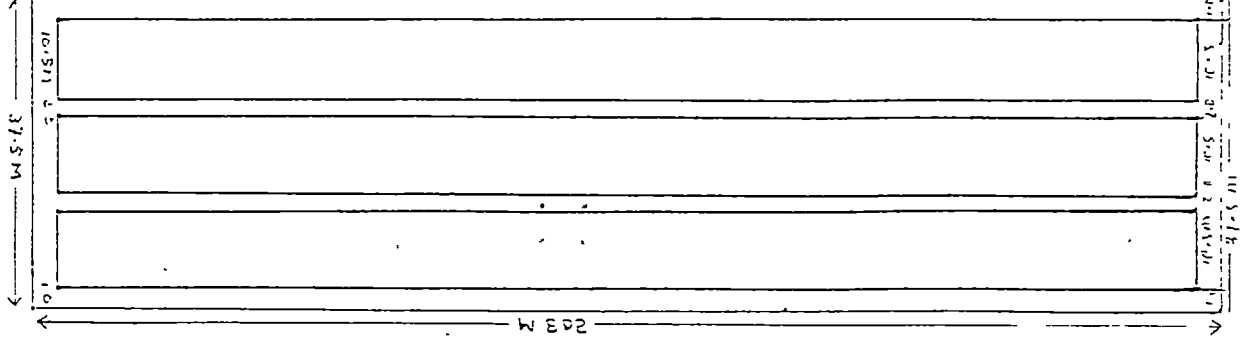
OFFICE  
20 M X 10 M

STORAGE (FG)  
17.22 M X 10.52 M

GATE HOUSE

STORAGE (R)  
17.22 M X 10.52 M

MAIN FACTORY



STORAGE (R)  
17.22 M X 10.52 M

ROAD

SITE PLAN OF THE

FACTORY

STORAGE (R)  
17.22 M X 10.52 M

STORAGE (R)  
17.22 M X 10.52 M

SPACE FOR RAW MATERIALS

STORAGE (R)  
17.22 M X 10.52 M

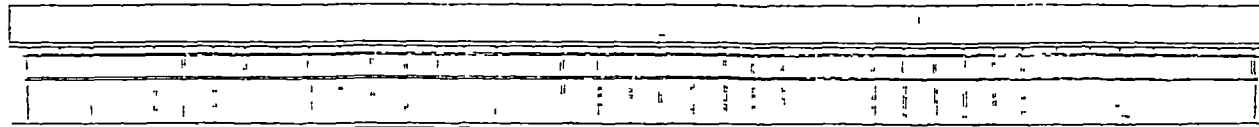
STORAGE (R)  
17.22 M X 10.52 M

STORAGE (IG)  
17.22 M X 10.52 M

GATE HOUSE B

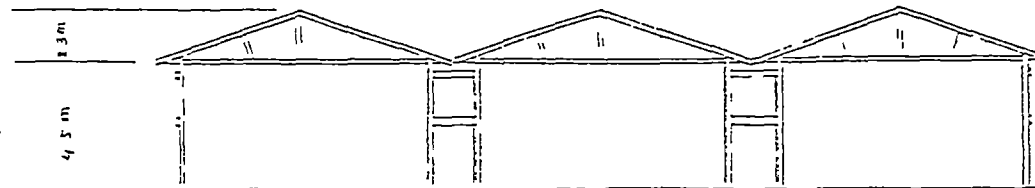
ANNEX - 3

# DESIGN OF THE FERTILIZER FACTORY



Elevation

333



Cross Section.

1 m    10.5 m    2 m    10.5 m    2 m    0.9 m    2 m

COMPOSTING TYPE 5.30

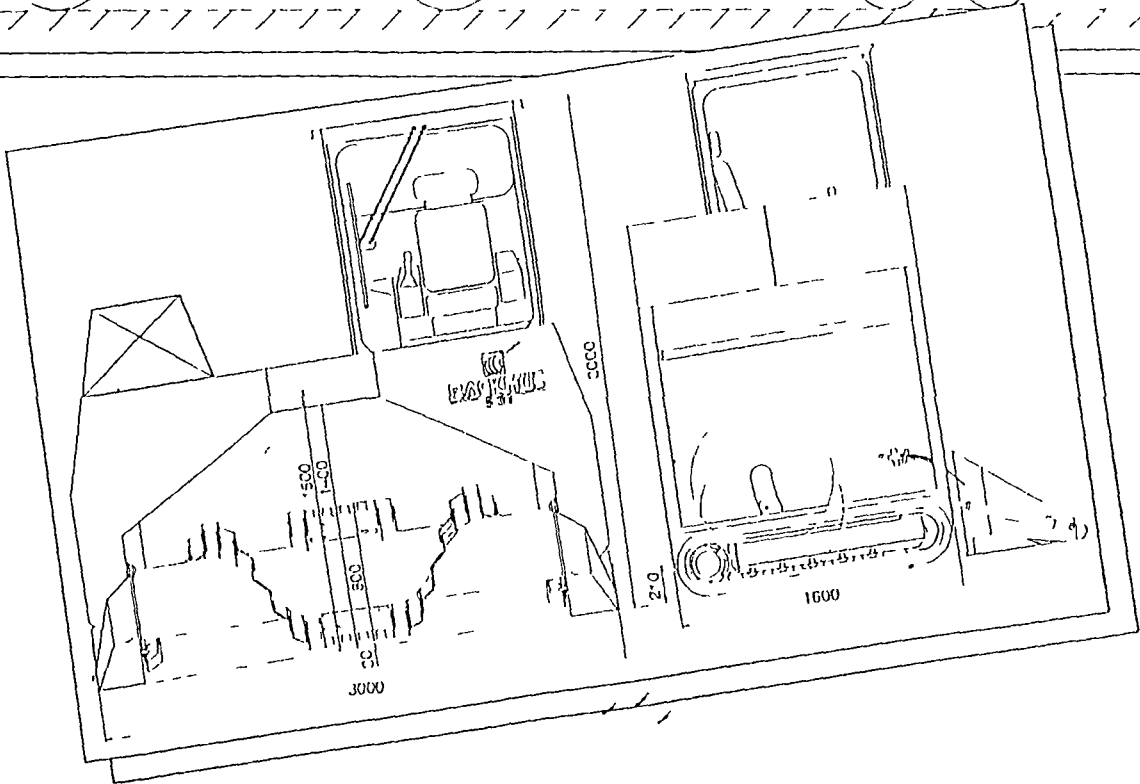
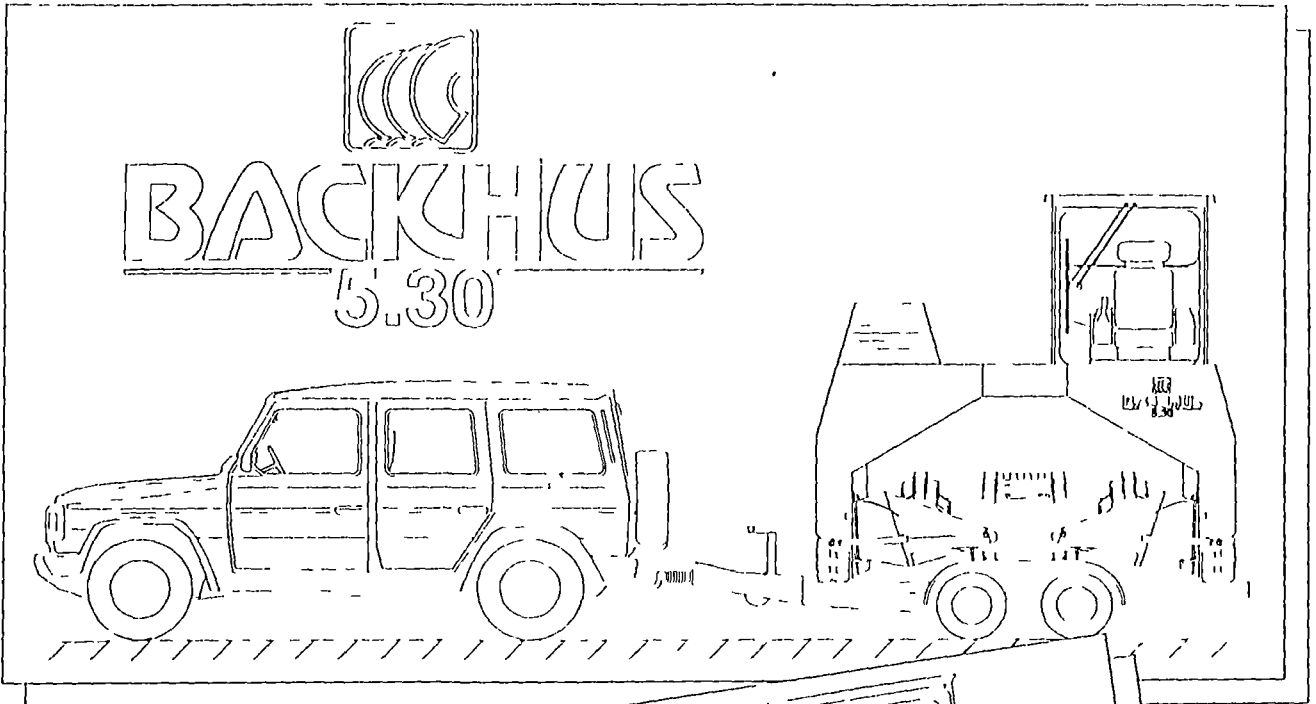


# BACKHUS

Kompost-Technologie

高效率地將工農收及家庭廢棄物  
變成高品質天然有機肥料的環保捍衛戰士

This machine--BACKHUS 5.30-- can change the waste of industry, agriculture, pasturage and home into high quality matural organic fertilizer. It's a guard of environmental protection.







**BACKHUS**  
Kompost-Technologie

## BACKHUS 5.30 行走式高速堆肥機的優越特性

- 一、履帶驅動之自式機器，不必固定工作場所，機動性高。
- 二、工作能力強大：**KOMPOSTMAT 5.30**型處理能力**200~1200**立方公尺/小時  
(原料水分含量為**65%**以上時，其工作能力較低；至**3**星期後，水分含量較低，其工作能力則提高。)
- 三、經濟效益：**1)**不必電力設施，彈索費用低  
**2)**不必製造流程設備，故障率低，維修費用少  
**3)**機器堅固耐用，使用年數長，保養容易。

## CHARACTERISTIC OF BACKHUS 5.30

1. It's a track moving machine, not need fixed working place, high power-driven.
2. High working capability: The working capacity of BACKHUS 5.30 is 200~1200m<sup>3</sup>/hour (When the input material contains moisture upto 65%, it's working capability were be lower. After 3 weeks, when the moisture of the material become lower, then the working capability will be higher.)
3. Economy benefit: 1) No electric installment, lower regular expense.  
2) No manufacture equipment, low fewer trouble, less maintaining expense.  
3) The machine is more stronger and durable, and easy to keep in good repair.

將有機廢棄物變成有機肥料的優點：

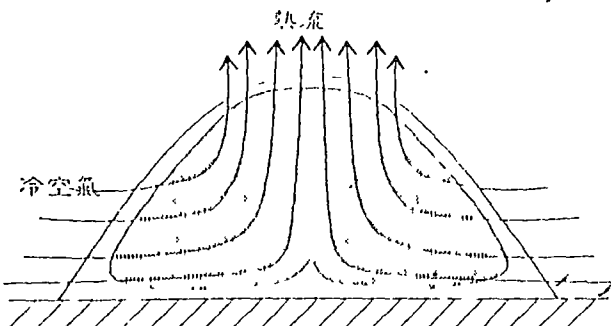
- 一、有機廢棄物資源再利用，減少污染，維持生態平衡。
- 二、有機肥料改善土壤，維護自然生態的平衡。
- 三、達到環保--**3R**的最佳解決方案，並且『點土成金』。

## MERIT TO CHANGE ORGANIC WASTE INTO ORGANIC FERTILIZER

1. Reuse again the organic waste to decrease pollution.
2. Organic fertilizer can improve the sort of soil and keep balance of nature ecosystem.
3. Achieve the best result policy of environmental protection--『3R』.

使用**BACKHUS**翻堆機製作三角形堆肥的優點：

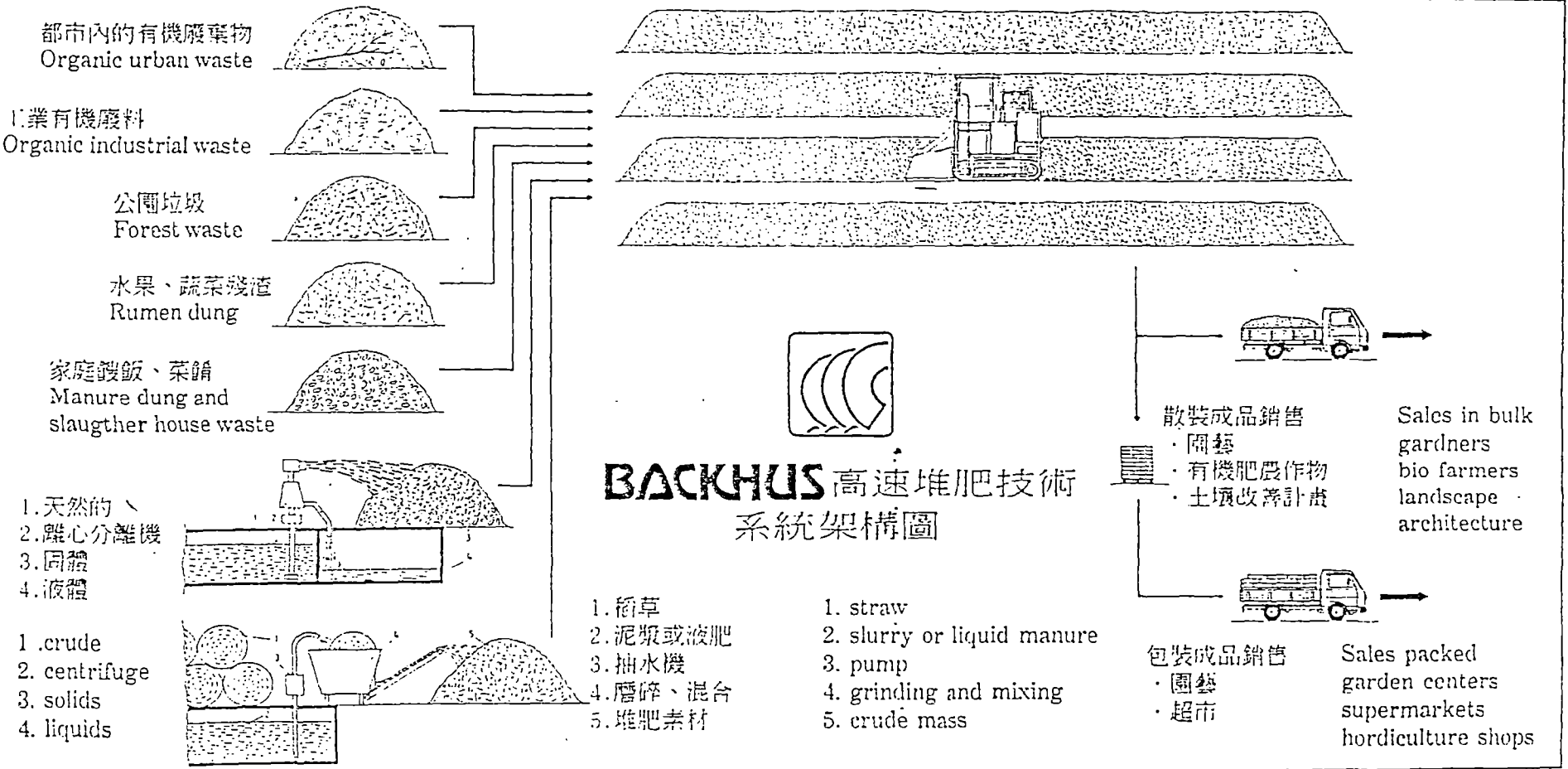
- ①新鮮的冷空氣從側邊吸入，滲入堆型中央，混合形成熱流，發酵溫度超過70°C時造成厭菌效應，形成腐熟。
- ②新鮮空氣貫穿深度可達堆型的中心位置，充分達成好氣菌的自我發酵。
- ③空氣中氧氣能在翻堆中充分與堆肥原料混合。



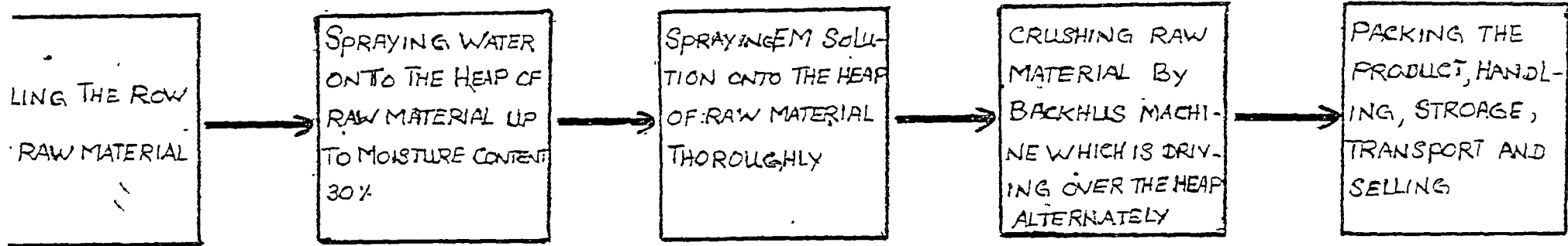
## THE MERIT OF TRIANGLE COMPOST FOR USING BACKHUS MACHINE

- ①The success of composting rises and falls with its inner thermal current and the resulting self-dynamical process in the heap. Rotting temperatures of over 70°C cause the warm air to rise.
  - ②The previously described self dynamical process can only take place in the cross sectional geometry of the triangular heaps. This penetration is enough to reach the core of the heap.
  - ③A stipulation for this is a functioning flow of air / oxygen caused by the thorough mixing and airing when transposed.
- 如以其他方式堆肥則無法達到自我發酵，且會形成厭菌菌、造成惡臭。

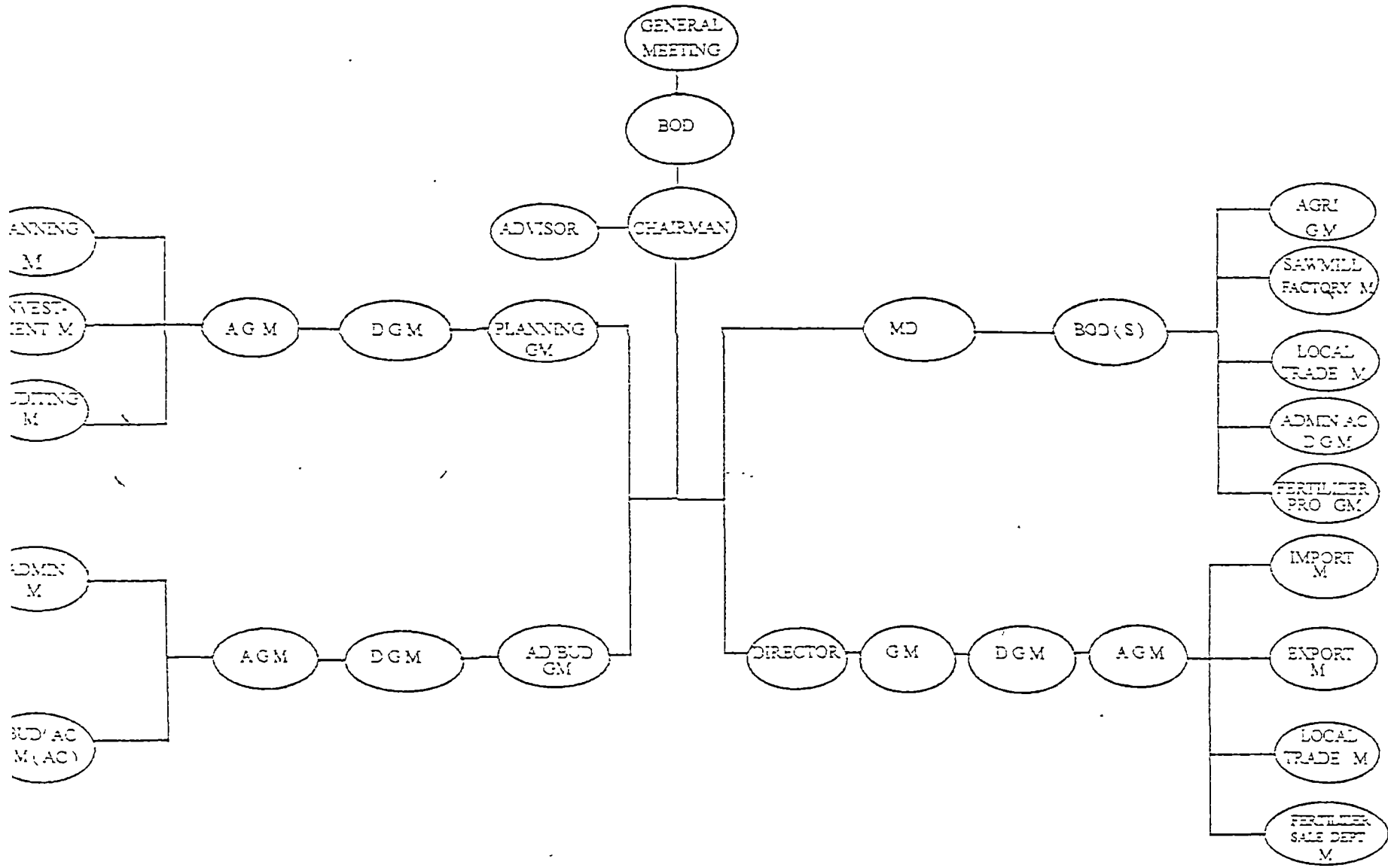
If using other step for composting, will become anaerobic fermenting and cause a bad stench.



# NATURAL ORGANIC FERTILIZER PROCESSING DIAGRAM

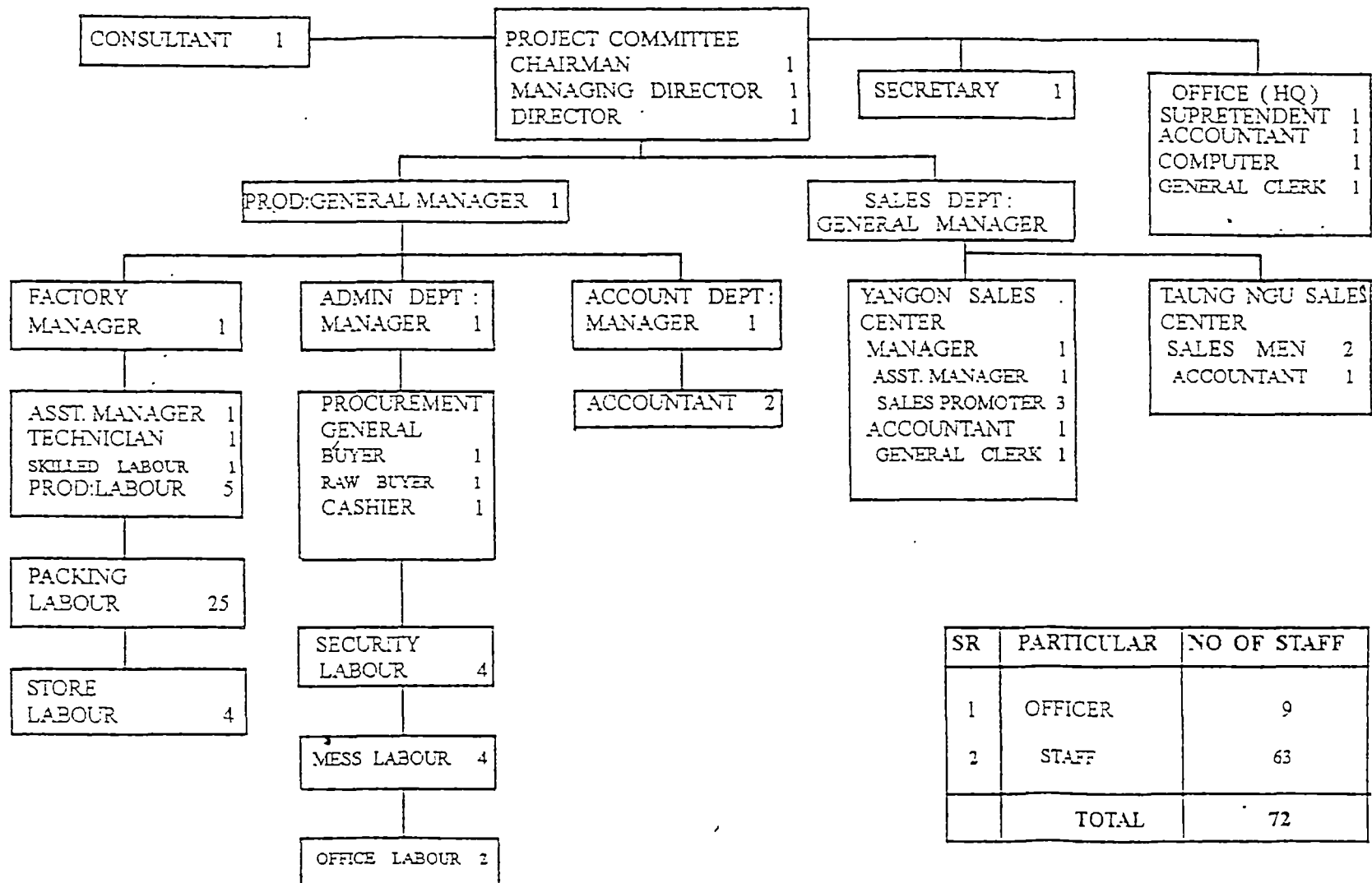


ORGANIZATION CHART FOR HTET ARKAR KYAW AGRICULTURAL AND GENERAL TRADING CO-OPERATIVE SYNDICATE LTD



## NATURAL ORGANIC FERTILIZER PRODUCTION

## ORGANIZATION CHART



SR	PARTICULAR	NO OF STAFF
1	OFFICER	9
2	STAFF	63
	TOTAL	72

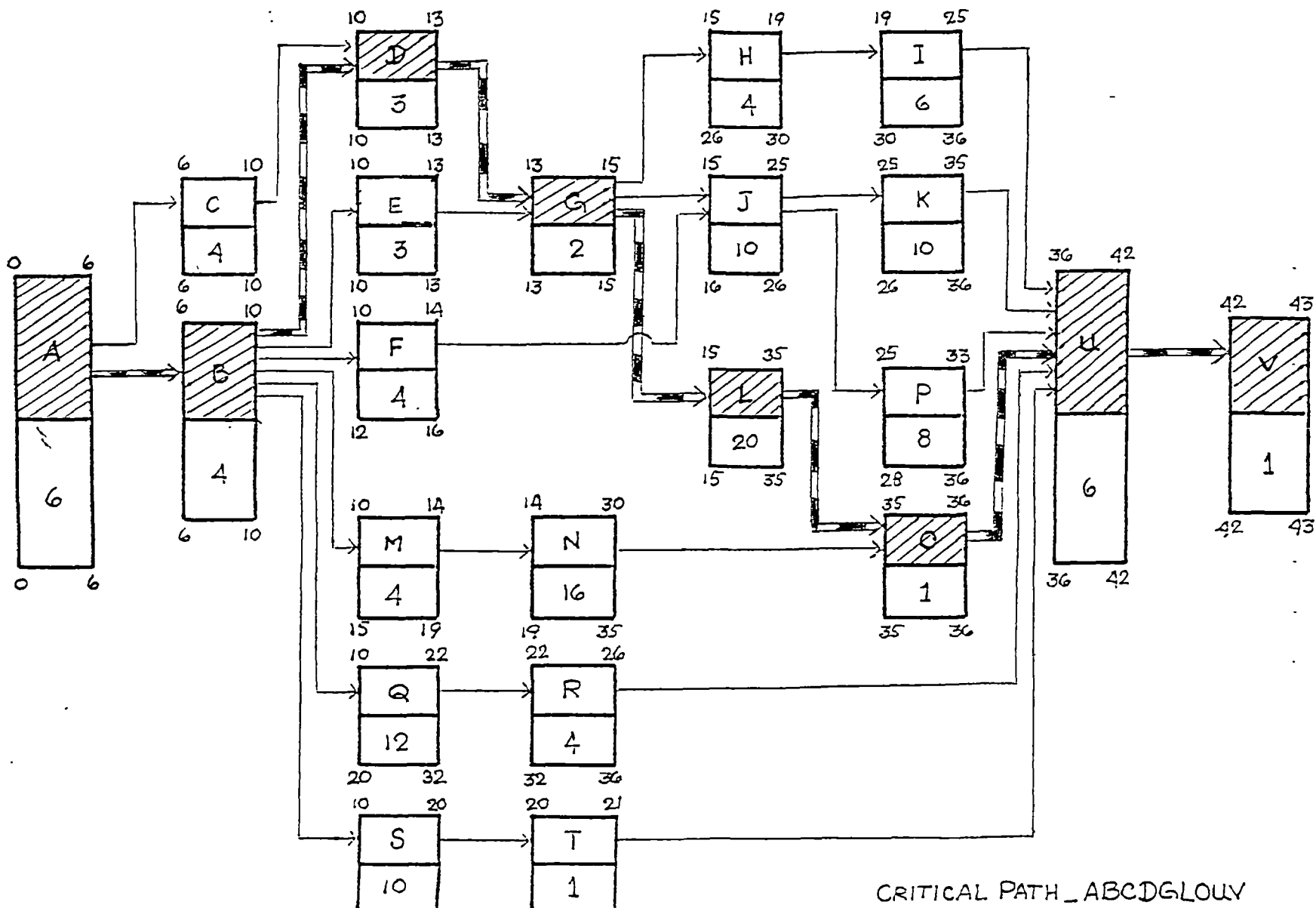
NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT  
IMPLEMENTATION SCHEDULE

ANNEX 5 (A)

CT. CODE	DESCRIPTION	IP	DURATION (WEEKS)	WEEKS												
				4	8	12	16	20	24	28	32	36	40	44		
A	FEASIBILITY STUDY AND DECISION MAKING	-	6	—————												
B	GETTING THE GOVERNMENT'S APPROVAL	A	4		—————											
C	DRAFT DESIGN OF BUILDINGS	A	4		—————											
D	GETTING PERMISSION OF CONSTRUCTION FROM THE REGIONAL AUTHORITIES	B,C	3			—————										
E	PROPOSAL FOR BANK LOAN	B	3			—————										
F	LEVEL AND PREPARE LAND	B	4			—————										
G	AWARD CONTRACT	D,E	2				—————									
H	CONSTRUCTION OF OFFICE	G	4				—————									
I	CONSTRUCTION OF STAFF QUARTER	H	6					—————								
J	CONSTRUCTION OF RAW MATERIAL GODOWN	F,G	10				—————									
K	CONSTRUCTION OF FINISHED GOODS WAREHOUSE	J	10							—————						
L	CONSTRUCTION OF PLANT	G	20				—————									
M	SPECIFY MACHINERY	B	4			—————										
N	PROCUREMENT MACHINERY & EQUIPMENT	M	16				—————									
O	MACHINERY INSTALLATION	L,N	1											—		
P	PURCHASING RAW MATERIAL FOR THREE MONTHS STOCK	J	8							—————						
Q	RECRUITING EMPLOYEES	B	12			—————										
R	TRAINING EMPLOYEES	Q	4					—————								
S	COLLECTING WHOLE SALERS INCLUDING CO-OPERATIVE SOCIETIES	B	10			—————										
T	EDUCATING WHOLESALERS	S	1					—————								
U	TEST RUN	I,K,O P,R,T	6										—————			
V	OPENNING	U	1											—		

P = IMMEDIATE PREDECESSOR

NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT < NET WORK >



## BASIC DATA OF THE PROJECT

- ◆ Investment of the project : 195.21 Million kyats
- ◆ Source of the investment cost :
  - A. Equity 114.25 Million kyats
  - B. Governments loan 35.25 Million kyats
  - C. Deferred payment for the BACKHUS 45.71 Million kyats

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 195.21 Million kyats
- ◆ Project life : 10 Years
- ◆ Construction period of the project : 10 Months (Feb. to Nov. 1998)
- ◆ Land :-60 years lease granted by Government.  
-Only annual land tax / revenue payable minimally.
- ◆ Product cycles / annum : 7 Cycles.
- ◆ Duration period / cycle : 1½ Months
- ◆ Production tons / cycle : 3000 Tons.
- ◆ Plant capacity / annum : 21000 Tons.
- ◆ Backhus machine : ¼ of value is down payment.  
: ¾ of value is deferred payment within one year after by exporting product.

	YR 1	YR 2	YR 3	YR 4 up to YR 10
◆ Sales prices ( Kyats / ton ) (Local):	20000	21000	21000	22000
◆ Sales prices ( Kyats / ton ) (Export):	31050	31050	31050	31050
◆ Raw materials prices ( Kyats/ ton of finished product ):	14369	14369	15180	15603
◆ Packing materials prices ( Kyats/ ton of finished product ):	1800	1890	2000	2100
◆ Labour cost ( Kyats/ ton of finished product ):	830	574	180	180
◆ Water, Power and Fuel ( Kyats/ ton of finished product ):	163	109	109	109
◆ Administrative and Marketing overheads ( Kyats/ ton of finished product ):	3948	1170	1370	1416

- ◆ Depreciation rates :
  - A. Plant , Building And Machine (estimate life 20 years) 5% PA
  - B. Office instrument and Lab apparatus (estimate life 10 years) 10% PA
  - C. Vehicles (estimate life 7 years) 15% PA
- ◆ Income tax rate : 3% to 30% ( First 3 years Tax exemption )



- ◆ Interest:
  - A. Long term loan - 17.5% PA
  - B. Annual loan - 20 % PA
- ◆ Long term loan :
  - A. Grace period of payment - 1 year
  - B. Repayment - 5 years in equal installment.
- ◆ Raw material inventory : 3 cycles' stock.
- ◆ Packing material inventory : 3 months' stock.
- ◆ Sale credit( Maximum P.A) : 500 Tons.
- ◆ Minimum cash balance required : 0.5 Million kyats.
- ◆ Working capital margin : 25% of maximum current assets.
- ◆ Distribution of net surplus (Dividends ) : 30 % of the net annual cash surplus will be distributed to its member societies as dividend , and the remaining 70 % cash surplus will be retained by the society for future expansion/ diversification projects.
- ◆ Prospected amount for export : 30% of the production.

**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT  
PROJECT COST**

KYAT MILLION

SR. NO.	PARTICULAR	COST	
		DETAILS	TOTAL
1	2	3	4
1	<b>CIVIL WORKS</b>		17.25
	1 EARTH WORK	2.70	
	2 RAW MATERIAL GODOWNS	5.76	
	3 FINISHED GOOD GODOWNS	5.76	
	4 STAFF QUARTER	2.40	
	5 GATE BUILDINGS	0.15	
	6 WATER TANK	0.30	
	7 TUBE WELLS	0.18	
2	<b>PLANT AND MACHINERY</b>		130.80
	1 PLANT	53.14	
	2 BACKHUS 5.3	60.95	
	3 OTHER MACHINE AND TOOLS	12.71	
	4 LABORATORY APPARATUS	1.00	
	5 VEHICLES	3.00	
3	<b>OFFICE , FURNITURE AND INSTRUMENT</b>		2.31
	1 OFFICE BUILDING	1.45	
	2 FURNITURES	0.43	
	3 OFFICE INSTRUMENTS	0.43	
4	<b>WORKING CAPITAL MARGIN</b>		40.74
5	<b>INTEREST DURING CONSTRUCTION PERIOD</b>		4.11
<b>TOTAL</b>			195.21

**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT**  
**YEARLY REQUIREMENT OF RAW MATERIALS AND ESTIMATE COST**

KYAT MILLION

SR. NO.	RAW MATERIAL	YR.1			YR.2			YR.3			FROM YR 4 UP TO YR 10 LATER YEAR COST		
		UNIT- PRICE K	QTY MT	TOTAL COST	UNIT- PRICE K	QTY MT	TOTAL COST	UNIT- PRICE K	QTY MT	TOTAL COST	UNIT- PRICE K	QTY MT	TOTAL COST
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	RICE BRAN	17000	604	10.27	17510	2114	37.02	18035	2114	38.13	18576	2114	39.27
2	PEANUT OIL CAKE	50000	302	15.10	51500	1057	54.44	53045	1057	56.07	54636	1057	57.75
3	SESAMUM OIL CAKE	40000	302	12.08	41200	1057	43.55	42436	1057	44.86	43709	1057	46.20
4	COTTON SEED MEAL	18000	755	13.59	18540	2643	49.00	19096	2643	50.47	19669	2643	51.99
5	POWDER OF PRAWN SHELL	40000	302	12.08	41200	1057	43.55	42436	1057	44.86	43709	1057	46.20
6	WATER HYACINTH	4000	303	1.21	4120	1059	4.36	4244	1059	4.49	4371	1059	4.63
7	STRAW	4000	151	0.60	4120	530	2.18	4244	530	2.25	4371	530	2.32
8	HUSK ASH	4000	151	0.60	4120	528	2.18	4244	528	2.24	4371	528	2.31
9	SUGAR CANE FIBRE	3500	151	0.52	3605	528	1.90	3712	528	1.96	3824	528	2.02
10	ALCOHOL WASTE WATER (MOLASES)	1000	1511	1.51	1030	5287	5.45	1061	5287	5.61	1093	5287	5.78
11	EFFECTIVE MICROBES			18.63			66.51			67.84			69.19
	TOTAL			86.21			310.14			318.78			327.66

**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT  
ESTIMATE OF FUEL CONSUMPTION AND COST**

KYAT MILLION

KIND OF FUEL	YR 1		YR 2		YR 3		FROM YR 4 TO YR 10 LATER YEARLY COST	
	QUANTITY (GALLON)	COST	QUANTITY (GALLON)	COST	QUANTITY (GALLON)	COST	QUANTITY (GALLON)	COST
	2	3	4	5	6	7	8	9
DIESEL OIL	4500	0.900	10500	2.210	10500	2.210	10500	2.210
ENGINE OIL	63	0.080	64	0.080	64	0.080	64	0.080
GREASE		0.001		0.003		0.003		0.003
TOTAL		0.981		2.293		2.293		2.293

**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT**  
**MANNING TABLE ( STAFF AND LABOUR ) AND YEARLY SALARIES AND WAGES**

SR. NO.	DEPARTMENT AND CATEGORY OF STAFF	NO. OF STAFF			SALARY AND WAGES		YR 1			YR 2			FROM YR 3 UP TO YR 10		
		FOREIGNER	LOCAL	TOTAL	US\$	KYATS	US\$	KYAT (MILLION)	TOTAL (KYAT (MILLION))	US\$	KYAT (MILLION)	TOTAL (KYAT (MILLION))	US\$	KYAT (MILLION)	TOTAL (KYAT (MILLION))
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	<b>HEAD QUARTER OFFICE</b>		<b>5</b>	<b>5</b>				<b>0.225</b>	<b>0.225</b>		<b>0.540</b>	<b>0.540</b>		<b>0.540</b>	<b>0.540</b>
1	SUPERINTENDENT		1	1		10000		0.050	0.050		0.120	0.120		0.120	0.120
2	ACCOUNTANT		1	1		10000		0.050	0.050		0.120	0.120		0.120	0.120
3	COMPUTER OPERATOR		1	1		8000		0.040	0.040		0.096	0.096		0.096	0.096
4	CLERK		1	1		5000		0.025	0.025		0.060	0.060		0.060	0.060
5	SECRETARY		1	1		12000		0.060	0.060		0.144	0.144		0.144	0.144
	<b>PRODUCTION DEPT.</b>	<b>2</b>	<b>54</b>	<b>56</b>			<b>15000</b>	<b>1.529</b>	<b>4.979</b>	<b>36000</b>	<b>3.780</b>	<b>12.060</b>		<b>3.780</b>	<b>3.780</b>
1	GENERAL MANAGER		1	1		20000		0.100	0.100		0.240	0.240		0.240	0.240
1	<b>FACTORY</b>	<b>2</b>	<b>36</b>	<b>38</b>			<b>15000</b>	<b>0.844</b>	<b>4.294</b>	<b>36000</b>	<b>2.136</b>	<b>10.416</b>		<b>2.136</b>	<b>2.136</b>
1	MANAGER		1	1		15000		0.075	0.075		0.180	0.180		0.180	0.180
2	ASST. MANAGER		1	1		10000		0.050	0.050		0.120	0.120		0.120	0.120
3	TECHNICIAN	1		1	1500		7500		1.725	18000		4.140			
4	SKILLED LABOUR	1		1	1500		7500		1.725	18000		4.140			
5	PACKING LABOUR		17	17		4500		0.382	0.382		0.918	0.918		0.918	0.918
6	WHEEL BARROW LABOUR		8	8		4500		0.180	0.180		0.432	0.432		0.432	0.432
7	FACTORY LABOUR		5	5		4500		0.067	0.067		0.270	0.270		0.270	0.270
8	STORE LABOUR		4	4		4500		0.090	0.090		0.216	0.216		0.216	0.216
2	<b>ADMIN&amp; PROCUREMENT BRANCH</b>		<b>14</b>	<b>14</b>				<b>0.430</b>	<b>0.430</b>		<b>1.032</b>	<b>1.032</b>		<b>1.032</b>	<b>1.032</b>
1	MANAGER		1	1		15000		0.075	0.075		0.180	0.180		0.180	0.180
2	G.PROCUREMENT STAFF		1	1		8000		0.040	0.040		0.096	0.096		0.096	0.096
3	R.PROCUREMENT STAFF		1	1		10000		0.050	0.050		0.120	0.120		0.120	0.120
4	CASHIER		1	1		8000		0.040	0.040		0.096	0.096		0.096	0.096
5	SECURITY STAFF		4	4		4500		0.090	0.090		0.216	0.216		0.216	0.216
6	SANITARY LABOUR		4	4		4500		0.090	0.090		0.216	0.216		0.216	0.216
7	OFFICE HELPER		2	2		4500		0.045	0.045		0.108	0.108		0.108	0.108

SR. NO.	DEPARTMENT AND CATEGORY OF STAFF	NO. OF STAFF			SALARY AND WAGES		YR 1			YR 2			FROM YR 3 UP TO YR 10		
		FOREIGNER	LOCAL	TOTAL	US\$	KYAT	US\$	KYAT (MILLION)	TOTAL (KYAT MILLION)	US\$	KYAT	TOTAL (KYAT MILLION)	US\$	KYAT (MILLION)	TOTAL (KYAT MILLION)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3	<b>ACCOUNT BRANCH</b>		3	3				0.155	0.155		0.372	0.372		0.372	0.372
1	CHIEF ACCOUNTANT		1	1		15000		0.075	0.075		0.180	0.180		0.180	0.180
2	ACCOUNTANT		2	2		8000		0.080	0.080		0.192	0.192		0.192	0.192
3	<b>SALE DEPARTMENT</b>		11	11				0.435	0.435		1.044	1.044		1.044	1.044
1	GENERAL MANAGER		1	1		20000		0.100	0.100		0.240	0.240		0.240	0.240
1	<b>YANGON BRANCH</b>		7	7				0.255	0.255		0.612	0.612		0.612	0.612
1	MANAGER		1	1		15000		0.075	0.075		0.180	0.180		0.180	0.180
2	ASST. MANAGER		1	1		10000		0.050	0.050		0.120	0.120		0.120	0.120
3	ACCOUNTANT		1	1		6000		0.030	0.030		0.072	0.072		0.072	0.072
4	SALE PROMOTER		3	3		5000		0.075	0.075		0.180	0.180		0.180	0.180
5	CLERK		1	1		5000		0.025	0.025		0.060	0.060		0.060	0.060
2	<b>TAUNGNUGU BRANCH.</b>		3	3				0.080	0.080		0.192	0.192		0.192	0.192
1	SALEMAN		2	2		5000		0.050	0.050		0.120	0.120		0.120	0.120
2	ACCOUNTANT		1	1		6000		0.030	0.030		0.072	0.072		0.072	0.072
	<b>TOTAL</b>	2	70	72			15000	2.189	5.639	36000	5.364	13.644		5.364	5.364

**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT  
TRANSPORTATION AND HANDLING CHARGES OF FERTILIZER BAGS  
SHIFTING FROM THE FACTORY TO YANGON DEPOTS**

SR. NO.	PARTICULAR	A/U	YR 1		YR 2		YR 3		FROM YR4 UP TO YR10	
			TRUCK	TRAIN	TRUCK	TRAIN	TRUCK	TRAIN	TRUCK	TRAIN
1	2	3	4	5	6	7	8	9	10	11
1	<b>AMOUNT OF</b>									
	<b>PRODUCT TO SHIFT</b>	TON	750	4500	1750	12250	1750	12250	1750	12250
2	<b>TRANSPORTATION</b>	KYATS								
	<b>CHARGES</b>	MILLION	0.80	1.17	2.80	3.19	3.64	4.14	3.64	4.14
3	<b>HANDLING CHARGES</b>	"								
	1 VEHICAL RENTLE	"								
	CHARGES			0.90		2.45		2.45		2.45
	2 LOADING TO TRUCK *	"								
	3 UNLOADING FROM	"								
	TRUCK TO WAGON									
	(TRAIN)			0.18		0.49		0.49		0.49
	4 UNLOADING FROM	"								
	WAGON TO TRUCK			0.18		0.49		0.49		0.49
	5 UNLOADING FROM	"								
	TRUCK INTO									
	WAREHOUSE		0.03	0.18	0.07	0.49	0.07	0.49	0.07	0.49
	<b>TOTAL</b>	"	0.83	2.61	2.87	7.11	3.71	8.06	3.71	8.06

\* "LOADING TO TRUCK" WILL BE PROVIDED BY FACTORY LABOURS.

## NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT

## ESTIMATE PRODUCTION COST OF ORGANIC FERTILIZER

KYAT MILLION

SR. NO.	ITEM DESCRIPTION	YR-1	YR-2	YR-3	FROM YR-4 UP TO YR-10
1	2	3	4	5	6
1	<b>PRODUCTION COST</b>				
1	RAW MATERIAL	86.21	310.14	318.78	327.66
2	DIRECT LABOUR	4.98	12.06	3.78	3.78
3	INDIRECT PRODUCTION COST	12.37	43.38	45.69	47.79
4	FACTORY COST	103.56	365.58	368.25	379.23
5	PER UNIT PRODUCTION COST OF BAG (KYAT)	431.5	435.21	438.39	451.46
2	<b>OPERATING COST</b>				
1	SALES AND DISTRIBUTING COST	3.59	10.48	12.47	12.77
2	ADMINISTRATIVE AND FINANCIAL OVERHEAD COST	46.79	49.24	51.09	51.46
3	OPERATING COST	50.38	59.72	63.56	64.23
3	<b>TOTAL MANUFACTURING COST</b>	153.94	425.30	431.81	443.46
4	<b>MANUFACTURING COST PER BAG (KYAT)</b>	641.42	506.31	514.06	527.93
5	<b>SELLING PRICE PER BAG</b>				
1	LOCAL (KYAT)	500.00	525.00	525.00	550.00
2	EXPORT (KYAT)	776.25	776.25	776.25	776.25

\* 1 BAG=25 KG



**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT**  
**LONG-TERM LOAN REPAYMENT AND INTEREST SCHEDULE**

KYAT MILLION

YR	LOAN AT THE BEGINNING OF THE YEAR	REPAYMENT OF PRINCIPLE	INTEREST RATE ( IN % )	INTEREST PAYABLE	CLOSING BALANCE OF THE LOAN	REMARK
1	2	3	4	5	6	7
0	35.25	-	17.50	4.11	35.25	INTEREST FOR EIG
						MONTHS ONLY
1	35.25	-	17.50	2.06	35.25	INTEREST FOR FOI
						MONTHS ONLY
2	35.25	7.05	17.50	6.17	28.20	
3	28.20	7.05	17.50	4.94	21.15	
4	21.15	7.05	17.50	3.70	14.10	
5	14.10	7.05	17.50	2.47	7.05	
6	7.05	7.05	17.50	1.23	-	
	TOTAL	35.25		24.68		

**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT  
DEPRECIATION SCHEDULE**

KYAT MILLION

SR. NO.	PARTICULAR	TOTAL COST	ESTIMATE LIFE (YR)	PERCEN- TAGE	DEPRECIATION	
					FROM YR 1 TO YR 7	FROM YR 8 TO YR 10
1	2	3	4	5	6	7
1	PLANT AND BUILDINGS	69.14	20	5	3.46	3.46
2	BACKHUS MACHINE	60.95	20	5	3.05	3.05
3	OTHER MACHINE AND TOOLS	12.71	20	5	0.64	0.64
4	OFFICE FURNITURES	0.43	20	5	0.02	0.02
5	OFFICE INSTRUMENTS	0.43	10	10	0.04	0.04
6	LABORATORY APPARATUS	1.00	10	10	0.10	0.10
7	VEHICLES	3.00	7	15	0.45	
	TOTAL				7.76	7.31





SL.NO	DETAILS	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
5	<b>ADMINISTRATIVE AND</b>										
	<b>FINANCIAL OVERHEAD COST</b>	<b>42.68</b>	<b>49.24</b>	<b>51.09</b>	<b>51.46</b>	<b>50.23</b>	<b>48.99</b>	<b>47.76</b>	<b>47.31</b>	<b>47.31</b>	<b>47.31</b>
1	SALARIES	0.66	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
2	TRAVELLING ALLOWANCE	0.40	0.50	0.60	0.70	0.70	0.70	0.70	0.70	0.70	0.70
3	OUTFIT ALLOWANCE	0.04	0.05	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
4	STATIONARIES	0.05	0.10	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20
5	POST AND TELEGRAPH	0.10	0.20	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
6	SALE PROMOTION EXPENSE	15.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
7	BANK INTEREST										
	( LONG TERM+ ANNUAL )	15.41	28.79	28.42	28.14	26.91	25.67	24.44	24.44	24.44	24.44
8	REPAIRING CHARGES	1.00	2.00	3.50	4.00	4.00	4.00	4.00	4.00	4.00	4.00
9	DEPRECIATION	7.76	7.76	7.76	7.76	7.76	7.76	7.76	7.31	7.31	7.31
10	PREMIUM FOR INSURANCE	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76
11	BUILDING RENTAL	0.50	1.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
6	<b>NET PROFIT BEFORE TAX</b>	<b>-9.94</b>	<b>79.02</b>	<b>72.51</b>	<b>75.56</b>	<b>76.79</b>	<b>78.03</b>	<b>79.26</b>	<b>79.71</b>	<b>79.71</b>	<b>79.71</b>
7	<b>INCOME TAX</b>				<b>22.61</b>	<b>22.98</b>	<b>23.35</b>	<b>23.72</b>	<b>23.86</b>	<b>23.86</b>	<b>23.86</b>
8	<b>NET PROFIT AFTER TAX</b>	<b>-9.94</b>	<b>79.02</b>	<b>72.51</b>	<b>52.95</b>	<b>53.81</b>	<b>54.68</b>	<b>55.54</b>	<b>55.85</b>	<b>55.85</b>	<b>55.85</b>

**NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT  
FINANCIAL ANALYSIS AND CALCULATION**

KYAT MILLION

NO.	PARTICULAR	YEAR 1	YEAR 2	YEAR 3	YEAR 4 UP TO YEAR 10
1	<b>FIXED COST</b>	<b>28.67</b>	<b>36.63</b>	<b>32.56</b>	<b>33.15</b>
1	LABOUR COST	4.98	12.06	3.78	3.78
2	ADMINISTRATION AND MARKETING OVERHEADS	23.69	24.57	28.78	29.73
2	<b>VARIABLE COST</b>	<b>111.34</b>	<b>374.74</b>	<b>386.55</b>	<b>398.49</b>
1	RAW MATERIALS	86.21	310.14	318.78	327.66
2	PACKING MATERIALS	10.80	39.69	42.00	44.10
3	WATER, POWER & FUEL	0.98	2.29	2.29	2.29
4	INTEREST OF WORKING CAPITAL LOAN	13.35	22.62	23.48	24.44
3	<b>TOTAL SALES REVENUE</b>	<b>139.89</b>	<b>504.32</b>	<b>504.32</b>	<b>519.02</b>
	BREAK EVEN SALE	140.54	142.53	139.15	142.89
	BREAK EVEN QUANTITY (TON)	6025	5936	5806	5776

PAY BACK PERIOD = 4 YEARS

NET PRESENT WORTH = (+) 206.19

BENEFIT COST OF RATIO =1.096

## 1. PAY BACK PERIOD

$$\text{PAY BACK PERIOD} = \text{NON PROFIT PERIOD} + \frac{\text{TOTAL INVESTMENT}}{\text{AVERAGE NET PROFIT FOR 9 YEARS}}$$

$$\begin{aligned}\text{PAY BACK PERIOD} &= 1 + \frac{197.27}{58.46} \\ &= 1 + 3.37 \\ &= 4.37 \\ &= 4 \text{ YEARS}\end{aligned}$$

## 2. NET PRESENT WORTH

$$\text{N P W} = \text{TOTAL PRESENT WORTH OF BENEFIT} - \text{TOTAL PRESENT WORTH OF EXPENDITURE}$$

$$\begin{aligned}\text{N P W} &= 2345.11 - 2257.9 \\ &= (+) 87.21\end{aligned}$$

NPW = (+) ACCEPT THE PROJECT BECAUSE IT IS ECONOMICALLY WORTHWHILE

## 3. BENEFIT COST OF RATIO ( BC RATIO )

$$\text{B C RATIO} = \frac{\text{TOTAL PRESENT WORTH OF BENEFIT}}{\text{TOTAL PRESENT WORTH OF EXPENDITURE}}$$

$$\begin{aligned}\text{B C RATIO} &= \frac{2345.11}{2138.92} \\ &= 1.096\end{aligned}$$

1.096 > 1. ACCEPT THE PROJECT BECAUSE IT IS ECONOMICALLY WORTHWHILE.

## BREAK EVEN ANALYSIS

### 4. BREAK EVEN SALE ( B. E. S )

BREAK EVEN SALE FOR YEAR 1 IS AS FOLLOWS :

$$\text{B. E. S} = \frac{\text{FIXED COST}}{\text{CONTRIBUTION SALES}}$$

CONTRIBUTION = SALES - VARIABLE COST

$$\begin{aligned} \text{B. E. S} &= \frac{28.67}{\frac{28.55}{139.89} + \frac{28.67}{0.204}} \\ &= \frac{28.67}{0.204} = 140.54 \end{aligned}$$

BREAK EVEN SALE FOR YEAR 2 IS AS FOLLOWS:-

$$\begin{aligned} \text{B. E. S} &= \frac{36.63}{\frac{129.58}{504.32} + \frac{36.63}{0.257}} \\ &= \frac{36.63}{0.257} = 142.53 \end{aligned}$$

BREAK EVEN SALE FOR YEAR 3 IS AS FOLLOWS:-

$$\begin{aligned} \text{B. E. S} &= \frac{32.56}{\frac{117.77}{504.32} + \frac{32.56}{0.234}} \\ &= \frac{32.56}{0.234} = 139.15 \end{aligned}$$

BREAK EVEN SALE FOR YEAR 4 IS AS FOLLOWS:-

$$\begin{aligned} \text{B. E. S} &= \frac{33.15}{\frac{120.53}{519.02} + \frac{33.15}{0.232}} \\ &= \frac{33.15}{0.232} = 142.89 \end{aligned}$$



## 5.BREAK EVEN QUANTITY (B. E. Q)

BREAK EVEN QUANTITY FOR YEAR 1 IS AS FOLLOWS:-

$$\text{B. E. Q} = \frac{\text{FIXED COST}}{\text{SALES- VARIABLE COST}} \times 6000 \text{ TONS}$$

$$\begin{aligned} \text{B. E. Q} &= \frac{28.67}{139.89 - 111.84} \times 6000 \\ &= \frac{28.67}{28.67} \times 6000 = 6025 \text{ TON} \end{aligned}$$

BREAK EVEN QUANTITY FOR YEAR 2 IS AS FOLLOWS:-

$$\begin{aligned} \text{B. E. Q} &= \frac{36.63}{504.32 - 374.74} \times 21000 \\ &= \frac{36.63}{129.58} \times 21000 = 5936 \text{ TON} \end{aligned}$$

BREAK EVEN QUANTITY FOR YEAR 3 IS AS FOLLOWS:-

$$\begin{aligned} &= \frac{32.56}{504.32 - 386.55} \times 21000 \\ &= \frac{32.56}{117.77} \times 21000 = 5806 \text{ TON} \end{aligned}$$

BREAK EVEN QUANTITY FOR YEAR 4 IS AS FOLLOWS:-

$$\begin{aligned} \text{B. E. Q} &= \frac{33.15}{519.02 - 398.49} \times 21000 \\ &= \frac{33.15}{120.53} \times 21000 = 5776 \text{ TON} \end{aligned}$$

## NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT IRR CALCULATION

YR	CASH FLOW	DISCOUNT OR PRESENT VALUE INTEREST FACTOR	PRESENT VALUE	DISCOUNT OR PRESENT VALUE INTEREST FACTOR	PRESENT VALUE
		@ 14.08%	@ 14.08 %	@ 23%	@ 23%
1	2	3	4 (3X 2)	5	6 (5X 2)
0	(195.21)		(195.21)		
1	-0.12	0.876578	-0.105	0.813008	-0.098
2	47.24	0.768389	36.299	0.660982	31.225
3	85.21	0.673553	57.393	0.537384	45.79
4	64.41	0.590042	38.005	0.436897	28.14
5	64.04	0.517550	33.144	0.355201	22.75
			277.029		190.88
6	63.67	0.453673	28.885	0.288781	18.387
7	63.30	0.397680	25.173	0.234782	14.862
8	63.16	0.348597	22.017	0.190879	12.056
9	63.16	0.305573	19.300	0.155187	9.802
10	63.16	0.267858	16.918	0.126168	7.969

NPV @ 14.08 % = 81.82

$$\text{IRR} = 14.08 + \frac{277.029 - 195.21}{277.029 - 190.88} \times 8.92 = 14.08 + \frac{81.82}{86.149} \times 8.92 = 22.55$$

**NATURAL ORGANIC FERTILIZER PRODUCTION PROFIT  
CONTRIBUTION TO NATIONAL INCOME**

KYAT MILLION

YR	NET PROFIT	DEPRICIATION	WAGES AND SALARIES	TAXES	TOTAL
1	2	3	4	5	6
1		7.76	5.64		13.40
2	79.02	7.76	13.64		100.42
3	72.51	7.76	5.36		85.63
4	52.95	7.76	5.36	22.61	88.68
5	53.81	7.76	5.36	22.98	89.91
6	54.68	7.76	5.36	23.35	91.15
7	55.54	7.76	5.36	23.72	92.38
8	55.85	7.31	5.36	23.86	92.38
9	55.85	7.31	5.36	23.86	92.38
10	55.85	7.31	5.36	23.86	92.38
TOTAL	535.80	76.25	62.16	164.25	838.71
AVERAGE CONTRIBUTION TO NATIONAL INCOME					83.87



NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT

SR.NO	DETAILS	YR-0	YR - 1	YR - 2	YR - 3	YR - 4	YR - 5	YR - 6	YR - 7	YR - 8	YR - 9	YR - 10
D	PROFIT BEFORE DEPRECIATION, INTEREST AND TAX ( PBDIT )		-0.12	92.95	85.21	87.02	87.02	87.02	87.02	87.02	87.02	87.02
E	DEPRECIATION		7.76	7.76	7.76	7.76	7.76	7.76	7.76	7.31	7.31	7.31
F	PROFIT BEFORE INTEREST AND TAX (PBIT)		-7.88	85.19	77.45	79.26	79.26	79.26	79.26	79.71	79.71	79.71
G	INTEREST ON LONG-TERM LOANS		2.06	6.17	4.94	3.70	2.47	1.23				
H	PROFIT BEFORE TAX ( PBT )		-9.94	79.02	72.51	75.56	76.79	78.03	79.26	79.71	79.71	79.71
I	INCOME-TAX RATE (IN % )		*									
J	INCOME-TAX					22.61	22.98	23.35	23.72	23.86	23.86	23.86
K	PROFIT AFTER TAX ( PAT )		-9.94	79.02	72.51	52.95	53.81	54.68	55.54	55.85	55.85	55.85
L	PAYBACK OF DEFERRED PAYMENT FOR MACHINE			45.71								
M	NET CASH FLOW	-195.21	-0.12	47.24	85.21	64.41	64.04	63.67	63.30	63.16	63.16	63.16
N	NET PRESENT VALUE ( NPV )	81.82										

\* INCOME- TAX RATE (IN % ) = 3% TO 30% (DETAIL CALCULATIONS ARE ATTACHED)

NATURAL ORGANIC FERTILIZER PRODUCTION PROJECT

DETAILS	YR 0	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
<b>WORKING CAPITAL REQUIREMENT</b>											
PRODUCTION ( TPA )		6000	21000	21000	21000	21000	21000	21000	21000	21000	21000
RAW MATERIAL COST PER TON OF FINISHED PRODUCT		14369	14369	15180	15603	15603	15603	15603	15603	15603	15603
RAW MATERIAL REQ'T PER ANNUM		86.21	310.14	318.78	327.66	327.66	327.66	327.66	327.66	327.66	327.66
RAW MATERIAL INVENTORY ( 3 CYCLES' STOCK )		86.21	132.92	136.62	140.43	140.43	140.43	140.43	140.43	140.43	140.43
PACKING MATERIAL COST PER TON OF FINISHED PRODUCT		1800	1890	2000	2100	2100	2100	2100	2100	2100	2100
PACKING MATL. REQ'T. PER ANNUM		10.80	39.69	42.00	44.10	44.10	44.10	44.10	44.10	44.10	44.10
PACKING MATERIAL INVENTORY (3 MONTHS' STOCK)		10.80	9.92	10.50	11.03	11.03	11.03	11.03	11.03	11.03	11.03
SALE CREDIT (500 TONS)		10.00	10.50	10.50	11.00	11.00	11.00	11.00	11.00	11.00	11.00
MINIMUM CASH BALANCE REQ'T.		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
TOTAL CURRENT ASSETS		107.51	153.84	158.12	162.96	162.96	162.96	162.96	162.96	162.96	162.96
WORKING CAPITAL MARGIN @ 25% OF MAXIMUM CURRENT ASSETS		40.74	40.74	40.74	40.74	40.74	40.74	40.74	40.74	40.74	40.74
WORKING CAPITAL LOAN REQUIRED		66.77	113.10	117.38	122.22	122.22	122.22	122.22	122.22	122.22	122.22
INTEREST RATE ON WORKING CAPITAL LOAN ( IN % )		20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
INTEREST ON WORKING CAPITAL LOAN		13.35	22.62	23.48	24.44	24.44	24.44	24.44	24.44	24.44	24.44
<b>LONG-TERM LOAN REPAYMENT &amp; INTEREST SCHEDULE</b>											
LOAN AT THE BEGINNING OF YEAR		35.25	35.25	28.20	21.15	14.10	7.05				
INTEREST RATE ( IN % )		17.50	17.50	17.50	17.50	17.50	17.50				
INTEREST PAYABLE		2.06	6.17	4.94	3.70	2.47	1.23				
REPAYMENT OF PRINCIPAL			7.05	7.05	7.05	7.05	7.05				



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TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

**PROJECT PROPOSAL**

Title of the Project Proposal : Rawalpindi/Islamabad Cooperative Dairy Union Limited.

Country : Pakistan.

Project Proposal Prepared by : Muhammad Ashraf.

Funded by the Government of Japan  
(Ministry of Agriculture, Forestry & Fisheries) and  
Executed by the International Cooperative Alliance  
in collaboration with its Member-Organisations in  
India, Philippines and Japan



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The Twelfth ICA-JAPAN Training Course on “Strengthening Management of Agricultural Cooperatives in Asia”, India-Philippines-Japan (October 20, 1997 – April 23, 1998) has given me valuable exposure to broaden my understanding and knowledge of Cooperative Integrated Management in particular and the thrust and essence of the Movement in general.

For the sake of increasing the income of the marginal farmers, to extend socio-economic benefits to the community and to provide fresh and pure milk to the residents of the Rawalpindi and Islamabad Cities, I have attempted to make this project.

I would like to express my sincere gratitude to Dr. Daman Parkash, Project Director and the staff of the ICA as well as Prof. Krishnamurti and Faculties of IRMA and VAMNICOM who imparted us valuable, informative and cordial assistance to polish our skill and knowledge.

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Above all, I am grateful to Almighty “ALLAH” who is gracious, merciful and kind to the human beings.

**LAHORE, PAKISTAN:  
February in 1998.**

**MUHAMMAD ASHRAF.**

## **CHAPTER-I:**

### **SUMMARY**

- 1.1 The project is to set up “Rawalpindi/Islamabad Cooperative Dairy Union Limited” having its operational Office in Rawalpindi for procuring and selling fresh milk of 10000 litres per day with the purpose of increasing the income of the marginal farmers, to extend socio-economic benefits to the community and to provide fresh and pure milk to the residents of the Rawalpindi and Islamabad Cities, through retail out-lets of the Union.
- 1.2 The scheme is designed to cover the farming community of the Rawalpindi Division and its peripheries, who generally possess small land holdings, entirely depending upon rainfall and their income is limited. The adoption of milk supply will help add to their income. The scheme will also benefit the consumers of the area, particularly the twin cities of Rawalpindi and Islamabad.
- 1.3 The Government of the Punjab from the block allocation will fund this project as Grant for Cooperative Sub-Sector under its scheme to provide essential foods to people for upgrading their health.
- 1.4 The fresh market milk will be sold through the Union’s retail out-lets.
- 1.5 It is expected that the implementation of this scheme will provide an increased and stabilized demand/price for raw milk and a guaranteed market

channel, which will induce the farmers to raise more dairy cattle and protect dairy farmers from the unexpected/unfair price.

- 1.6 The total Capital Investment of this project will be Rs.6.0 million, which will be funded by the Government of the Punjab as Grant. The working capital requirement will be Rs.500,000/- to be met from equity.
- 1.7 The operating rate of the dairy plants will be 70 percent in the first year that will be step by step increased to 90 percent from the fourth year of operation for onward period.
- 1.8 The project life is 10 years including 1 year of its implementation.
- 1.9 The Net Present Value of the Capital Investment of the project is estimated to be Rs.10,345,819 at an assumed discount rate of 14 percent because the Federal Bank for Cooperatives provide project finance at this rate. The Internal Rate of Return will be 47 percent, which is much higher than the assumed capital cost of investment, 14 percent.

## **CHAPTER-II:**

### **BACKGROUND**

#### **2.1. Overall Situation:**

Pakistan is primarily an agricultural country and milk production is an important part of it. Milk production supplements and stabilizes farm income. In Pakistani diet, milk is a major part of food consumption and plays a prominent role. As food group, all milk (both milk and milk equivalent) is second only to cereals in level of per capita consumption. By weight, all milk makes up nearly one third of all food consumed. It is consumed as fresh, boiled, powdered and processed milk and as yogurt, ghee, lassi, butter, cheese, ice cream, sweet meats and other confectioneries. About half of all the milk is consumed as fresh and boiled milk, about one fourth as ghee and one sixth as yogurt or curd. The average consumer spends one fourth of his food budget on all milk. Due to highly perishable nature of this commodity, fluid milk has been made available for consumption to the urban population in fresh and processed form.

Population inflow to Islamabad and Rawalpindi has been very rapid because the former being capital and twin cities. The area having low agricultural potential and Barani, does not meet the fresh milk requirement of the residents of both the cities.

The Dairy Development Board set up Islamabad Milk Plant in 1974 with primary objective of collection of fresh milk from producers and supplying it to the consumers of both the cities. Initially it operated successfully but later on due to operational failure and low supplies it was closed down for the last 14 years. Thus, the consumers are left at the mercy of private milk dealers and Dodhies who supply impure and adulterated milk and charge them very high prices. To meet this short-

fall, packed milk is supplied by the milk processing Plants at very expensive rates, i.e.Rs.27/- per litre which is out of common man's reach. The high prices of UHT packed milk by milk processing plants and poor availability of fresh and raw milk in the adjoining areas induce the milk dealers to arrange supplies from Districts of Mandi Baha-ud-din, Gujrat and Sargodha, which are rich source of milk production. Milk dealers being profit oriented, supply impure and adulterated milk and also charge high prices.

The per capital income of the twin cities is very high which assures the high potential market of milk and milk products.

## **2.2. Area of Project:**

The scheme is designed to cover the farming community of the Rawalpindi Division and its peripheries and to provide fresh and pure milk to the residents of Islamabad and Rawalpindi twin big cities. The estimated milk production in the year 1994-95 was 18277 '000' tonnes and in the year 1995-96 was 19143 '000' tonnes. However, Pakistan imported milk and milk products in the year 1994-95 to the tune of Rs.12,751,940 thousand and in the year Rs.15,190,740 thousand.

## **2.3. Problems Faced by the Farmers:**

Rawalpindi region has low agricultural potential because of being rain-fed area. The past experience shows that milk production of members and associate farmers in Rawalpindi and allied areas under Cooperative network was very low which made the whole operation uneconomical as it could not even meet the overhead expenses. Consequently, project was closed down.

#### **2.4. Need and Justification of the Project:**

To make the operation viable, it is necessary that bulk supplies are available and operational volume should justify the operational cost. The scheme will provide a mechanism through Cooperative infrastructure for providing better market opportunities to the producer farmers as well as pure and fresh milk to consumers in Rawalpindi and Islamabad cities, at competitive prices. Thus Union's activities will promote the economic interests of small producer farmers in respective areas by providing them a guaranteed market and fair prices throughout the year and will also stabilize the prices of fresh milk in Rawalpindi and Islamabad cities. The scheme will also help in supplementing the Government efforts in providing pure essential foods to people for upgrading their health.

#### **2.5. Benefits to the Farmers:**

The income of the farmer members would substantially increase by the proposed marketing system of the milk supplied by the producer farmers through union. It is expected that the farmers will receive at least Rs.1.00 more than what they are presently getting from the milk dealers under conventional system thus giving an additional income of about Rs.300,000/- per month on the basis of 10,000 litres milk per day procurement, if the plants achieve their maximum capacity.

## **CHAPTER-III:**

### **PROJECT**

#### **3.1. Scope of the Union:**

Since the area having low agricultural potential and Barani, does not meet the fresh milk requirement of the residents of Islamabad and Rawalpindi cities, therefore, Village Dairy Cooperative Societies (DCS) will be formed who will be affiliated and supervised by the Union to make them economically viable, to achieve the economies of the scale and to extend the socio-economic benefits to the producer farmers.

#### **3.2. Objectives:**

The Government policy is to increase milk production through institutional support and input supply in order to provide pure essential foods to people for upgrading their health. The objectives of the Union/Project are not only to facilitate operation of village Dairy Cooperative Societies and to carry out activities for the economic development of dairy farmers of the area by effectively organizing the production, collection, handling and processing but also marketing of milk and technical services, supplies of fodder and cattle feed etc., to the milk producers and provide quality milk to consumers at competitive prices. Thus the Union will represent the dairy farmers and also implement dairy development activities to achieve the following objectives:

- To increase the income of farmers by assuring the price of raw milk.
- To provide pure and fresh milk to Islamabad and Rawalpindi cities.
- To induce the farmers to enter the dairy industry by providing a secure and remunerative market.
- To protect the dairy farmers from price fall when milk oversupplied.



- To build and assist village level institutions in cooperative sector to manage the dairy activities.
- To ensure provision of milk production inputs, processing facilities and dissemination of know-how.
- To facilitate rural development, introducing cash economy and opportunity for steady income.

To sum up, the main core objectives of the Union are to eliminate middlemen and organize institutions to be owned and managed by the milk producers themselves, achieve economies of scale to ensure maximum returns to the milk producers, at the same time providing wholesome milk at lowest possible price to urban consumers.

### **3.3. Operational Rationale:**

The important aspect of the project is to develop and look after the economic interests of small milk producers by organizing their Cooperative Dairy Societies on the one end and to save the inhabitants of twin cities on the other end from exploitation of professional milk dealers by supplying them fresh and pure milk on competitive prices through union network of retail shops. Since the raw milk is not available in bulk supplies in one area, therefore, four milk collection centers will be established in the milk producing. The milk thus collected from these producers will be chilled and transported to the union's sales points in Rawalpindi and Islamabad. The major steps in operation are listed below:

- a) Four milk procurement centers will be established with minimum potential raw milk collection of 2,500 litres per day.

- b) Providing of basic infrastructure like, Land & Building, laboratory and milk processing equipment, etc. will be the Union's responsibility.
- c) The maintenance of milk processing equipment will be the responsibility of union.
- d) Raw milk will be purchased from the producer farmers/Dairy Cooperative Societies on cash basis at the collection points and from there it will be the responsibility of the union to preserve it and market it.
- e) Union will arrange its own tank lorry for transporting processed fresh market milk from procurement centers to the Union's retail outlets in Rawalpindi and Islamabad cities.
- f) Prices will be according to the prevailing prices in the respective areas and will be mutually agreed between Dairy Cooperative Societies and the Union.
- g) Union will arrange training programs to increase milk production and upkeep of dairy animals.
- h) At a later stage, union will run the feed mill and will provide cattle feed to members and associate farmers on no-profit no-loss basis and will recover such cost against milk supply by them.
- i) Union will arrange veterinary services by hiring a full time veterinary compounder and will provide this service to producer farmers to their doorsteps at concessional rates. The veterinary medicines will be provided on actual cost basis. Artificial insemination facilities will also be arranged at these centers, in collaboration with the Livestock Department.

j) In case of short supplies of raw milk by the members, deficit milk than the expected plant capacity will be procured from the non-members or union will adopt dual price policy to run the plant economically and to ensure the processed milk supply in the market.

### 3.4. Project Implementation Plan:

The project life will be 10 years including 1 year of implementation and 9 years of formal operation. The progress of work will flow as under:-

Sr.#	Name of the Activity.	Period.
1.	Grant from the Government.	3 months.
2.	Survey & basic Layout.	2 months.
3.	Formation of the Union and Dairy Cooperative Societies.	2 months.
4.	Acquisition of Union's Office.	1 month.
5.	Purchase of Land, its development & construction of building for Procurement Centers, Electricity, Water Boaring.	5 months.
6.	Ordering & purchasing Machinery, Tools & Equipment.	3 months.
7.	Recruitment of Staff.	2 months.
8.	Trial run/Commencement of work.	1 month.

Sr. #	Activity #.	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	Activity-1.	←————→												
2.	Activity-2.		←————→											
3.	Activity-3.			←————→										
4.	Activity-4.				←————→									
5.	Activity-5.					←————→								
6.	Activity-6.							←————→						
7.	Activity-7.									←————→				
8.	Activity-8.											←————→		

## **CHAPTER-IV:**

### **ORGANIZATION & MANAGEMENT**

#### **4.1. Management of Policy:**

The project will be implemented by the Cooperatives Department with the collaboration of Livestock and Dairy Development Department of the Government of Punjab with a grant of Rs.6,000,000/- from the Government as a development project and Rs.500,000/- as Equity contributed by the Dairy Cooperative Societies to be used for working capital requirements. It will be managed and run by the Board of Directors of the Rawalpindi/Islamabad Cooperative Dairy Union Limited.

#### **4.2. Organization and tasks of Divisions:**

##### **a. Procurement/Production Division.**

The work of the production division is to purchase raw milk and process it. Therefore, they make efforts to increase the productivity.

##### **b. Administration Division.**

This division is in charge of general affairs related to the operation of the plant. They pay the salaries of the employees and manage the welfare facilities. They plan to rationalize the function of work and make out the financial statements. Another task is to assist other divisions for administrative affairs in order to achieve the whole target of the project.

**c. Marketing & Extension Division.**

The work of this division is to achieve the sales target according to the plan while expanding market share. They take charge of sales promotion such as advertisement in order to maintain and increase the market share. Another important task of this division is to encourage the farmers to raise dairy cattle and guide them to adopt new technology and management on dairy farming. Other work is to assist the dairy farmers to improve milk quality.

**CHAPTER-V:**  
**FINANCIAL ANALYSIS**

**5.1. Procurement and Selling Price:**

Project life is 10 years including 1 year of implementation.

The capital cost of the project is worked out as under :-

a. Cost of infrastructure for 4 procurement centers (Annexure-A).	Rs.3,400,000.00
b. Cost of 2 Tank Lorries for milk transportation.	Rs. 1,600,000.00
c. Cost of 30 Refrigerators (350 litres) @ Rs.15,000/- each.	Rs. 450,000.00
d. Union's Office Furniture & Fixture.	Rs. 100,000.00
e. Two used vehicles for marketing and extension activities.	Rs. 400,000.00
f. Contingencies.	<u>Rs. 50,000.00</u>
Total to be provided by the Government as Grant:-	Rs.6,000,000.00
g. Working Capital Margin to be met from Equity.	<u>Rs. 500,000.00</u>
Total Capital Cost:-	<u>Rs.6,500,000.00</u>

The salvage value of the fixed assets is assumed as Rs.600,000/- and the depreciation will be charged @ 10% which comes to Rs.600,000/- per year.

It is proposed that the raw milk will be procured @ Rs.10/- per litre having 5 - 6% fat and 8.5 - 9% SNF contents and the union should market it @ Rs.14/- per litre to the inhabitants of Rawalpindi and Islamabad against the current price of Rs.15 – 16/- per litre being charged by milk dealers for contaminated and sub-standard commodity as well as standardized tetra pack milk is available at Rs.27/- per litre with 3 – 4% fat contents.

The salary of the manpower required for the project will be Rs.2,436,000/- per year.

The manpower requirements and salary estimates are worked as Annexure-B.

Income tax will be imposed @ 10% on gross profit.

It is assumed that 0.3% will be loss of raw milk in process of producing market milk.

The Federal Bank for Cooperatives provides project finance @ 14% per annum, therefore, this rate will be used as the discount rate to calculate the NPV.

The annual fixed cost is calculated as Rs.3,830,000/- (Annexure-C) and variable cost is Rs.11.50 per litre of the raw milk.

The Net Present Value of the project at 14% discount rate is Rs.10,345,819 and at 20% discount rate is Rs.6,627,916/-.

The Internal Rate of Return is 47%, which is much higher than the assumed capital cost of initial investment that is 14% per annum.

## **CHAPTER-VI:**

### **FINANCIAL ANALYSIS**

#### **6.1. Recommendations:**

- Selling agents may be appointed on Commission basis to reduce the cost.
- To ensure mobility of the field staff hired vehicles may be arranged.
- In acute shortage of raw milk the union may buy milk powder to meet the market demand.
- After establishing recognition in the market, the union may introduce milk and milk products to get more market share and to have competitive edge.
- Instead of paying income tax to the Government, the union may give price difference to the producers.



**Estimated Cost of infrastructure of the Procurement Centers:**

a.	Cost of one Kanal of Land & Development Charges, Civil Works and boaring of water.	Rs. 300,000.00
b.	Cost of Machinery, Equipment, etc.	Rs. 500,000.00
c.	Contingencies.	<u>Rs. 50,000.00</u>
	Total:-	<u>Rs. 850,000.00</u>
d.	Total cost for 4 procurement centers (Rs.850,000 * 4)	<u>Rs.3,400,000.00</u>

**Manpower required and Salaries at Head Office:**

Sr.#	Name & No. of Posts.	Emoluments P.M.	Total Emoluments.
1.	General Manager. 1	Rs.15,000	Rs. 15,000
2.	Chief Manager. 3	Rs.10,000	Rs. 30,000
3.	Assistant/Subordinate Staff. 6	Rs. 3,500	Rs. 21,000
4.	Driver. 3	Rs. 3,000	Rs. 9,000
5.	Watch Man. 1	Rs. 2,000	Rs. 2,000
6.	Sales Men. 30	Rs. 2,500	<u>Rs. 75,000</u>
	Total:- 44		<u>Rs.152,000</u>

**Manpower required and Salaries at Procurement Centers:**

Sr.#	Name & No. of Posts.	Emoluments P.M.	Total Emoluments.
1.	Incharge. 4	Rs. 3,000	Rs. 12,000
2.	Assistant/Subordinate Staff. 4	Rs. 2,500	Rs. 10,000
3.	Veterinary Assistant. 2	Rs. 2,500	Rs. 5,000
4.	Watch Man. 4	Rs. 2,000	Rs. 8,000
5.	Labourers. 8	Rs. 2,000	<u>Rs. 16,000</u>
	Total:- 22		<u>Rs. 51,000</u>

Annual Salaries will be Rs.2,436,000/- (Rs.151,000 + Rs.51,000 = Rs.202,000 \* 12).

**Estimated Annual Operational Fixed Cost:**

a.	Salaries Head Office & 4 Procurement Centers (Annexure-B).	Rs.2,436,000.00
b.	Rent (H.O. Rs.3,000 + Rs.500 * 30 Sales Points = Rs.18,000 *12).	Rs. 216,000.00
c.	Telephone Bills (Head Office & Procurement Centers).	Rs. 36,000.00
d.	Repair & Maintenance.	Rs. 400,000.00
e.	POL.	Rs. 82,000.00
f.	Utility Bills.	<u>Rs. 60,000.00</u>
	Total:-	Rs.3,230,000.00
g.	Depreciation.	<u>Rs. 600,000.00</u>
	Total cost:-	<u>Rs.3,830,000.00</u>













Cash Flow.	(6,500,000)	1,049,748	1,699,206	2,348,664	2,998,122	2,998,122	2,998,122	2,998,122	2,998,122	2,998,122
Net Value.										600,000
Cash Flows.	(6,500,000)	1,049,748	1,699,206	2,348,664	2,998,122	2,998,122	2,998,122	2,998,122	2,998,122	3,598,122
NPV @ 14%, IRR	4,708,238 30%									
Capital Requirements:		500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Break-even Point:										
Revenue.		30,240,000	35,280,000	40,320,000	45,360,000	45,360,000	45,360,000	45,360,000	45,360,000	45,360,000
Variable Cost.		25,910,280	30,228,660	34,547,040	38,865,420	38,865,420	38,865,420	38,865,420	38,865,420	38,865,420
Contribution.		4,329,720	5,051,340	5,772,960	6,494,580	6,494,580	6,494,580	6,494,580	6,494,580	6,494,580
Fixed Cost.		3,230,000	3,230,000	3,230,000	3,230,000	3,230,000	3,230,000	3,230,000	3,230,000	3,230,000
Break-even point used at Break-even point ( % ).		74.60	63.94	55.95	49.73	49.73	49.73	49.73	49.73	49.73

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
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INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

①  
3.3.98

**PROJECT PROPOSAL**

Title of the Project Proposal : COOPERATIVE AGRICULTURAL  
TRADING OF SMEC

Country : PHILIPPINES

Project Proposal Prepared by : MR. JOCELYN P. ESPINA

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
**in collaboration with its Member-Organisations in**  
**India, Philippines and Japan**

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First, I would like to thank GOD above all for the blessings He always shared with me and for all the good things He often give me in life.

I would also like to recognize the support of the cooperative of which I had grown with, the Badiang Multi-purpose Cooperative, for giving me a rare opportunity to acquire more knowledge for the strengthening of our cooperatives in New Lucena, Iloilo, Philippines.

Likewise, I'm thanking the Japanese government for funding this Training Program and Dr. Daman Prakash, our Project Director, who is very helpful for all my endeavors during our stay in India – Philippines and Japan and for his fatherly support and advice; the ICA – ROAP faculty and staff, the IRMA – VAMNICOM Management , Professors and staff for giving me and my group enough support and efforts in teaching us lessons since the beginning of the training.

Though, I find this training sometimes hard enough to bear, the friendship of which I have established with my co-participants makes it bearable and enjoyable.

Lastly, I thank the Cooperative Union of the Philippines (CUP) the Cooperative Development Authority (CDA), Western Visayas Union of Cooperatives and the Local Government of New Lucena, Iloilo, Philippines especially the Municipal Agriculture Office Personnel, Honorable Joemarie Gerochi, Undersecretary of the Department Of Agriculture, the assistance of the Personnel of the Land Bank of the Philippines, Iloilo, all the cooperatives of New Lucena, Iloilo for their moral and financial support, to my family and friends; this I owe them a lot for making this project a reality.

**February, 1998**

**ESPIA, MA. JOCELYN**

**ILOILO, PHILIPPINES**

## CHAPTER I

### SUMMARY

The project is all about the establishment of warehouse, solar dryer and rice mill in Barangay Badiang, New Lucena, Iloilo. The project will also engage in paddy and rice trading, selling fertilizers, chemicals for paddy production, by-products for livelihood projects of the members, once established, the project will be implemented and run by the Badiang Multi-purpose Cooperative in coordination with the Federation of Cooperatives in New Lucena, Iloilo.

The objectives of this project are to increase the income of the member-farmers by giving them the opportunity to handle their produce from the point of production going to the market places. In order them to dictate reasonable prices that will benefit them and also the consumers.

The target group of this project are farmers and primary cooperatives around New Lucena which are suffering from private traders and middlemen who dominates the market during this period, in return cut a big slice of profit from the transaction, thus they earn more than the producers.

Total investment of the project is P 4,727,960.00 pesos or \$ 110,492.17 dollars.

The sources of funds are subsidy ( P 200,000.00 solar drier) from the government and ( P 400,000.00 lot) from the Badiang MPC's owned capital and the remaining ( P 4,127,960.00 ) will be obtained from the NAFC, GAP and other government and non-government organizations.

The capacity of the project is to mill 18,000 cavans of paddy per year with warehousing fee of P 2.00 per cavan and fee increases by 10 % every year. Almost all the paddy will be procured from New Lucena.

The result of financial analysis of the project, IRR is 30.74%.

Seven <sup>8</sup>(7) persons will be employed as regular employees.

The construction of the project will be 14 ½ months.

# BACKGROUND

### OVERALL SITUATION

The promise of economic development has remained an elusive dream to the Filipinos. Every new administration has set out to make it a reality- adopting four or five year program, changing policies, experimenting with strategies. But through the years, the Philippines has lagged behind as the “ Sick man” in a thriving region, outpaced by less endowed Asian neighbors in growth and development. Economic stagnation diminished past gains, eroding the Filipino’s confidence and sense of well being.

Nation’s wealth & resources had been dissipated by an extended regime of a one-man ruler.

When “People Power” toppled the Marcos regime, the transition into democracy was beset with political turmoil.

A series of natural calamities such as typhoon, flood, drought followed which brought the nation to its knees. As though that were enough to bring the nation to its senses, a series of coups staged by a disgruntled faction of the military dashed all hopes for an early recovery.

Fortunately for the generations to come, crisis served as defining moment in this nation’s history. In addressing the crisis, President Ramos has taken the vital step of identifying five major problems that must be dealt with before the economy can take off.

The priority tasks are as follows:

1. Removal of tariff protection and soft controls which previously coddled so-called infant industries that are already several decades old, many of which had become too inefficient to compete globally.
2. Break up of cartels and monopolies which are controlled by a few and prevent the growth and competitiveness of the industry.
3. Eradication of corruption, especially the agencies that regulate and control the economy, and the efficient administration of the judicial system. Corruption undermines not just the economy but the people’s faith in the government.

4. Upgrading the quality of the country's infrastructure such as electric power, water, transportation, telecommunication, roads and bridges and ports from their present deficient, inefficient and mismanaged state. The historical neglect has cost the nation dearly in terms of lost investment steep prices of goods and services, and wasted production capacity.
5. Adjusting to the unfolding economic climate in the world new historic trade alliances with the approval of North American Free Trade Association (NAFTA) between the United States, Mexico and Canada and recently, the agreement reached in the General Agreement on Tariff and Trade (GATT) negotiations and the establishment of World Trade Organization (WTO).
6. While generally favorable to world trade, the country must review its markets, make the necessary adjustments and develop a world trade strategy appropriate to national conditions and advantageous to its people.

#### **AGRICULTURAL SECTOR:**

The agriculture sector in the Philippines was able to sustain its previous gains on its Gross Value Added (GVA) continued to increase. The GVA in 1996 in agriculture posted 3.02% growth, the highest rate attained since 1990. However, lately, growth in agriculture and fisheries slowed down to 1.34% due to the adverse effects of the dryspell and other unfavorable weather conditions and disease outbreaks, which affected rice and livestock production.

Inspired with the vision of Philippines 2000 (Government National Program), President Fidel Ramos came up with the Medium-Term Philippine Development Plan with the twin objectives to empower the Filipinos and make the economy globally competitive.

The Department of Agriculture in turn drafted the Medium-Term Agriculture Development Plan during this same year, to define the direction and thrusts for modernizing agriculture sector. It seeks to realize higher income and a better quality of life for farmers and fisher folks, using the Key Production Area Approach.

## **CURRENT DEVELOPMENT:**

### **GRAINS STABILIZATION**

Rice and corn are the most important staples in the country. Ensuring adequate supplies of these grains at stable and equitable prices for both producers and consumers is therefore a primary concern of the government. Thus, the DA undertakes the following activities:

#### **a. STABILIZATION OF RICE SUPPLIES AND PRICES**

The DA participates in the marketing of rice by engaging in the following activities:

Buying of Paddy and Selling Rice. The DA through the NFA, buys paddy in surplus areas and sells rice in deficit areas at pre-determined support and release prices. The intent NFA's procurement activities is to prop up farm gate prices in surplus areas during harvest time and thus assure farmers of a reasonable return on their investment. NFA also sells rice in urban wholesale markets to avert unusual price increases during the lean months and ensure that enough supplies are available to low-income consumers at prices within their reach.

### **MAINTENANCE OF A BUFFER STOCK**

To ensure that enough stocks are in government hands for distribution in deficit areas during the lean production months from July to September, the NFA as a rule, hold an inventory of at least 500,000 tons of rice. This is roughly one-third of the country's consumption requirement for the 90-day lean period.

### **CONTROL OF INTERNATIONAL TRADING**

Government, through the DA, continues to control import and export of rice to ensure the domestic supply-demand balance. Under tight supply-demand conditions, rice is imported by the NFA to ensure that it has the required buffer stock to avert unusual price increases during the lean season. Imports arrival are timed so that these do not coincide with the harvest season and therefore dampen farmgate prices. In line with its commitment to empower small farmers and turn over more of the farm business to them, the DA is moving to involve the participation of the farmer's organizations in the importation and marketing of imported rice.



## REHABILITATION AND RECOVERY MEASURES IN RESPONSE TO CALAMITIES

The Philippines is visited by an average of twenty typhoons a year. Every three to five years, it experiences droughts caused by the El Nino Phenomenon. These calamities, together with the unforeseeable earthquakes and volcano eruptions, take their toll on agriculture and the rural sector. Indeed, the damages brought by calamities have been great. It is estimated that at least 2% of total crop output is lost to these disasters every year. This means an annual average loss of about P1.7 billion pesos since 1980. The losses of the agriculture sector due to calamities in 1989 were valued at P1.9 billion; in 1990 this rose to P3 billion mainly because of the effects of the July 16 1990 earthquake. More crop damages are expected within the next few years as a result of the aftermath of the MT. Pinatubo eruption. As of September 30, 1991, the estimated damage to rice and fishery sector cause by lahar flows resulting from this eruption amounted to P453M.

## CHAPTER III

# PROJECT

### A. THE PROJECT AREA, ITS PEOPLE AND DEVELOPMENT POTENTIAL

The project is in Badiang, New Lucena, Iloilo. Badiang is 1.5 kilometers away from New Lucena town proper. It is strategically located among the rice producing areas of New Lucena and convenient access on public utility transport, water system and electricity.

It was chosen as the site of the project due to the following reasons:

1. Agriculture is the major economic activity with paddy as a major commodity.
2. The barangay's proximity to the target area.
3. Irrigated area with service area of 227 hectares under the Suague Irrigation system.
4. Priority barangay under the Gintong Ani Program.
5. A 2,000 sq. m. lot donated by a private person as per usufruct to the cooperative where the processing center will be established is located in the barangay.
6. National Food Authority facilities such as buying stations warehouse and processing complex are not available in the area.
7. Presence of a viable and stable cooperative, the Badiang MPC whose members are mostly farmers.

#### Description of the Badiang Multi-purpose Cooperative.

BMPC was organized in 1989, registered on January 26, 1990 at the Bureau of Agricultural cooperatives under the Department of Agriculture. It was confirmed by the Cooperative Development Authority on September 30, 1991 with forty-three members and an initial capital of P 8,000.00 to start the cooperative store. The membership was then expanded and every year there's an increase in capital build up and net surplus from its business operation, this is because of full support of the cooperative leaders as well as members even though the BODs don't receive any honorarium from the very start of the organization of the cooperative.

Since the cooperative was organized, it is extending paddy production loan from the Land Bank of the Philippines, at present under the GAP of the Department of Agriculture it is extending loan to farmer-members P10,000.00 per hectare with an interest rate of twenty six per cent per annum. The fourteen per cent will go the Land of the Philippines and the twelve per cent will be retained to the cooperative. At present, the BMPC has a total membership of one hundred twenty one , fifty six are male and sixty five are female. Expansion is one way of enhancing the financial resource and marketing reach of the cooperative depending in their respective type of business. Of the total membership mostly are farmers.

The BMC is an agricultural multipurpose cooperative that renders services to its members such as loaning operations, sales of commodity goods at reasonable prices, fertilizers and chemicals. It holds its monthly meetings of BODs and members for them to be updated of the status of the cooperative. Other related activities like consultancy on farm technology, networking and linkaging on accessing funds for the support of the member production needs, also with financial and human resource as support for they're training needs. It has an active participation and contribution to the Western Visayas Union of Cooperatives, New Lucena Federation of Cooperatives and to the Comprehensive Cooperative Development Program of New Lucena.

## PROVINCIAL PROFILE

### TOPOGRAPHY:

Iloilo occupies the entire Southeastern portion of Panay Island and includes several islands dotting the Southeastern coast and the biggest of which is Guimaras. Mountainous in the Western part and hilly in the North. Drained by several rivers, the largest of which are Jalaur, Jaro and Sibalom.

### Climate Type I

Dry Season	- November to April
Wet Season	- The rest of the year
Maximum temperature	- 30.1 degree celcius
Minimum temperature	- 23.9 degree celcius

Relative humidity	- 82 %
Annual Rainfall	- 1940.0 m.m.

### **Land Resources**

Total Land Area	- 510,179 has
Total Agricultural Land	- 292,504 has
Total Arable Land	- 238,169 has
Total has devoted to paddy	- 145,949 has
Ave. Land Holdings	- 1.5 has
Cropping Intensity	- 1.64

### **Socio-Economic Situation**

Total population	- 1,313,312
Total No. of Farm Families	- 164,616
Total Rice Farmers	- 112,209
Ave. Household Size	- 6
Total No. of Barangays	- 1,700

### **Employment Status**

Total Labor Force	- 612,016
Agriculture	- 324,222
Non-agriculture	- 144,798
Un-employed	- 152,996

The Province of Iloilo is considered an agriculture based province. Almost 50% of its population depend on agriculture for its livelihood.

The Province of Iloilo is however endowed with its rich natural resources particularly agricultural resources. The Province can grow various agriculture crops such as cereals, vegetables, fruits, poultry, and livestock's all throughout the year.

Despite this rich agriculture resource, its vast potentials haven't been fully tapped and exploited. Iloilo's agriculture economy has remained sluggish during the past years. Efforts in agriculture from both the government and the private sectors has less impact in the

national road from the north to the south and east to west, thus making transportation within or to and from the municipality easy.

## **B. LAND AREA**

New Lucena's total land area is approximately 4,412 hectares or 44.2 square kilometers, which is about 0.83% of the total area of Iloilo Province.

The Municipality consists of 21 Barangays namely: Baclayan, Balabag, Badiang, Bilidan, Bitá-og Gaja, Bololacao, Burot, cabilauan, Cabugao, Cagban, Calumbujan, Damires, Dawis, General Delgado, Guinobatan, Janipaan Oeste, Jelicuon Oeste, Jelicuon Este, Pasil, Poblacion and Wari-Wari. The average land area of the barangays is 210 hectares. Its biggest barangay is Wari-Wari with a land area of 434.27 hectares, while the smallest is Jelicuon Este which is 43.72 hectares.

## **C. CLIMATE**

New Lucena has two types of climate: the dry season which falls on December to June, and the wet season which is from July to November. It's average monthly rainfall as recorded in 1993 was 263.48 cu. m., while it's average humidity was 79.83 percent.

## **D. TOPOGRAPHY**

The slope of the municipality ranges from 0-15 percent, which is best described as broad to level land to moderately undulating and gently rolling land, sloping in more than one direction. The slope Category A with 0-3 percent described as broad to level covers an area of about 1,475 hectares representing 33.43 of the total land area; 3-5 percent slope or slope Category B covers 1,762 hectares or 39.94 percent of the municipality's total land area. The 5-8 percent slope or Category C covers 1,050 hectares or 23.80 percent of the total land area and 8-15 percent slope representing the smallest figure of 125 hectares is 2.80 percent of the total land area.

## **E. SOIL**

The Iloilo Province' soil classification map reflects the New Lucena has two types of soil namely: Alimodian Clay Loam and Sta. Rita Clay Loam. The Alimodian Clay Loam is mostly found in barangays Janipaan Oeste and Badiang, Bitá-og Gaja, Bilidan and small

overall economy of the province except major agricultural exports such as sugar, prawn, bangus and rice.

With the present effort of the national leadership towards “ Philippines 2000 ” and the emerging world trend in terms of trade and business, the Province is left without option but to compete not only with the neighboring provinces but with the ASEAN neighbors as well, if not the whole world.

The emerging NAFTA composed of the U.S, Mexico and Canada. The APEC composed of Asian Nations and the AFTA of the ASEAN region are clear examples of the emerging trade blocks which could directly affect our commodities competitive leverage in the whole market.

The Province of Iloilo has therefore to view it in a very comprehensive manner if it would like to be a major player in the very competitive world of trade and business.

The Province of Iloilo will therefore try to join in the competitive world of production, trade and business by adopting the key Production Area Development Approach through commodity assessment.

This approach identifies certain priority areas best suited for specific products based agro-climatic suitability of the market of those products. Government support would then be focus in these priority areas in order to remove the bottlenecks that impede competitiveness in the production of these commodities. Such an approach would ensure efficient utilization of scarce resources. It would ensure that farmers get the best returns on their investments.

## **PHYSICAL PROFILE**

### **A. LOCATION**

The Municipality of New Lucena is strategically located at the Northern portion of the Province of Iloilo. It is approximately 28 kilometers away from the heart of Iloilo City. It is bounded on the Northeast by the Municipality of Pototan, on the Southeast of the Municipality of Zarraga, on the Southwest by the Municipality of Sta. Barbara and on the Northwest by the Municipality of Cabatuan and part of Mina.

From this neighboring towns, the town proper of New Lucena could be reached by land either via Sta. Barbara, 15 kilometers from Cabatuan, 6 kilometers from Pototan, 6.6 kilometers from Zarraga and 11 kilometers from Mina. New Lucena is criss-crossed by the

portion of barangays Wari-Wari, Cabugao and Guinobatan. This type covers about 1,525 hectares which is 65.44 percent of the total land area of New Lucena.

## **DEMOGRAPHIC PROFILE**

### **A. POPULATION, LAND AREA, AND POPULATION DENSITY**

The population of New Lucena as of 1995 NSO count was 16,873. It's average annual population growth rate was 2.26 percent based on the 1980-1990 population change. Based on this population growth rate, the projected population of the municipality in 1994 was 18,528 and it's projected total number of households was 3,141. During the 1994 SEP survey, 1,800 households were interviewed which constitute 57.31 percent of the total projected number of households. Given the area of 4,412 hectares and the population of 16,910 New Lucena's population density as of 1990 was 3.83 persons per hectare. Of the 21 barangays of New Lucena, Poblacion is the most thickly populated with 8.85 persons per hectare while Jelicuon Oeste is the least dense with only 1.63 persons per hectare.

## **ECONOMIC PROFILE**

### **A. LABOR FORCE AND EMPLOYMENT**

Based on the 1994 SEP survey, those who are of labor force age constitute 56.52 percent (5,739) of the sample population (15-64 years old). However, only 44.87 percent (2,575) were gainfully working at the time of the survey.

More than half (68.22%) of the households had one working member, about one-fifth had two; while 10.89 percent had 3 or more working members.

Farming was the most common major occupation of the workers in New Lucena (28.82%) followed by farm labor (27.69%). Employment in the private firm ranks third with 10.87 percent of the working members in it.

Among the household heads, almost one-third were engaged in farming (33.39%), 31.94 percent in farm labor and 5.17 percent were either government or private employees. The rest worked as drivers, domestic helpers and engaged in business.

## **B. INCOME**

The major source of income of the profile of New Lucena is farming. The income distribution should that in 1994 only 28.61 percent of the households had monthly incomes over P3,000.00. The municipality's poverty rate in the same year was 71.39 percent based on the poverty threshold in Region VI which pegged at P3,300.00 per month in 1990.

## **C. AGRICULTURE**

### **1. Farming Area**

The Municipality is basically an agricultural community with 3,962.9928 hectares or 89.82 percent of its total land area (4,412 hectares) devoted to Agriculture. Of this area, 3,516.34 hectares or 88.73 percent is planted to rice. Other areas had been utilized for sugarcane industry in the 80's. The remaining areas are planted to other crops such as vegetables, rootcrops and fruit trees.

In 1994, 36.28 percent of the households were engaged in farming. Of these 215 (32.93%) households were cultivating irrigated rice lands while 438 (67.87%) were cultivating rainfed areas. Most of the farmers (73.50%) usually have two (2) cropping per year. Only a few could have three croppings because large portions of the farms are rainfed. The Suage Irrigation canal provides service to Barangay Dawis, Badiang and Calumbujan.

A quarter of the Households of New Lucena owned their agricultural lands. Some of these were 183 farmers who have availed land through P.D 27 (OCT) while 41 farmers acquired through R.A 8657 (CARP).

### **2. Paddy Production and Marketing**

In 1994, estimated average rice production per hectare in rainfed and irrigated areas is 80 cavans and 120 cavans per hectare respectively.

### **3. Farming Facilities, Equipment and Tools**

Based on National Food Authority (NFA) Region VI record, there are 14 millers in New Lucena, one "cono", 8 "Kiskisan", and 6 rubber roll. In 1994 SER survey, 580 households owns blowers. Other tools owned were "suyod", "karas" and "labay".



Table 12. Farm Tools in the Municipality by Type

Farm Tools	Number
Arado	518
Suyod	262
Karas (Harrow)	270
Labay	335
Handtractor	212
Thresher	186
Blower	174

#### 4. COOPERATIVE

There are 26 organized and registered cooperatives in the Municipality. One credit cooperative and 25 agricultural multi-purpose cooperatives. These cooperatives were federated into one to answer the problems of primary cooperatives in the Municipality. The activities of the agricultural multi-purpose cooperatives are crop production, loan, livelihood projects, pre and post harvest facilities. While for the credit cooperative ordinary loans ( amounting to maximum loan of P 5,000.00 ) with an interest rate of 4% per month and rediscounting loan for government employees with an interest rate of 27% per annum.

#### PROJECT RATIONALE:

Postharvest losses of grains have been a persistent problem besetting the country's rice and corn industries. The government through the National Food Authority (NFA) has made available processing and storage facilities in various areas of the country to address the grains losses problem. Despite NFA's efforts to service our rice and corn farmers, losses still account from a minimum of 10% to a maximum of 37% of the grains produced annually representing a sizeable P 4.29 billion to 15.9 billion leakage from the national economy's gross national product. This could be due to inadequate warehouse facilities both at the farm and at the port side, and the inaccessibility of the NFA facilities to the farming communities.

Another aspect which seems to be undesirable especially during harvest time (where great quantity of grains supply exist) is the fluctuation of the prices which is disadvantageous on the part of the farmers who merely depend on their harvest as main source of livelihood. The private traders and middlemen who dominates the market during this period, in return cut a big slice of profits from the transaction, thus they earn more than the producers.

Furthermore, the issue on inadequate postharvest facilities has somehow affected the farmer's capability to gain access to financial assistance as this would require a secured space where the stocks can be withheld which would then serve as collateral for loan provision.

To address the issue of lack of postharvest facilities, the Department of Agriculture has embarked on a project of establishing farmer's grains center at the farm level to be owned and managed by the farmers' cooperative.

The project would complement the on-going effort of the government to address the inadequacy of the warehousing facilities at the port side. The farm level grain center could then be a part of the national grain network, which could alleviate the national concern for a stabilized grains supply and prices.

As a consequence of this project, farmers will be eligible to participate in the various loan assistance being offered by the different government and private financing institutions.

## **OBJECTIVES OF THE PROJECT:**

The purpose of establishing the integrated grains center is not only to assist and serve the small farmers in their postharvest problems, but also guiding them to shift from ordinary paddy producers to an agribusiness type of farming systems. Specifically, the project aims to:

1. provide farmers, through the Badiang MPC access and control of appropriate postharvest and storage facilities;
2. minimize grain losses at the farm level;
3. expand farmers economic activities by engaging in profitable undertakings; and
4. develop self-reliance, group building and cohesive group identity within cooperative and to enable farmers/members to effectively pursue economic goals/activities.

## **SCOPE OF THE STUDY:**

In the light of the above considerations, this study is being undertaken to determine the market technical, financial, socio-economic and operational viability of the project. If the project is found feasible, the said cooperative could participate and avail loan assistance being offered by the government (i.e. Land Bank of the Philippines, Department of Agriculture through the National Agricultural and Fishery Council) and other non-government organizations.

## **THE PROJECT BASIC FEATURES AND TECHNICAL ASSUMPTIONS:**

1. A 2,000 sq. meter lot where the project will be established.
2. The cooperative agricultural trading will have the following components:
  - 2,000 bags capacity warehouse
  - multi-pass rice mill
  - solar dryer
  - transportation facilities.
  - irrigation facilities
  - trading of agricultural produce
  - distribution of farm inputs
3. Warehouse capacity is 2,000 cavans/ hr. with a life span of 20 years.
4. Rice mill capacity is 14-18 cavans/ hr. with a life span of 10 years, operating 6 hours/day for 25 days per month for ( 8 ) months per year.
5. Solar dryer with 500 sq. m. in area with 100 cavans per day capacity, operating 25 days a month for 6 months per year.
6. Agricultural produce trading – it is assumed that the cooperative will procure agricultural produce of the members with priority in paddy. This activity will expand in later years to increase the profit of the cooperative.
7. Expected life span of the building is 20 years, while the rice mill is expected to last for 10 years.
8. Electrical dryer.

## **Technical Specifications of Equipment**

The project will cater to the drying, storing, and processing needs of the cooperative members and non-members and will be composed of the following equipment:

### **1. Multi-Pass Rice Mill**

700 to 900 kg. / hr - input capacity, 66% and above milling recovery, 75% and above head rice recovery, equipped with diesel engine, manual starting system.

## **Grain Center Construction**

The dimension of the center is 10 x 13.5 meters. The storage area occupies 10 x 13.5 meters while the processing area is 10 x 12 meters. An office with comfort room is also provided within the processing area with a dimension of 3 x 5 meters. The roofing and the right side walling are covered with corrugated G.I sheets gauge 26 and the three sides of the building are concrete hollow blocks with horizontal and vertical steel bars. In the processing area an accordion type of door will be installed. A series of wood jalousie windows will also be provided in the air vents or lowers for continuous flow of air inside the storage. The vents or lowers are installed near the floor level and near the top of the roof. To make the storage area free of rodents a mesh wire is placed on all opening or vents. A ledge will also be provided at the back and front sides of the building for rat control. To withstand the whole structure of incoming external forces, the trusses, beams and foundation shall be designed that it can resist the said unexpected forces.

The storage area is elevated by 0.8 meter, while the processing area is raised by 0.10 meter above the ground surface. The flooring of the warehouse is reinforced concrete flooring with 0.10 meter thick resting on compacted earthfill and gravel above the ground. The storage area can accommodate more than 2,000 sacks if the maximum allowable height of 4 meters will be utilized.

## CHAPTER IV

### ORGANIZATION AND MANAGEMENT

#### A. Project Management Operation Scheme

The management and staff who will compose of the following shall handle the management of the center:

General Assembly, Board of Directors ( 7 ) Professionalized Manager ( 1 ) Treasurer / Bookkeeper/Storekeeper (1) Operators (2) for rice mill and electrical dryer; contractuels for hauling and handling.

#### A. Duties and Functions of the Personnel

1. General Assembly – decide on all aspects of operation on the financial and physical matters.
2. Board of Directors – promulgate rules and regulations governing the operation of the grain center.
3. Manager – a professional manager will be hired by the center and shall take charge of the over-all management operation of the center.
4. Treasurer/Bookkeeper/Storekeeper – shall maintain bookkeeping and accounting system, prepare monthly financial report and in-charge of the farm inputs disposal.
5. Operator – operates and maintains the rice mill.
6. Contractuels – will be utilized in the hauling, handling of paddy/rice during trading, milling, drying and other activities in the center.

## CHAPTER V

### MARKETING ASPECT

#### A. Market Study

##### 1. Supply and Demand

Table I shows (Demand and Supply Estimates for 16 years) that there will be an average production (less wastage) of                    cavans of paddy per year in the municipality. From the total production, it is estimated that on the early stage of operation only 7% or approximately                    mt of paddy is targeted to be stored in the center. The remaining production could be stored or sold by the farmers to any warehouse and market outlets of their choice.

Table II shows the fertilizer and chemical requirements of the farmers in the municipality which the project will be serving with farm inputs equivalent to a total of bags of fertilizers and quarts of chemicals for 14 years based on the total area to be cultivated at a minimum requirement of four (4) bags of fertilizers and three (3) quarts of chemicals per hectare of the total required farm inputs. The needed farm inputs from Iloilo City and other agricultural stores in the municipality. This shall be stored in the warehouse and made available to the farmers in the service area.

##### 2. Market Projection

When more farmers shall avail of the Grain Center and its facilities and services, volume of paddy to be marketed maybe increased by increasing the number of turnover per cropping season.

In cases where the government's buying price of paddy or rice is lower than that of the private traders paddy/rice shall be sold to market outlets that shall give the highest price.

#### B. Marketing Scheme

As shown in Table III (Farm Grain and center Operation) harvesting for the first cropping season is on the month of August to October and January to March for the second cropping season.

Postharvest processing of paddy like threshing, drying and milling by the center shall be done from August to November for the first cropping and February to May for the second cropping season.

Disposal of the stored rice/paddy in the warehouse for the first cropping season shall be done from September to December. For rice/paddy stored from the harvest of the second cropping season, disposal shall be done within the month of March to August where prices of paddy are its peak.

After paddy/rice are disposed from the center, procurement of inputs shall be done immediately so that the warehouse storage facilities could be fully utilized. The acquired inputs shall be disposed within the period of two weeks to one month, so as not to create storage problem for the incoming paddy/rice for the succeeding cropping season.

Inputs procured by the farmers from the center can be paid in cash or in kind. If paid in kind, it shall be deducted from his/her delivered paddy to the warehouse.

## CHAPTER VI

### DETAILS OF OPERATION

#### Implementation Schedule

The project will take fourteen-and-onehalf months to finish. Details of the activities needed to implement the project.

Activity Code	ACTIVITIES	IP	Duration (weeks)
A	Internal Decision Making	-	3
B	Getting the Gov't. and NGO's Support	A	2
C	Designing the IGC	AB	4
D	Secure permission for building	BC	2
E	Main design of building	C	2
F	Making a bid for construction	E	1
G	Award contract	CF	2
H	Construct building	FG	20
I	Specify machineries	-	2
J	Procure machineries	I	6
K	Install machineries	CJ	3
L	Recruit personnel	-	5
M	Train personnel	L	3
N	Establish market linkages	-	3

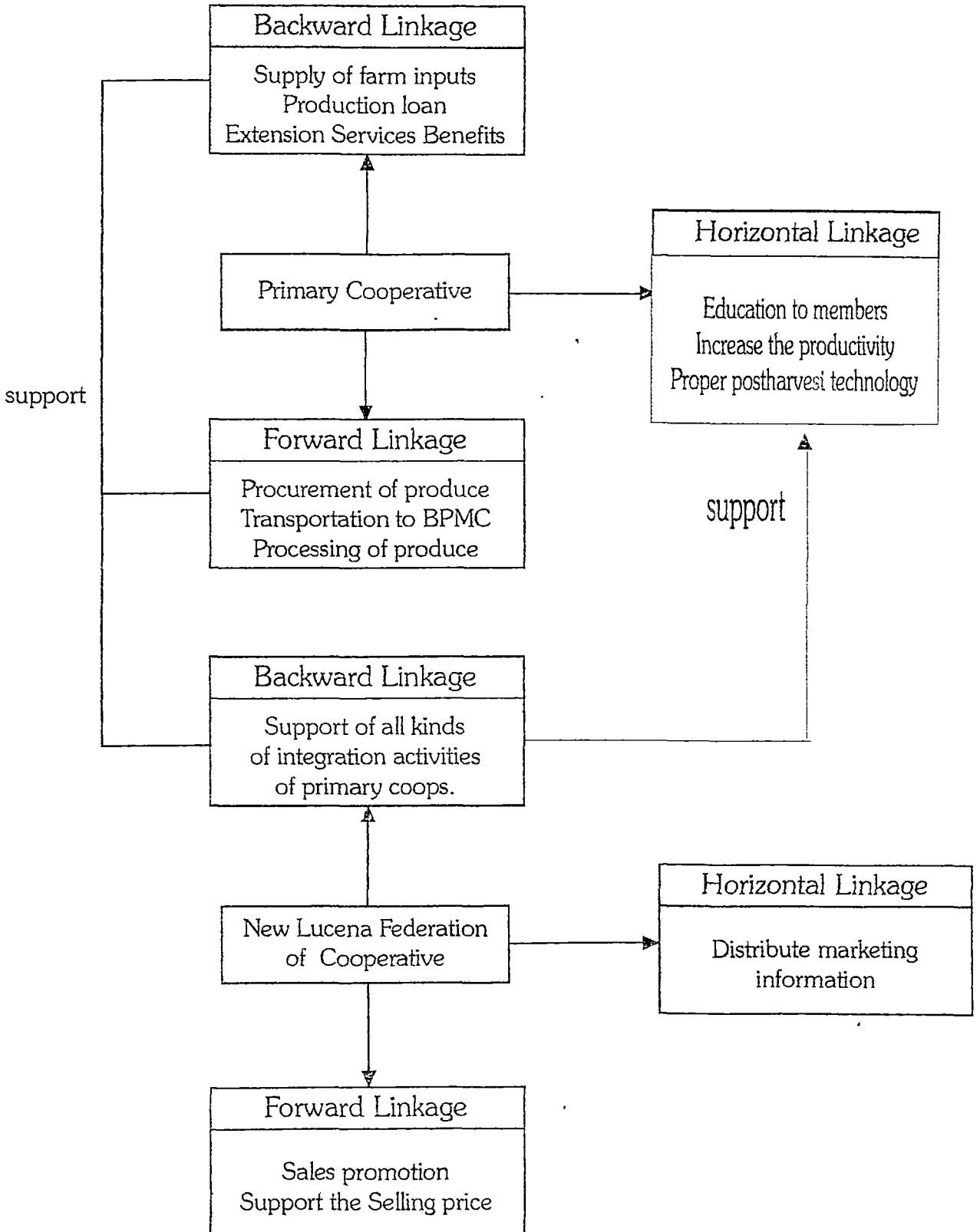
58 weeks/

14-1/2 months

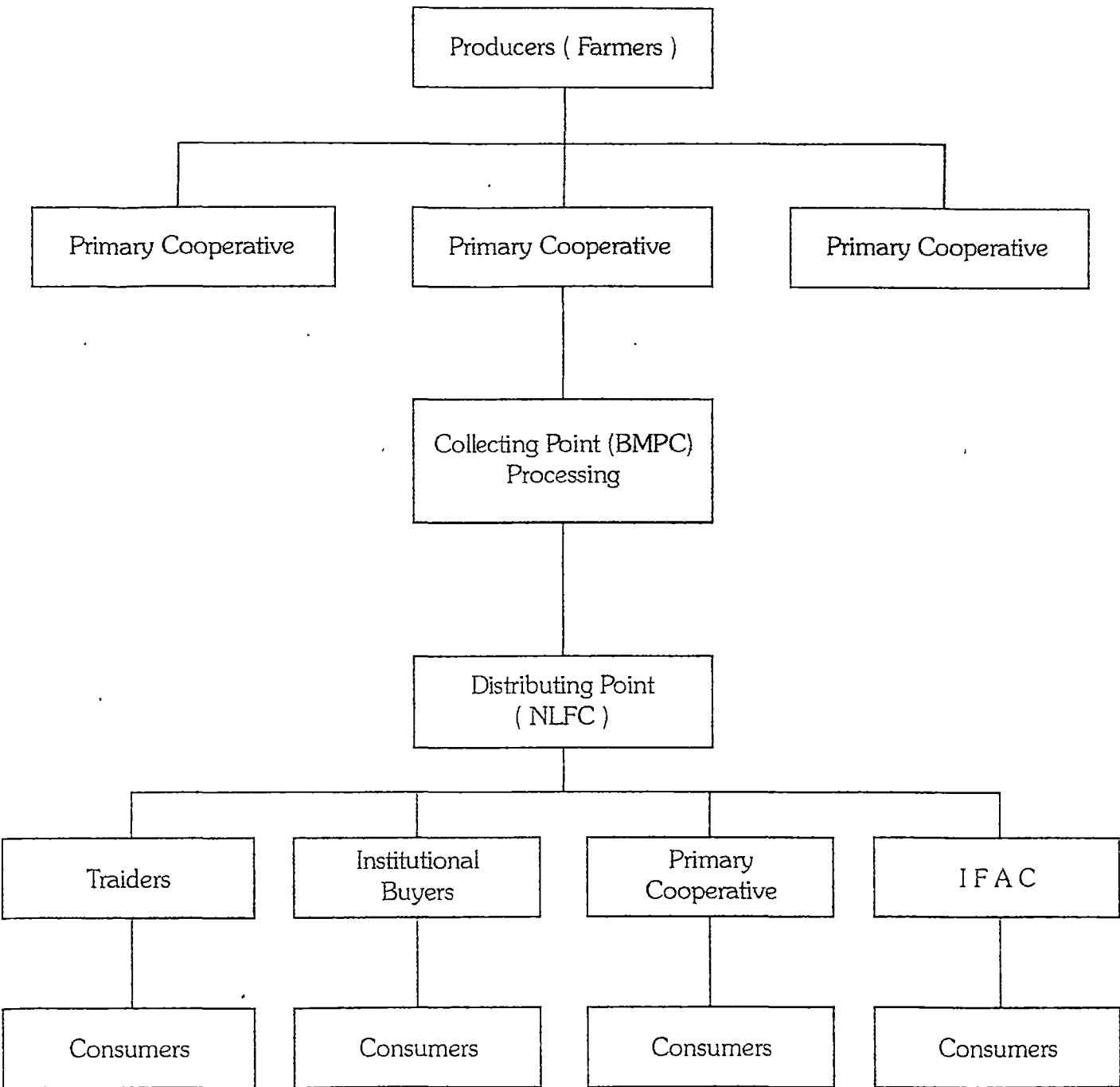


# Integration of Activities

To help member-farmers increase their income, integration of activities of the project will be implemented as follows:



# CHANNEL OF PROCUREMENT AND MARKETING



## FINANCIAL ASSUMPTIONS

- >Project life is expected for ten years
- >No. of cavans milled during the year is 18,000 at P25.00 milling fee/cavan and the fee increasing by 10% every year
- >No. of cavans store in the warehouse is 12,000/year at warehousing fee of P2.00/cavan and fee increases by 10% every year
- >No. of cavans dried is 15,000/year at 2.00 drying fee/cavan and fee increases by 10% every year
- >No of bags of rice sold is 1,800 during first year at average price of P750/bag and both volume and price increasing by 10% each year hereafter
- >No. of bags of fertilizer sold is 10,000/year at average price of P350/bag and price increasing by 10% each year hereafter
- >No of liters of chemical sold is 4,000/year at average price of P600/liter and price increasing by 10% each year hereafter
- >Average mark up price for all items is at 10%
- >Salaries & Wages and Labour Expense is as follows : (increases by 10% each year hereafter)
  - Manager = 36,000/year
  - Treasurer/Cashier = 24,000/year
  - Bookkeeper = 18,000/year
  - (2)Machine Operators = 36,000each/year or 72,000/year
  - (2)Laborers =25,000 each/year or 50,000/year
- >Water, Power, Fuel and Lubricants is computed at P24,000/year and increasing by 10% each year hereafter
- >Insurance and Licenses is computed at 2% of loan
- >Supplies is at P20,000/year which includes sacks/trading and office supplies, increases by 5% every year
- >Repairs and maintenance is at P5,000 for the first year and increases by 20% each year hereafter
- >Depreciation is computed at straightline method with 20% salvage value at end of ten years
- >Interest of long term loan is at 14%/year payable in equal yearly installments
- >Interest of working capital loan is at 17%/year
- >Equity of the coop is the cost of the dryer (P200,000) *Grant*  
*400,000 for the lot*

## DETAILS OF FINANCIAL PROJECTIONS

### CALCULATION OF THE OPERATING CASH FLOWS

#### SCHEDULE OF REVENUES

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Milling Fee/Cavan	25 00	27 50	30 25	33 28	36 60	40 26	44 29	48 72	53 59	58 95
# of cavans milled	18,000	18 000	18,000	18 000	18,000	18,000	18 000	18,000	18,000	18,000
Milling Revenue	450,000	495,000	544,500	598,950	658,845	724,730	797,202	876,923	964,615	1,061,076
Warehousing Fee/Cavan	2 00	2 20	2 42	2 66	2 93	3 22	3 54	3 90	4 29	4 72
# of cavans stored	12,000	12 000	12,000	12 000	12,000	12,000	12,000	12 000	12,000	12,000
Warehousing Revenue	24,000	26,400	29,040	31,944	35,138	38,652	42,517	46,769	51,446	56,591
Drying Fee/Cavan	2 00	2 20	2 42	2 66	2 93	3 22	3 54	3 90	4 29	4 72
# of cavans dried	15,000	15,000	15,000	15 000	15,000	15,000	15,000	15,000	15,000	15,000
Drying Revenue	30,000	33,000	36,300	39,930	43,923	48,315	53,147	58,462	64,308	70,738
Ave. Selling Price of Rice/sack	750 00	825 00	907 50	998 25	1 098 08	1,207 88	1,328 67	1,461 54	1,607 69	1,768 46
# of sack sold	1,800	1,980	2,178	2,396	2,635	2,899	3,189	3,508	3,858	4,244
Rice Trading Revenue	1,350,000	1,633,500	1,976,535	2,391,607	2,893,845	3,501,552	4,236,878	5,126,623	6,203,214	7,505,888
Ave. Selling Price of Fert /bag	350 00	385 00	423 50	465 85	512 44	563 68	620 05	682 05	750 26	825 28
# of bags sold	10,000	10,000	10,000	10,000	10,000	10,000	10 000	10,000	10,000	10 000
Fertilizer trading Revenue	3,500,000	3,850,000	4,235,000	4,658,500	5,124,350	5,636,785	6,200,464	6,820,510	7,502,561	8,252,817
Ave. Selling Price of Chem./liter	600 00	660 00	726 00	798 60	878 46	966 31	1,062 94	1,169 23	1,286 15	1,414 77
# of liters sold	4,000	4,000	4,000	4 000	4,000	4,000	4,000	4 000	4 000	4,000
Chemical Trading Revenue	2,400,000	2,640,000	2,904,000	3,194,400	3,513,840	3,865,224	4,251,746	4,676,921	5,144,613	5,659,074
<b>TOTAL REVENUES FROM TRADING</b>	<b>7,250,000</b>	<b>8,123,500</b>	<b>9,115,535</b>	<b>10,244,507</b>	<b>11 532,035</b>	<b>13,003,561</b>	<b>14,689,088</b>	<b>16,624,054</b>	<b>18,850,388</b>	<b>21,417,780</b>
<b>TOTAL SALES REVENUES</b>	<b>7,754,000</b>	<b>8,677,900</b>	<b>9,725,375</b>	<b>10,915,331</b>	<b>12,269,941</b>	<b>13,815,258</b>	<b>15,531,955</b>	<b>17,606,207</b>	<b>19,930,756</b>	<b>22,606,185</b>

## WORKING CAPITAL REQUIREMENTS

### COST OF SALES

Cost of Rice	681.82	750.00	825.00	907.50	998.25	1,098.08	1,207.88	1,328.67	1,461.54	1,607.69
Purchases Rice	1,227,273	1,485,000	1,796,850	2,174,189	2,630,768	3,183,229	3,851,708	4,660,566	5,639,285	6,823,535
Cost of Fertilizer	318.18	350.00	385.00	423.50	465.85	512.44	563.68	620.05	682.05	750.26
Purchases Fertilizer	3,181,818	3,500,000	3,850,000	4,235,000	4,658,500	5,124,350	5,636,785	6,200,464	6,820,510	7,502,561
Cost of Chemicals	545.45	600.00	660.00	726.00	798.60	878.46	966.31	1,062.94	1,169.23	1,286.15
Purchases Chemicals	2,181,818	2,400,000	2,640,000	2,904,000	3,194,400	3,513,840	3,865,224	4,251,746	4,676,921	5,144,613
<b>TOTAL PURCHASES</b>	<b>6,590,909</b>	<b>7,385,000</b>	<b>8,286,850</b>	<b>9,313,189</b>	<b>10,483,668</b>	<b>11,821,419</b>	<b>13,353,717</b>	<b>15,112,776</b>	<b>17,136,716</b>	<b>19,470,709</b>
<b>PURCHASE INVENTORY (ONE CROPPING)</b>	<b>3,295,455</b>	<b>3,692,500</b>	<b>4,143,425</b>	<b>4,656,594</b>	<b>5,241,834</b>	<b>5,910,710</b>	<b>6,676,858</b>	<b>7,556,388</b>	<b>8,568,358</b>	<b>9,735,354</b>
SALES CREDIT (3 Mos)	1,812,500	2,030,875	2,278,884	2,561,127	2,883,009	3,250,890	3,672,272	4,156,013	4,712,597	5,354,445
MINIMUM CASH BALANCE REQD	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
<b>TOTAL CURRENT ASSET</b>	<b>5,157,955</b>	<b>5,773,375</b>	<b>6,472,309</b>	<b>7,267,721</b>	<b>8,174,843</b>	<b>9,211,600</b>	<b>10,399,130</b>	<b>11,762,401</b>	<b>13,330,955</b>	<b>15,139,799</b>
<b>WORKING CAPITAL MARGIN AT 20% OF MAX CURRENT ASSET</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>	<b>3,027,960</b>
<b>WORKING CAPITAL LOAN REQUIRED</b>	<b>2,129,995</b>	<b>2,745,415</b>	<b>3,444,349</b>	<b>4,239,761</b>	<b>5,146,883</b>	<b>6,183,640</b>	<b>7,371,170</b>	<b>8,734,442</b>	<b>10,302,995</b>	<b>12,111,839</b>
<b>INTEREST RATE ON WORKING CAPITAL LOAN (%)</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>	<b>17.00</b>
<b>INTEREST ON WORKING CAPITAL LOAN</b>	<b>362,099</b>	<b>466,721</b>	<b>585,539</b>	<b>720,759</b>	<b>874,970</b>	<b>1,051,219</b>	<b>1,253,099</b>	<b>1,484,855</b>	<b>1,751,509</b>	<b>2,059,013</b>

## REPAYMENT OF CAPITAL AND INTEREST

### Loan at the Beginning of the year

Building	1,000,000	900,000	800,000	700,000	600,000	500,000	400,000	300,000	200,000	100,000
Rice Mill	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	50,000
<b>Total Loan at Beginning of Year</b>	<b>1,500,000</b>	<b>1,350,000</b>	<b>1,200,000</b>	<b>1,050,000</b>	<b>900,000</b>	<b>750,000</b>	<b>600,000</b>	<b>450,000</b>	<b>300,000</b>	<b>150,000</b>
Interest rate (in%)	14	14	14	14	14	14	14	14	14	14
Interest Payable	210,000	189,000	168,000	147,000	126,000	105,000	84,000	63,000	42,000	21,000
Repayment of principal										
Building	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Rice Mill	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
<b>Total Repayment at End of Year</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>	<b>150,000</b>

## SCHEDULE OF DEPRECIATION

Building	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Less: depreciation	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Accumulated Depreciation	80,000	160,000	240,000	320,000	400,000	480,000	560,000	640,000	720,000	800,000
<b>Net Value</b>	<b>920,000</b>	<b>840,000</b>	<b>760,000</b>	<b>680,000</b>	<b>600,000</b>	<b>520,000</b>	<b>440,000</b>	<b>360,000</b>	<b>280,000</b>	<b>200,000</b>
Solar Dryer	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Less : depreciation	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
Accumulated Depreciation	16,000	32,000	48,000	64,000	80,000	96,000	112,000	128,000	144,000	160,000
<b>Net Value</b>	<b>184,000</b>	<b>168,000</b>	<b>152,000</b>	<b>136,000</b>	<b>120,000</b>	<b>104,000</b>	<b>88,000</b>	<b>72,000</b>	<b>56,000</b>	<b>40,000</b>
Rice Mill	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
less : depreciation	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Accumulated Depreciation	40,000	80,000	120,000	160,000	200,000	240,000	280,000	320,000	360,000	400,000
<b>Net Value</b>	<b>460,000</b>	<b>420,000</b>	<b>380,000</b>	<b>340,000</b>	<b>300,000</b>	<b>260,000</b>	<b>220,000</b>	<b>180,000</b>	<b>140,000</b>	<b>100,000</b>

## OPERATINGS COSTS & EXPENSES

OPERATING COSTS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Purchase of stocks	6 590 909	7,385 000	8,286 850	9,313,189	10,483,668	11,821,419	13 353,717	15,112,776	17,136,716	19 470 709
Salaries & Wages	140,000	154 000	169 400	186,340	204 974	225,471	248,019	272,820	300,102	330,113
Labour Costs	50,000	55,000	60,500	66 550	73,205	80,526	88,578	97,436	107,179	117,897
Water,Power & Fuel	24,000	26,400	29,040	31,944	35,138	38,652	42,517	46,769	51 446	56,591
Insurance & Licenses	30,000	31 500	33 075	34,729	36,465	38,288	40,203	42,213	44,324	46,540
Supplies	20,000	21,000	22,050	23 153	24,310	25,526	26,802	28,142	29,549	31,027
Repairs & Maintenance	5,000	6 000	7,200	8,640	10,368	12,442	14,930	17,916	21,499	25,799
Interest on working Capital	362,099	466,721	585,539	720,759	874,970	1,051,219	1 253,099	1,484,855	1,751,509	2,059,013
<b>TOTAL COSTS &amp; EXPENSES</b>	<b>7,222,008</b>	<b>8,145,621</b>	<b>9,193,654</b>	<b>10,385,303</b>	<b>11,743,099</b>	<b>13,293,543</b>	<b>15,067,864</b>	<b>17,102,927</b>	<b>19,442,325</b>	<b>22,137,688</b>
<b>PROFIT BEFORE DEPRECIATION AND INTERESTS</b>	<b>531,992</b>	<b>532,279</b>	<b>531,721</b>	<b>530,028</b>	<b>526,842</b>	<b>521,715</b>	<b>514,091</b>	<b>503,280</b>	<b>488,431</b>	<b>468,498</b>
<b>INTEREST</b>	<b>210,000</b>	<b>189 000</b>	<b>168,000</b>	<b>147,000</b>	<b>126,000</b>	<b>105,000</b>	<b>84,000</b>	<b>63,000</b>	<b>42,000</b>	<b>21,000</b>
<b>PROFIT BEFORE DEPRECIATION</b>	<b>321,992</b>	<b>343,279</b>	<b>363,721</b>	<b>383,028</b>	<b>400,842</b>	<b>416,715</b>	<b>430,091</b>	<b>440,280</b>	<b>446,431</b>	<b>447,498</b>
<b>DEPRECIATION</b>	<b>136,000</b>	<b>136,000</b>	<b>136,000</b>	<b>136,000</b>	<b>136,000</b>	<b>136,000</b>	<b>136 000</b>	<b>136,000</b>	<b>136,000</b>	<b>136,000</b>
<b>PROFIT AFTER INTEREST AND DEPRECIATION</b>	<b>185,992</b>	<b>207,279</b>	<b>227,721</b>	<b>247,028</b>	<b>264,842</b>	<b>280,715</b>	<b>294,091</b>	<b>304,280</b>	<b>310,431</b>	<b>311,498</b>
<b>OPERATING CASH FLOW</b>	<b>531,992</b>	<b>532,279</b>	<b>531,721</b>	<b>530,028</b>	<b>526,842</b>	<b>521,715</b>	<b>514,091</b>	<b>503,280</b>	<b>488,431</b>	<b>468,498</b>

## CASH FLOW OF THE PROJECT

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Building and Rice Mill	(1,500,000)										
Solar Drier (Coops' Equity)	(200,000)										
Operating Cash Flow		531,992	532,279	531,721	530,028	526,842	521,715	514,091	503,280	488,431	468,498
Net salvage value of bldg/drier and rice mill											340,000
Recovery of Equity											200,000
<b>NET CASH FLOW</b>	<b>(1,700,000)</b>	<b>531,992</b>	<b>532,279</b>	<b>531,721</b>	<b>530,028</b>	<b>526,842</b>	<b>521,715</b>	<b>514,091</b>	<b>503,280</b>	<b>488,431</b>	<b>1,008,498</b>

## COMPUTATION OF COST OF CAPITAL

Equity	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Net Cash Flow	531,992	532,279	531,721	530,028	526,842	521,715	514,091	503,280	488,431	468,498	1,008,498
Less : Interest and Repayment	360,000	339,000	318,000	297,000	276,000	255,000	234,000	213,000	192,000	171,000	171,000
Net Cash Surplus	171,992	193,279	213,721	233,028	250,842	266,715	280,091	290,280	296,431	296,431	837,498
Dividend @ 50% of cash surplus	85,996	96,640	106,860	116,514	125,421	133,358	140,045	145,140	148,216	148,216	418,749
Dividend as a fraction of equity	0.430	0.483	0.534	0.583	0.627	0.667	0.700	0.726	0.741	0.741	2.094
Percentage Dividend	43.00	48.32	53.43	58.26	62.71	66.68	70.02	72.57	74.11	74.11	209.37
Average Dividend	75.85										
Debt	1,500,000	1,350,000	1,200,000	1,050,000	900,000	750,000	600,000	450,000	300,000	300,000	150,000
Interest on Debt (%)	14	14	14	14	14	14	14	14	14	14	14
Weighted cost of capital (%)	17.41	18.43	19.63	21.08	22.86	25.09	28.01	32.02	38.04	38.04	125.64
Weighted average cost of capital (%)	34.82										
Weighted Average cost of capital	0.35										

## PROJECT COSTS

	YEAR 0
Building & Dryer	1,200,000
Rice Mill	500,000
Working Capital Margin	3,027,960
<b>TOTAL PROJECT COSTS</b>	<b>4,727,960</b>



CALCULATION OF NET PRESENT VALUE AT

	20%										
	Year 0	Year1	Year 2	Year 3	Year 4	Year5	Year 6	Year7	Year 8	Year 9	Year 10
Cash Flow	1,700,000	531,992	532,279	531,721	530,028	526,842	521,715	514,091	503,280	488,431	1,008,498
Discount or present value Int. factor		0.8333	0.6944	0.5787	0.4823	0.4019	0.3349	0.2791	0.2326	0.1938	0.1615
Present Value of Cash Flow		443,327	369,638	307,709	255,608	211,726	174,721	143,473	117,047	94,661	162,878
<b>NET PRESENT VALUE</b>	<b>580,788</b>										

CALCULATION OF INTERNAL RATE OF RETURN

Cash Flow		1,700,000	531,992	532,279	531,721	530,028	526,842	521,715	514,091	503,280	488,431	1,008,498
Present value interest factor at 30%	1.000		0.769	0.592	0.455	0.350	0.269	0.207	0.159	0.123	0.094	0.073
Present value at 30%	1,700,000		409,224	314,958	242,021	185,578	141,894	108,087	81,929	61,697	46,059	73,155
Present value interest factor at 29%	1.000		0.775	0.601	0.466	0.361	0.280	0.217	0.168	0.130	0.101	0.078
Present value at 29%	1,700,000		412,397	319,860	247,693	191,399	147,480	113,213	86,479	65,628	49,374	79,027

Internal Rate of Return = 30% +  $\frac{1,664,602}{1,664,602} - \frac{1,700,000}{1,712,551}$  X 1%

IRR = 30% +  $\frac{(35,398)}{(47,949)}$  X 1%

30% + 0.74

IRR = 30.74%

## CHAPTER VIII

### SOCIO-ECONOMIC STUDY

#### A. Economic Benefits

With the establishment of the Grain Center Project, the following economic benefits shall be obtained by the target project beneficiaries:

1. Increase in farm income through minimized farm wastage. Marketing of palay / rice at better price and acquisition of farm inputs at farm level at a minimum price.
2. Improved farmers postharvest handling activities, such as the provision of milling, drying, and storage facilities; establishment of a good market outlet.
3. Solve the milling, drying, storage and marketing problems of the farmers in the community.
4. Make use of opportunity to avail the services and benefits of government and private institutions and get involve in development programs.
5. Generate employment opportunities.
6. Enhance economic growth of the community.

#### B. Social Desirability

Aside from the economic benefits mentioned above, the following social benefits could also be derived from the project:

1. Promote cooperation, self-reliance and discipline among cooperative members.
2. Enhance development of their managerial capability and competence.
3. Promote people's participation in the development activities.
4. Improve the quality of life of the people in the service area.
5. Provide as a model or demonstration to other organizations in nearby barangays or municipalities.

## CHAPTER IX

### RECOMMENDATIONS

The establishment of the Farmers' Integrated Grains Center in Barangay Badiang, New Lucena, Iloilo is shown to be financially viable at the same time solve the post harvest problem of the cooperative members and non-members in the target area to be served.

The project would increase the income of the target beneficiaries through the acquisition of farm inputs at minimal cost, minimized wastage of farm produce and the marketing of their paddy at a higher price. With the establishment of the project, the marketable surplus of their farm produce (paddy) could be dried, stored and properly processed at the grain center which could be directly sold to the center or other rice traders when prices are favorable.


The project would likewise generate employment opportunities to the members of the cooperative as well as develop their managerial skills and capabilities during the project operation.

Through this project, the farmer-beneficiaries could avail the maximum services of the government and private institutions involved in economic development programs, thus, they shall become partners in economic development activities for their social well being.

It is therefore strongly recommended that this project should be financed so that it could be established. Evidences are strong for its viability.

It is further recommended that government and private institutions involved in the realization of this project should be sincere in extending their full support and assistance to the target beneficiaries for the successful implementation of the project. Evaluation and monitoring of the project activities and progress should be done regularly to prevent or correct loop holes in the process of project implementation.

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

  
24.2.98 (12)

**PROJECT PROPOSAL**

Title of the  
Project Proposal : **Establishing A Model Fishery  
Cooperative Federation in the  
Bicol Region**

Country : **Philippines**

Project Proposal  
Prepared by : **Ms. Estrella R. Hernandez**

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
**India, Philippines and Japan**



**INTERNATIONAL COOPERATIVE ALLIANCE**

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Geneva, Switzerland

*Regional Office for Asia & the Pacific*

'Bonow House'  
43 Friends Colony (East)  
New Delhi 110 065, India

# PROJECT PROPOSAL

## A. Basic Information

### 1. Title of the Project

Establishing A Model Fishery Cooperative  
Federation in the Bicol Region

2. Implementing Agency: FDSSD, BFAR
3. Head of Agency: Dennis B. Araullo  
Director
4. Address: FDSSD, Estuar Bldg.  
BFAR, Quezon Ave,  
Q.C.
5. Collaborating Agency: CUP, CDA, LGU, NGO &  
PFDA
6. Target Beneficiaries: Fisherfolks
7. Expected Output:
  - Organized Fisheries Cooperative/Federation
  - Number of Fisheries Coop Assisted
  - Number of Trainings Implemented &  
Number of Participants
  - Development of Good Leaders/Managers  
of Fisheries Cooperative
  - Fisheries Cooperative Operation of  
Camaligan Fish Port

## **B. Technical Description/Background**

- 1. Situation Analysis**
- 2. Project Significance**
- 3. Objectives**
- 4. Strategy and Implementation**
- 5. Cost and Return Analysis/Project Activity**
- 6. Manpower Requirements**
- 7. Support Facilities (Laboratory, Equipment etc.)**
- 8. Workplan Schedule**
- 9. Project Budget Estimate**
  - a. Budget estimate/Major activity**
  - b. Summary Budget Estimate/Major Activity**
- 10. Proponent/Implementing Agency**

## INTRODUCTION

The Philippine is bestowed with rich aquatic and marine resources and the fishing industry is one of the frontiers of the Philippine economy.

The Bureau of Fisheries and Aquatic Resources (BFAR) is one of the bureaus under the Department of Agriculture (DA) mandated to support the responsibility of providing fishing development through proper conservation, utilization and management of the country's fishery resources.

Considering the vast fishery resources of the Philippines, the marine resources consist of 220,000,000 ha. territorial waters which was both coastal and oceanic, 27,000 square kilometer corral reef area within 10-20 fathoms where fisheries occur, shelf area (depth of 20 fathoms) of 18,460,000 ha. and 17,460 km coastline and inland resources consisting of swamp lands of 338,393 ha., existing fishponds of 253,954 ha. and other inland resources of 250,000 ha. which consist lakes, rivers and reservoirs, yet the fishery sector has not fully tapped its full potential due to the fact that fisherfolks still remain to be the poorest of the poor.

According to the Philippine Fisheries Profile of 1996, the Philippines ranked no. 12th among the largest fish producers in the world for 1994. It was also the second biggest producing tuna and tuna like fishes in the Indian Ocean and Southeast Asia Region in 1991 and 3rd biggest producer of seaweeds and other aquatic plants contributing 5.2 % (0.405 million metric ton) in the world production of 7.893 million metric ton in 1994.

It also accounted for a 3.5% (P 2.19 billion) and 3.9% (P 32.9 billion) of our country's Gross Domestic Product (GDP) at current and constant price. It has also given the largest share of the Gross Value Added (GVA) of 16.2 % (P 76.2 billion) next to agricultural crops and provided employment to about one million or 5% of the country's labor force as well as their dependents.

About 258,480 fishfarmers depend their livelihood on aquaculture, municipal about 675,677 and commercial fisheries, 56,715 which does not include the members of fishermen families and others who are engaged in related activities such as processing, selling and many other fishery activities who are the potential benefactors and supporters of fishery cooperatives.

As to the performance of the fishing industry, the average annual growth rate from 1987-1996 was 2.5%. Positive growth rate of 6.4% and 4.5% were although municipal fishing has been declining 1.7% due to coastal depletion and illegal fishing.

Output of the fishing industry slightly decreased by 0.5% for 1996 in contrast to the 3.5% growth rate in 1995. Fishery sectors that posted decrease were commercial fisheries, 1.6% municipal fisheries 6.5% but on the other hand 96.7% increased in production was realized in aquaculture fisheries which contributed 35% and commercial fisheries, 32% in the production.

In terms of value, the highest share of 40% was in aquaculture followed by municipal of 31% and commercial, 29%.



The Philippines exported a total of P 15.110 Billion in 1996 (P 164,633,000) decrease of almost 3.5% in value and volume while imports of fish and fishery products likewise decreased by almost 8% in terms of value.

With the size of the average of the Filipino people dependent on the fisheries industry, our government thru BFAR has realized the need for effective programs in answer to the plight of the fisherfolks.

Through coordination with CDA and CUP, BFAR has recognize the urgency in assisting in the organization of the fishery sector into cooperatives. Our government thrusts are directed towards enabling them to explore the unlimited opportunities provided by unity and cooperation.

## BACKGROUND & TECHNICAL DESCRIPTION

### I. Situational Analysis A. Environment

The Bicol Region (Region V) is a conglomeration of several sub-peninsulas with a very lengthy coastline. There are several coastal embayments all of which penetrates deep into the main land mass. Six (6) provinces compose the region. Albay, Camarines Sur, Camarines Norte, Catandunes, Masbate and Sorsogon. Comparatively, it's mineral resources are little but these are compensated by large quantities of land, extensive on rich fishing grounds, large coconut and abaca plantations.

Fishing, logging, saw-milling, livestock, poultry and handicrafts are the main economic activities of the region. Fishing is a very important industry in the region which is bestowed with significant marine resources and excellent fishing grounds.

Although the region is very rich in fishery resources, the fisherfolks are still generally poor due to lack of knowledge and skill to increase production and income.

### B. Resources

The fishery resources of the region particularly Camarines Sur and Camarines Norte have the best fishing grounds like San Miguel Bay, Lagonoy Gulf, Lamón Bay, Ragay Gulf and the Pacific Ocean which yield one of the highest harvest in the country. Aside from that, they had one of the fishing port which is the Camaligan Fishing Port which has cold storage, ice

plant and other facilities best suited in the preservation of fish, fish storage and processing. The fishing port complex is not operational due to lack of good managers and lack of funds for operation.

Generally, the region derives its fish production from commercial and municipal fisheries with an average production of 2,625,607 metric tons annually with agriculture sector contributing 0.07% of the total production.

### C. Present Trend of Resource Exploitation

Due to deforestation and intense logging in the region, the forests have been denuded which resulted in the depletion of natural resources. It also affects the destruction of natural habitat of fish and corral reefs. Adding to this, is the unabated illegal fishing and the use of prohibited explosives which cause economic, social and health crisis to the people who are already living in poverty.

### D. What Is Being Done?

The Philippine Government through the Department of Agriculture and the BFAR and other concerned agencies are working together to address the worsening poverty in the region. It is extending support services and helps spread the benefits of development particularly the small-scale fisherfolks. It is envisioning to increase their real income generating projects such as fish processing and other profitable projects that will improve their standard of living. This goal can be achieved through the development of fisheries cooperative/federation.

## II. Project Significance

The DA is mandated by the government to promote agricultural and fishery development and growth through increased productivity. The BFAR as a staff agency of the DA, extend support services necessary to help spread the benefits of development particularly to the small scale fisherfolks shall be pursued to achieve the national goal of poverty alleviation, generating production opportunities and promoting sustainable economic growth.

The ultimate goal is to increase the real income of the less generating fishery projects and should be introduced so that they will be profitable through the development of fishery cooperatives/federations. Fisherfolks shall be organized/reactivated into cooperative/federation under the guidance of the government in whatever form of service.

## III. Objectives

The main objective of the program is to establish a model Fishery Cooperative Federation as a tool in developing the capability of the fisherfolks to engage jointly rather than individually in productive endeavor as a means of improving their standard of living.

Specifically, it's objectives are:

1. To collaborate/coordinate with other government and private agencies and international institutions involved in the organization and development of fisheries cooperative/federation.

2. To help the fisherfolks organize or reactivate into fish cooperative / federation.
3. To help identify problems in the management of fisheries cooperative.
4. To work out if not partially turn-over and operation of the Camaligan Fishing Port to the fisheries federation management.
5. To provide training/assistance in the development of proper management of fisheries cooperative/federation.
6. To develop global competitiveness in the export market.

#### IV. Strategy of Implementation

The project will be undertaken in collaboration with CUP, CDA, LGU and NGO's and other agencies involved in the organization of fisheries cooperative/federation.

The Bicol Region has been chosen as the pilot area for cooperative organization/ federation. Initially fisheries cooperative shall be organized/ reactivated in each province without existing organization. Identification shall be based on fishery resources available for the introduction of livelihood projects and member of small-scale fisherfolks benefited. One of the main reason for the selection of Bicol Region as the pilot seen is to be able to make operational the Camaligan Fishing Port Complex which has the facilities that will benefit the fisherfolk members in their

fish production and processing which eventually will increase their real income.

The program will be implemented by BFAR in collaboration with CUP and other cooperating agencies, NGO's and LGU's. BFAR staff in coordination with CUP will monitor the progress of the program implementation.

The training program management will be divided into three (3) phases.

#### A. Pre-Training Activities

Training need assessment of the targeted clientele in six (6) provinces shall be conducted to determine the pre-entry level of the participants and to consider the pre-requisite of trainees before availing the training course. This will be accomplished through the administration of survey questionnaires coupled with individual interview of prospective clients. Corollary to this, community baseline survey for every targeted community shall be conducted in coordination with local government units to serve as bench mark of the project.

Survey of the training site, information dissemination and coordination with the local officials to tap their support services well and likewise be conducted in the target area. Other activities includes the preparation of training plan, course design, reproduction of hand-outs, instructional aids development and processing of needed training supplies and materials.

#### B. Training Activities

Training approaches are combination of traditional and experiential or “learning by doing”. The bigger percentage of the training is concentrated in actual job application or practicum based on theories discussed in the lecture. Medium of instruction will be in English, Filipino and dialect used in the area.

Periodic training session evaluation will be undertaken by the BFAR staff to determine the level of knowledge and skills gained by the participants and the applicability of the subject matter to them. At the end of the course, an evaluation to determine the over-all effectiveness of the training program will be conducted. Data to be gathered shall be serve as a basis for the revision/improvement of the future training activities. Evaluation of methodology is through administration of questionnaire.

### C. Post-Training Activities

After of period of six months to one year a follow-up monitoring and evaluation will be conducted to assess the impact of the program and determine the status of the training. Methodologies to be used in the evaluation is the administration of questionnaires coupled with interviews with the assistance of the extension worker and local officials in the area.

All evaluation activities will be undertaken by the BFAR staff in coordination with CUP staff. After evaluation and when the result is favorable then a replication in other regions/ area will follow.

## **V. Manpower Requirement**

The FDSSD, BFAR in collaboration with CUP will provide the necessary manpower to implement the project. However, resource person from other agencies will be hired in the implementation of the program.

## **VI. Support Facilities**

The FDSSD, BFAR and CUP will make available all the existing training equipment, materials and facilities that may be needed for the implementation of the project.



## **Annex:**

**Course Title: Training Course on Cooperative Education**

**Course Description:** The training aims to impart knowledge and skills on basic requirements and qualification on how to organize cooperative. Also it aims to organize and register fisherfolks cooperative federation to CDA. Output of training is the finalization of basic requirement for registration.

**Trainees/Duration:** 50 trainees for 3 days duration

**Course Content:** Topics will include the ff.:

- 1. Cooperative Principles & Practices**
- 2. Cooperative Code of the Philippines**
- 3. Allocation & Distribution of Net Surplus**
- 4. Sources of Financing**
- 5. Factors of Success of Cooperative**
- 6. Requirements for Registration**

**Target Areas:** Bicol Region/6 Fisheries Cooperative in 6 provinces

## Budgeting Requirements:

### 1. Traveling Expenses

- Plane fare RT for 4 Persons & 2 training staff (P1,800 x 6 persons x 6 provinces)	P 64,800
- Bus fare (P300 x 6 x 6)	P 10,800
- Taxi fare (P200 x 6 x 6 persons)	P 7,200
- Per diems (P135 x 5 days x 6 x 6 persons)	<u>P 24,300</u>
	P107,100

### 2. Honoraria for 4 Resource Persons

(P1,000 x 4 x 6) P 24,000

### 3. Meals & Snacks for trainees/staff

(P300/person for 50 x 3 days x 6) P270,000

### 4. Training Supplies & Materials

P 30,000

TOTAL P431,100

10% contingency cost P 43,110

TOTAL P474,210

## **Annex:**

### **Course Title: Training Course for Strengthening Management of Fisheries Cooperative**

**Course Description:** The training aims to develop capable managers of fisheries cooperative which eventually will help strengthen and improve fisheries cooperative performance and bring about qualitative and quantitative improvement in cooperative services to member fisherfolks to the grass root level with ultimate objective of increasing members income and ensuring active participation in cooperative business.

It will be conducted through participative methods, group works based on assignments given by resource persons such as case studies, group exercises, lectures and discussions, field visits and preparation of model plans for their cooperative, prepare budgets, financial statements and field situation reports.

**Training/Duration:** 30 trainees for a 5 day duration

**Course Content:** Topics will include the ff.

1. Management Principles, Methods and Techniques with special reference to management leadership development on fisheries cooperative

2. Workshop  
( Case Writing Method & Techniques)

3. Field Visits.

Target area: Bicol Region  
( 5 Coop Leaders in Each Province)

Budgetary Requirements:

1. Traveling Expenses

-plane fare	P 64,800
-bus fare	P 10,800
-taxi fare	P 7,200
-per diems	P 24,300
-bus hire	<u>P 12,000</u>
	P119,100

2. Honoraria P 24,000

3. Meals & Snacks

(P300 x 30 x 3 x 6) P270,000

4. Training Supplies & Materials P 30,000

TOTAL P443,100

10% contingency cost P 44,310

TOTAL P487,410

## **Annex:**

**Course Title: Training on Fish Processing**

**Course Description:** The training aims to develop/upgrade the knowledge and skills of the participants in different fish processing methods. It will be conducted through lecture and/or discussions, demonstrations and practicum.

**Training/Duration:** 30 trainees for 3 days

**Course Content:** Topics will include the ff.

- 1. Fish Handling**
- 2. Fish Sanitation and Hygiene**
- 3. Traditional Methods of Fish Processing**
- 4. Bangus Deboning**
- 5. Shrimp Kropeck Manufacture**
- 6. Fish balls Manufacture/Spicy Dilis**
- 7. Basic Accounting./Bookkeeping**

# Budgetary Requirement

## 1. Traveling Expense

-plane fare for 3 resource persons and 2 staff	P 54,000
- bus fare (P300 x 5 x 6)	P 9,000
- taxi fare	P 6,000
- per diems	<u>P 20,250</u>
	P 89,250

2. Honoraria P 18,000

3. Meals & Snacks  
for 30 pax x 5 x 6 P 270,000

4. Training Supplies & Materials P 30,000

TOTAL P 407,250  
10% contingency cost P 40,725

TOTAL P447,975

## WORKPLAN SCHEDULE

ACTIVITIES	TARGET	AGENCY CONCERNED	1998				1999				
			1	2	3	4	1	2	3	4	
			jan-feb-mar	apr-may-jun	jul-aug-sept	oct-nov-dec	jan-feb-mar	apr-may-jun	jul-aug-sept	oct-nov-dec	
1. Coordination	15 coops	S e  L e g e n d	-----								
2. Identification/ Assessment				-----							
3. Organization					-----						
4. Preparation of Training Materials						-----					
5. Training							-----	-----			
6. Monitoring and Evaluation									-----	-----	

**LEGEND :**

- PFDA : Philippine Fisheries Development Authority
- BFAR : Bureau of Fisheries and Aquatic Resources
- CUP : Cooperative Union of the Philippines
- CDA : Cooperative Development Authority
- LGU : Local Government Unit
- NGO : Non-Government Organization

**PROJECT BUDGET ESTIMATE**

Items	1998	Amount	1999	Amount	TOTAL
I. Personal A. Salaries/Wages B. Honoraria C. Others Sub-total	BFAR Existing Plantila	P 33000	BFAR Existing Plantila	P 33000	P 66,000
II. Maintenance & Other Operating Expense (MOOE) A. Travel B. Communicating C. Supplies & Materials D. Conduct of Training, Seminar, Workshop E. Printing		157725	810000	157725	P315,450
III. Equipment Outlay IV. Additional Costs		70480		70480	P140,960
A. Administrative B. Contingency (10%)				128145	P128,145
TOTAL					P1,550,555



**SUMMARY OF BUDGET ON THE CONDUCT OF  
TRAINING, WORKSHOPS AND SEMINARS**

<b>1. Training Coopertive Evaluation</b>	<b>P 474,210</b>
<b>2. Training Course for Strengthening Management of Fisheries Cooperative</b>	<b>P 487,450</b>
<b>3. Training Course on Fish Processing</b>	<b>P 447,975</b>
	<b>=====</b>
	<b>P1,409,595</b>
<b>Administrative Cost (10%)</b>	<b>P 140,960</b>
	<b>=====</b>
<b>Total Budget</b>	<b>P 1,550,555</b>

## BUDGET ESTIMATES OF MAJOR ACTIVITIES

<b>Major Activities</b>	<b>MOOE*</b>	<b>Additional Cost</b>	<b>Grand Total</b>
1. Coordination	1.281.930	268,625	P1.550.555
2. Indentification/ Assesment			
3. Organization			
4. Preparation of Training Materials			
5. Training			
6. Monitoring and Evaluation			
	=====	=====	=====
<b>Total Budget</b>	<b>1.281.930</b>	<b>268,625</b>	<b>P1.550.555</b>

**\*MOOE = Maintenance and other operating expenses**

**SUMMARY OF COURSE**  
 FDSSD Program for Bicol Region  
 CY 1998-1999

COURSE TITLE	NO. OF COURSES	TARGET NO. OF TRAINEES
1. Training on Cooperative Education	6	300
2. Training Course for Strengthening Management of Fisheries Cooperative	6	180
3. Training on Fish Processing	6	180
<b>TOTAL</b>	<b>24</b>	<b>660</b>

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
ON  
"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

**PROJECT PROPOSAL**

Title of the  
Project Proposal : Small Farmers Development Project  
Badulla District.

Country : Sri Lanka.

Project Proposal  
Prepared by : Padmini Kusumalatha Alahakoon.

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
**in collaboration with its Member-Organisations in**  
**India, Philippines and Japan**



**INTERNATIONAL COOPERATIVE ALLIANCE**

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# C O N T E N T S

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## ACKNOWLEDGEMENT

At first I would like to express my gratitude to International Co-operative Alliance ROAP and Agriculture Ministry of Japan for providing me with this opportunity to study about agricultural Co-operative movement in Asia.

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Thanks also to Mrs. K. A. P. Nilanthi for helping me to computerise this project proposal.

# Chapter - I

## SUMMARY

The small farmers Development Project is prepared for poor small farmers in Badulla District. The project will be implemented and run by National Cooperative Council of Sri Lanka; Collaborate with two multipurpose Cooperative Societies in Badulla District.

The main objectives of this project are: -

- to introduce small farmers about the modern agricultural methods to increase productivity,
- to change their attitudes towards the modern technology, that are environmentally sustainable and
- to motivate them to face the predicted famine which the whole world will experience in the year 2005.

The target group, small farmers has been selected from 20 villages which are located in two multipurpose Co-operative Society areas in Badulla district.

Total investment for the project will be 2.1025 million rupees (35 thousand Us \$) Donation will be expected from Peoples Bank, Agriculture Ministry of Uva Province, and the Cooperative Fund.

This project will be expected to begin in 1999 and completed by 2004. A demonstration farm will be conducted during the project period.

## **Chapter - 2**

### **BACK GROUND**

#### **2.1 Over all situation**

Sri Lanka is a small beautiful Island situated in the Indian Ocean. From North to South the Island is 425 k.m. long and West to East it is 225 k.m. wide. The Island has tropical climate.

The Population of Sri Lanka is 18.2 million. The economy of Sri Lanka is both agricultural and trade based.

The most important feature of the economy of our country is Agriculture.

Main Agricultural products are paddy cereals Spices, Vegetables and Fruits. Tea, Rubber and Coconut products are important exports and Spices are also exported to overseas markets. Agriculture as the Single largest productive sector in Sri Lanka economy accounts for 27% G. D. P. The decreasing of agricultural lands with increase of population is a prominent feature in the agricultural sector. 44% of the land cultivated are around four acres each. The per capita land size in 1949 was 1.35 He. It decreased to 0.95 in year 1973. During this period it has become 0.47. This can be specially noticed in the paddy production sector.

The main food of Sri Lanka is rice and vegetables. Considering the above factors, agriculture should be further developed.

The majority of the farmers in Sri Lanka are small farmers. There fore the contribution of the small farmers to the National Economy is considerably high. 80% of our population lives in the rural area and their main livelihood is agriculture.



In the Cooperative movement too the main source of living of the majority of the members is agriculture.

Out of the total membership in the Cooperative in Sri Lanka 84% are from agriculture Cooperative directly or in directly related to the agricultural field.

The main types of cooperatives are the multipurpose Cooperative Societies and Thrift and Credit Societies. As the activities of these two types of Cooperatives also include providing credit facilities, inputs marketing and purchasing for agricultural activities. Another important cooperatives are milk producers and agricultural small cooperative societies.

The milk producers societies are situated at Village Level and district level. There are 265 milk societies in Sri Lanka at present. Sri Lanka's milk production has stagnated and as our population growth is on the increase per capita consumption of milk has dropped precipitously.

Multipurpose Cooperative Societies & Sanasa Cooperative Societies were provided farm credit and chemical fertilizers. They were also given incentives by way of commissions on fertilizer distribution and farm credit disbursement with the objective of strengthening their capital base and business operations. The economic situation of the M. P. C. S. are considerably weakened since the introduction of the open market economic system; with drawal of farm subsidies and restricted purchase of agricultural products from the local farmers. With the deregulation of farm chemicals, chemical fertilizer except urea, seeds, the business level of M. P. C. Ss in rural agricultural area have gone down considerably.

Multipurpose Cooperative Societies in Agricultural area and agricultural Cooperative Societies (those are primary societies) have several limitations for examples, limited number of members, limited range of farm products, lack of farm machines, in experienced leaders and untrained employees and lack of infrastructure. Due to inadequate business operations above cooperatives

have lost credibility in certain areas. They lack capital, equipment and market access. Not only this factors but also credit supply has become expensive and deposit received from members are not productive due to no interest or very low interest given. Voluntary deposits in rural banks are negligible. Farm credit on concessional term is not available to the farmers. Finding market for the members product is becoming difficult. There are no value addition or agro processing activities undertaken by M P C S or any other agricultural societies. As a result much of farm products become unremunerative for the farmers. Looking at this situation it can be seen that small farmers in rural areas of Sri Lanka face poverty, illiteracy and ill-health.

The main objectives of the National Cooperative Council of Sri Lanka are to promote and develop the cooperative movement and to serve as an exponent of cooperative opinion to express views on behalf of the movement and represent it nationally and internationally.

As a national level organization National Cooperative Council of Sri Lanka is intervening to develop agricultural Cooperative movement. NCC has identified the problems faced by the agricultural Cooperatives as follows.

- On the credit area inadequate working capital of the Cooperative Societies resulting in delays in releasing loans to members.
- Lack of loan supervision and weak loan repayments and competition from privately owned financial institutions.
- Delayed receipt of fertilizer, Agro chemicals and Lack of agriculture equipment too are draw back.
- Lack of adequate and suitable transport facilities poses problems to the efficient marketing operations.
- Short comings in planning and plan implementation.
- Lack of cordination and inefficient and incompetent management,
- Lack of suitable market outlets.
- Lack of proper cordination and planning has hindered the development of this sector.

- Limited aptitude of the rural people to take advantage of science and technology.
- Comparatively low agricultural productivity by many farmers.
- Comparatively low rate capital information due to low savings and low investments.
- Population explosion a very high growth rate due to high birth rate and declining death rate due to various health measures under taken.

## **2.2 Area of the Project**

Sri Lanka is divided in to 8 provinces. Badulla district which is 200 km., away from Colombo, is in Uva province.

The population is 750 thousand in Badulla district. The male population is 412.5 thousand, and the female population is 337.5 thousand.

The temperature ranges between 20 to 40 centigrades. The climate is cooler and equiable temperature. There are precious, natural resources for agricultural sector in Badulla district for example water falls, mountains, organic resources, soil, Jungles, climate, etc.

The selected project area is Dehiwinipalatha (Atampitiya) and Uva Paranagama, (Ambagasdowa) multipurpose Cooperative society areas. The climate of this area very advantageous for agriculture.

The most important feature of the economy of this area is agriculture. Main agricultural products are Tea, Paddy, Vegetables, Fruits, Flowers and Spices. Most of the Land cultivated are less than 2 acres. The per capita land size in this area is 0.35 acres. So the majority of the farmers are small farmers. There fore contribution of these small farmers to the national economy is considerably high.

Number of Cooperative Societies in Badulla District

Society	Number of Societies	Number of Members (thousands)
Multipurpose	12	138.2
Thrift and Credit	227	28.3
Agricultural	38	3.1
Small industries	2	1.8

**Current situation of selected area**

Area	Number of Farm Families.	Dry	Muddy	Population		Members of Coop. Societies
		Land	Land	Male	Female	
		Hec.	Hec.			
Ambagasdowa	6877	1914	814	15129	12378	9452
Dehiwinipalatha	4087	5112	1291	13153	12876	8483

Ten villages has been selected in each cooperative societies as follows.

Society	Selected Area				
	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year
Dehiwini palatha	Abhayapura Warakadanda	Dehiwinna Kurukudegama	Maliththa Katugama	Neluwa Perahettiya	Uva Mahawela Gawela
Uva Paranagama	Perawella Galahagama	Ladduma Uma - Ela	Ambagasdowa Kadadoragama	Kumarapattiya Karagaha Ulpatha	Madawela Dangamuwa

Although many natural resources are available in this area farmers have not being able to utilise them to the maximum. Further although traditional agricultural families are found they also no development. The main economy of the families within the above Cooperative area is agriculture, they also resort to rearing milk cows as Cattle farming. The income per each family in around Rs. 2000 - 2500.

**Other facilities in this area**

	Dehiwinipalatha	Uva Paranagama
Schools	11	15
Temples	18	20
Hospitals	02	02
Other organisations		
Environment project	-	01
Farmers organizations	30	18
Retail shops	22	24
Milk Collection Centres	-	03
Rural Banks	07	05

**Cultivated Area**

Project Area	Paddy Hec.	Vegetable s Hec.	Milk Farmers	Total Land Hec.	Un cultivat Land
Uva Paranagama	998	2278	1172	3896	620
Dihiwinipalatha	658	5112	360	6403	633

## **2.3 Problems faced by farmers and Cooperatives of the Area**

The problems faced by farmers and cooperatives in this project area are as follows:

- Limited capacity of the farmers to take more yields by using new technology.
- Lack of knowledge, skills of farming methods.
- Lack of adequate and suitable transport facilities poses problems to the efficient marketing operation.
- Misuse of Chemicals, fertilizer and pesticides.
- Vulnerable situation from intermediaries to farmers. Most of small farmers depend on private money lenders.
- Poor knowledge of better health conditions and sanitary systems
- Poor knowledge of home budgeting
- Lack of women participation in the agricultural sector.
- Inadequate working capital of the cooperative societies to give loans to farmers to release loans in time.
- Lack of loan supervision and weak loan repayments.
- Delayed receipt of fertilizer, agro chemicals and lack of agricultural equipment are draw back.
- Lack of suitable market outlets.
- Increase, of suicide rates among low income groups.
- Agriculture lands are getting destroyed due to careless farming
- Lack of broader perspective to problems and all effects of superstitions.

## **2.4 Project rationale and Design Considerations:**

Looking at the current situation of small farmers in selected areas and to solve above problems it is essential to launch a wide programme as follows.

- to develop leadership qualities and organizational capacity of agricultural cooperative societies which is very essential for developing social and economic awareness.
- to understand ill effects of superstitions, prejudices and to develop a broader perspective to problems.
- to encourage and motivate farmers which enhance mutual cooperation and understanding between individuals and within community and their help in reduction of tension and conflict.
- to develop knowledge and skills for productivity
- to encourage women for income generation, activities and better farming methods.
- to encourage youth farmers to take advantage of organic farming and for using new technology.
- to develop sense of responsibility and accountability which help in developing self reliance.

## **Chapter - 3**

### **PROJECT**

#### **3.1 Objectives**

The objectives of the project are as follows.

- To introduce small farmers to modern agricultural methods to increase productivity.
- To change the attitudes of small farmers to use modern technology that are environmentally sustainable.
- To motivate small farmers to improve agricultural activities in order to face the predicted famine which the whole world might experience in the year 2005 as indicated by the world food programme.
- The secondary objective will be to improve the health, living conditions and economy of the small farmers of the project areas and to encourage women to get involved in the agricultural sector.

#### **3.2 Component of the project.**

To accomplish the above objectives, the following activities will be implemented.

- To provide knowledge and technical know - how on modern farm methods, systematic handling of chemicals and fertilizers, setting up a bio-gas plant and promote organic farming.
- Inculcation of cooperative action and small group activities.
- Education on income generating activities, nutrition, family economics, health and hygiene for women.
- Reduce the loss of production of agricultural products through effective post harvest management.



### **3.3 Methodology**

1. To select five farmer families from two villages within the areas of operation of the two selected multipurpose cooperative societies and setup model agricultural small farms.
2. To organize a systematic training programme for the small farmers with the assistance of the Department of Agriculture and in conjunction with the on-going National Cooperative Council of Sri Lanka environment project.
3. To organize well planned self employment and social development programs for women members of the farmer families.

### **3.4 Action Plan**

Keeping in view the specific requirement of an area, project has devised various programmes for the benefit of the farmers.

These programmes are divided in to two categories

1. Demonstration
2. Education programmes

#### **3.4.1 Demonstration**

Conducting farm demonstration is the most effective method of convincing the farmers on the adoption of agricultural technology to improve crop-yield, fertilizer use efficiency, and set up bio-gas plant. This demonstration farm will be prepared in a acre land owned by kahagolla Cooperative Development Centre.

### 3.4.2 Education Programmes

Education programmes are under three categories.

1. Field Level
2. Class Room Level
3. Demonstration Level

Under the field level programme the following areas will be covered, only for selected farmers group from 10 villages.

1. Importance of organic farming
2. Systemetic handling of chemicals and fertilizers.
3. Soil conservation
4. Environment conservation
5. Cooperation and small groups activities
6. Income generation project planning
7. Consumer protection and agricultural production
8. Family health and drug abuse
9. Nutrition
10. Home budgetting
11. Organic fertilizer

A part from that five farmers selected by “Grama Niladhari” and “the representative of multipurpose Cooperative Society” in each village, will be trained in kahagolla cooperative development centre under the same tropic by using printed materials and demonstration farm.

## TRAINING PROGRAMMES

These training programmes are sheduled for one year

	To Whom	Quantity	Where	Duration	About What	Method	By Whom
01	Village leaders from selected villages for 1st year	20	Kahagolla Cooperative Development centre	One day	Identify the project	Lectures and discussion	N. C. C.
02	Selected farmers group from 4 villages for 1st year (include youth & women)	20	do	two days	<ol style="list-style-type: none"> <li>1. Importancy of organic farming</li> <li>2. Cooperation &amp; small group activities</li> <li>3. Environment conservation</li> </ol>	do	N. C. C. Agriculture Department
03	Same group	20	do	two days	<ol style="list-style-type: none"> <li>1. Systemetic handling of chemicals and fertilizers</li> <li>2. Soil conservation</li> <li>3. Family health</li> </ol>	do	N. C. C. Agriculture department Health department
04	Same group	20	do	two days	<ol style="list-style-type: none"> <li>1. Income generation project planning</li> <li>2. Drug abuse</li> <li>3. Organic Fertilizer</li> </ol>	do Video	N. C. C. Agriculture department
05	Same group	20	do	two days	<ol style="list-style-type: none"> <li>1. Home budgetting</li> <li>2. Nutrition</li> <li>3. Consumer protection and agricultural production</li> </ol>	do	N. C. C. Agriculture and Health department

Till the end of this project, every year the training programmes will be done above this structure.

## FIELD PROGRAMMES

	To whom	Quantity	where	Duration	About what	Method	By whom
01	Farmer Family members selected 2 villages (20 from each villages 10 women will be selected in this group)	40	Dehiwini palatha MPCs area	One day	1. Soil conservation 2. Organic farming 3. Consumer protection & agriculture production	Lectures and discussion	N. C. C. Agriculture department
02	do	40	Uva Paranagama MPCs area	One days	do	do	do
03	do	40	Dehiwini palatha MPCs area	one days	1. Cooperation & small groups activities 2. Family health 3. Income generation activities	do	N. C. C. Health department
04	do	40	Uva Paranagama MPCs area	do	do	do	do
05	do	40	Dehiwini palatha MPCs area	one days	1. Systematic Handling of chemicals and fertilizer 2. Environment conservation	do	N. C. C. Agriculture department
06	do	40	Uva Paranagama MPCs area	do	do	do	do
07	do	40	Dehiwini palatha MPCs area	one days	1. Home budgeting 2. Drug abuse 3. Nutrition	do	N. C. C. Health department
08	do	40	Uva Paranagama MPCs area	do	do	do	do

## DEMONSTRATION TRAINING PROGRAMME

This training programme will be continued each year.

	To whom	Quantity	where	Duration	About what	Method	By whom
01	Selected farmers group-I. Same group of participated training programme.	20	Kahagolla Demonstration Farm.	Two day	<ol style="list-style-type: none"> <li>1. How to set up bio gas plant.</li> <li>2. How to make organic fertilizer.</li> <li>3. How to get good yield by using low production cost.</li> <li>4. How to use new technology.</li> </ol>	- discussion -demonstrating	Agriculture department & National Cooperative Council.
02	Second group	20	do	do	do	do	do
03	Third group	20	do	do	do	do	do
04	Fourth group	20	do	do	do	do	do
05	Fifth group	20	do	do	do	do	do

### **3.5 Advisory committee**

The advisory committee of this project is endowing with following persons.

- A member of Board of Directors of National Cooperative Council of Sri Lanka.
- The principal of Kahagolla Cooperative Development Center.
- Two representatives from multipurpose Cooperative Societies of selected areas.
- Two members from Govijanaseva Department of selected project area.
- One member of Environment project of National Cooperative Council

The advisory committee expects to meet once in three months and discuss for the process of monitoring activities.

### **3.6 Employment of Manpower**

#### **1. Regular Employees**

The principal of National Cooperative Council will be assisted by two education officers in the implementation and monitoring of project. The two education officers will be paid an allowance as incentive.

#### **2. Contractual employees**

Two labourers will be employed on a five year contractual basis to work in the demonstration farm.

## Chapter - 4

### BUDGET

#### 4.1 Investment of the Project

The total project cost is estimated at 2.103 million rupees.

	Classification	Amount Rupees	Remarks
01	Demonstration farm	602,500	See Annex I
02	Training Programmes	600,000	See Annex II (Rs. 120000 x 5 years)
03	Field programmes	490,000	See Annex III (Rs. 74000 x 5 years)
04	Demonstrating programmes	350,000	See Annex IV (Rs. 70000 x 5 years)
05	Printed materials	60,000	See Annex V
	<b>TOTAL</b>	<b>2,102,500</b>	

#### 4.2 Capital Cost Requirements

The total capital cost will be required from the education fund of Peoples Bank, Cooperative Fund and Agriculture ministry of Uva Provincial Council.

The working capital requirement during five years are estimated as follows.

Year	Total Rupees	1 Rupees	2 Rupees	3 Rupees	4 Rupees	5 Rupees
Peoples Bank	66,000	180000	120000	120000	120000	120000
Cooperative Fund	490,000	98000	98000	98000	98000	98000
Agriculture ministry	952,500	396500	139000	139000	139000	139000
<b>TOTAL</b>	<b>2102500</b>	<b>674500</b>	<b>357000</b>	<b>357000</b>	<b>357000</b>	<b>357000</b>

## INVESTMENT OF THE PROJECT

### Summary

	Details	Year 1 Rupees	Year 2 Rupees	Year 3 Rupees	Year 4 Rupees	Year 5 Rupees	Total Rupees
01	Demonstration Farm	326,500	69,000	69,000	69,000	69,000	602,500
02	Training programmes	120,000	120,000	120,000	120,000	120,000	600,000
03	Field programmes	98,000	98,000	98,000	98,000	98,000	490,000
04	Demonstrating programmes	70,000	70,000	70,000	70,000	70,000	350,000
05	Printed materials	60,000					60,000
	<b>Total</b>	<b>649,500</b>	<b>332,000</b>	<b>332,000</b>	<b>332,000</b>	<b>332,000</b>	<b>1,977,500</b>



## Project Implementation Plan.

<b>Sr. No.</b>	<b>Activity.</b>	<b>Duration weeks.</b>
1.	Legal acknowledgment/approval/discussion with the funding agencies.	12
2.	Preparation for demonstration farm: ■ Selected Labourers. ■ Land preparation.	— 04 10
3.	Set up demonstration farm.	12
4.	Preparation for Training Programmes.	12

# Chapter - 5

## BENEFITS

### Agricultural Development and Financial Result

After five years small farmers will,

- reap better harvest at a lower production cost
- use environment friendly, health - friendly agrochemicals and reduce ill effects to environment as well as themselves.
- increase the family economy.
- identify markets for their products.
- improve family health and nutrition status.
- use the demonstration farm as a model to initiate farms of such nature.
- understand the important of soil conservation and contribute to control the earth slips,  
and;
- Specially 80% of women will be involved in farming and hence input family economy.
- Reduce family problems & rate of suicide at least 80%.

## **Chapter - 6**

### **RECOMMENDATION**

The small farmers in this project area are facing a lot of problems. Due to these problems some of the farmers even commit suicide. The multipurpose Cooperative Societies in this project area are also facing many economic problems. So it is essential that some organisations should come to the aid of these farmers.

The National Cooperative Council of Sri Lanka has the necessary resources to help these poor farmers, but they have a very difficult task to find the funds, for this project.

Once the problems of these poor farmers are identified by the funding agencies the National Cooperative Council can launch the project.

# TRAINING PROGRAMMES AND FIELD PROGRAMMES (Time Frame)

1<sup>st</sup> March, 1999 to 2004.

	Details	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.
01	<b><u>Training programmes</u></b>												
	Village leaders training	×											
	Selected farmers group		×			×			×		×		×
02	<b><u>Field programmes</u></b>												
	Farmer family members												
	Dehiwini Palatha			×			×		×		×		
	Uva Paranagama					×		×		×		×	
03	<b><u>Demonstration Programmes</u></b>												
	Selected farmers group				×	×	×	×	×				

## Estimate for the demonstration farm

	Description	Size and Quantity	Total Rs.	Remarks
01	To construct a barbed wire fence arround the farm	1.5 acre	80,000	
02	To construct a small building	10'x15'	50,000	This building is to use for lectures and discussion and to store seeds and chemicals.
03	Small irrigation system		25000	with a tank to stock water.
04	Small plant to prepair compost		10,000	
05	Equipment and tools		85,000	Memoties, Rekes, Spray cans, Polythine to cover nursussiries Glass, boxes, botles, buckets.
06	Timber to prepare vegetable beds		7500	
07	Labour charegs	2 Labours	69,000	include ETF & EPF 2500 per month for one person.
	<b>Total</b>		<b>32,6500</b>	

## Expences for Training Programmes

Description		Food	Lodging	Allowence s Resource Person	Travelling for participants	Conference hall charges	Stationaries	Other expenes	Total
Village leaders programme	20	2500	-	2000	2000	1000	1000	1500	10000
Farm family members programme (1 <sup>st</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (2 <sup>nd</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (3 <sup>rd</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (4 <sup>th</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (5 <sup>th</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
<b>Total</b>		<b>32500</b>	<b>25000</b>	<b>17000</b>	<b>12000</b>	<b>11000</b>	<b>11000</b>	<b>11500</b>	<b>120000</b>

## Expences for Field Programmes

This is sheduled for one year - every year it will be expaned same budget.

	Description	Quantity	Food & Refreshment	Allowences Resource Person	Travelling for Field visits	Stationaries	Other expences	Total
01	Farm family (1 <sup>st</sup> Programme)	40	4000	3000	-	1000	500	8500.00
02	do (2 <sup>nd</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
03	do (3 <sup>rd</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
04	do (4 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
05	do (5 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
06	do (6 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
07	do (7 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
08	do (8 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
	Field visits for project cordinator Rs. 500 per one month				500 x 12			6000.00
	Allowences for the Education Officers - two MPCSSs				2000 x 12			24000.00
	<b>Total</b>	<b>32500</b>	<b>25000</b>	<b>17000</b>	<b>12000</b>	<b>11000</b>	<b>11500</b>	<b>120000</b>

## Expenses for Training Programmes

Demonstrating programme

	Description	Quantity	Duration	Food & Lodging	Resource Persons	Travelling for Participants	Stationaries	Other expenses	Total
01	Selected farmers <i>Group I</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
02	<i>Group II</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
03	<i>Group III</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
04	<i>Group IV</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
05	<i>Group V</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
	<b>Total</b>			<b>50,000</b>	<b>500</b>	<b>10000</b>	<b>2500</b>	<b>2500</b>	<b>70,000.00</b>



### Expenses for Printed Material Production

	Material	Quantity	Allowances for writers	Stationers	Printing
01	Organic Farming	150	1,000	1,000	15,000
02	Cooperation & small group activities	150	1,000	1,000	7,500
03	Family health	150	1,000	1,000	7,500
04	Drug abuse and Prevention	150	1,000	1,000	7,500
05	Soil conservation and environment conservation	150	1,000	1,000	15,000
06	Nutrition	150	1,000	1,000	7,500
	<b>TOTAL</b>	<b>900</b>	<b>6,000</b>	<b>6,000</b>	<b>60,000</b>

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
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"STRENGTHENING MANAGEMENT OF  
AGRICULTURAL COOPERATIVES IN ASIA"  
INDIA-PHILIPPINES-JAPAN  
October 20, 1997 to April 23, 1998

(13)   
24.2.98

**PROJECT PROPOSAL**

Title of the Project Proposal : Small Farmers Development Project  
Badulla District.

Country : Sri Lanka.

Project Proposal Prepared by : Padmini Kusumalatha Alahakoon.

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
India, Philippines and Japan



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# CHAPTER - 1

## SUMMARY

The small farmers Development Project is prepared for poor small farmers in Badulla District. The project will be implemented and run by National Cooperative Council of Sri Lanka; Collaborate with two multipurpose Cooperative Societies in Badulla District.

The main objectives of this project are:

- to introduce small farmers about the modern agricultural methods to increase productivity,
- to change their attitudes towards the modern technology, that are environmentally sustainable and
- to motivate them to face the predicted famine which the whole world will experience in the year 2005.

The target group, small farmers has been selected from 20 villages which are located in two multipurpose Co-operative Society areas in Badulla district.

Total investment for the project will be 2.1025 million rupees (35 thousand Us \$) Donation will be expected from Peoples Bank, Agriculture Ministry of Uva Province, and the Cooperative Fund.

This project will be expected to begin in 1999 and completed by 2004. A demonstration farm will be conducted during the project period.

## **CHAPTER - 2**

### **BACK GROUND**

#### **2:1 Over all situation**

Sri Lanka is a small beautiful Island situated in the Indian Ocean. From North to South the Island is 425 k.m. long and West to East it is 225 k.m. Wide. The Island has tropical climate.

The Population of Sri Lanka is 18.2 million. The economy of Sri Lanka is both Agricultural and trade based.

The most important feature of the economy of our country is Agriculture.

Main Agricultural products are paddy cereals Spices, Vegetables and Fruits. Tea, Rubber and Coconut products are import and exports and Spices are also exported to overseas markets. Agriculture as the Single largest productive sector in Sri Lanka economy accounts for 27% G. D. P. The decreasing of agricultural lands with increase of population is a prominent feature in the agricultural sector. 44% of the land cultivated are around four acres each. The per capita land size in 1949 was 1.35 He. It decreased to 0.95 in year 1973. During this period it has become 0.47. This can be specially noticed in the paddy production sector.

The main food of Sri Lanka is rice and vegetables. Considering the above factors, agriculture should be further developed.

The majority of the farmers in Sri Lanka are small farmers. There-fore the contribution of the small farmers to the National Economy is considerably high. 80% of our population lives in the rural area and their main livelihood is agriculture.

In the Cooperative movement too the main source of living of the majority of the members is agriculture.

Out of the total membership in the Cooperative in Sri Lanka 84% are from agriculture Cooperative directly or in directly related to the agricultural field.

The main types of cooperative are the multipurpose Cooperative Societies and Thrift and Credit Societies. As the activities of these two types of Cooperatives also include providing credit facilities, inputs marketing and purchasing for agricultural activities. Another important cooperatives are milk producers and agricultural small cooperative societies.

The milk producers societies are situated at Village Level and district level. There are 265 milk societies in Sri Lanka at present. Sri Lanka's milk production has stagnated and as our population growth is on the increase per capita consumption of milk has dropped precipitously.

Multipurpose Cooperative Societies & Sanasa Cooperative Societies were provided farm credit and chemical fertilizers. They were also given incentives by way of commissions on fertilizer distribution and farm credit disbursement with the objective of strengthening their capital base and business operations. The economic situation of the M. P. C. S. has considerably weakened since the introduction of the open market economic system; with-drawal of farm subsidies and restricted purchase of agricultural products from the local farmers. With the deregulation of farm chemicals, chemical fertilizer except urea, seeds, the business level of M. P. C. Ss in rural agricultural area have gone down considerably.

Multipurpose Cooperative Societies in Agricultural area and agricultural Cooperative Societies (those are primary societies) have several limitations for examples, limited number of members, limited range of farm products, lack of farm machines, in experienced leaders and untrained employees and lack of infrastructure. Due to inadequate business operations above cooperatives have

lost credibility in certain areas. They lack capital, equipment and market access. Not only these factors but also credit supply has become expensive and deposits received from members are not productive due to no interest or very low interest given. Voluntary deposits in rural banks are negligible. Farm credit on concessional terms is not available to the farmers. Finding a market for the members' product is becoming difficult. There are no value addition or agro processing activities undertaken by M P C S or any other agricultural societies. As a result, much of farm products become unremunerative for the farmers. Looking at this situation, it can be seen that small farmers in rural areas of Sri Lanka face poverty, illiteracy and ill-health.

The main objectives of the National Cooperative Council of Sri Lanka are to promote and develop the cooperative movement and to serve as an exponent of cooperative opinion to express views on behalf of the movement and represent it nationally and internationally.

As a national level organization, the National Cooperative Council of Sri Lanka is intervening to develop the agricultural cooperative movement. NCC has identified the problems faced by the agricultural cooperatives as follows.

- On the credit area, inadequate working capital of the Cooperative Societies resulting in delays in releasing loans to members.
- Lack of loan supervision and weak loan repayments and competition from privately owned financial institutions.
- Delayed receipt of fertilizer, agro chemicals and lack of agriculture equipment too are drawbacks.
- Lack of adequate and suitable transport facilities poses problems to the efficient marketing operations.
- Shortcomings in planning and plan implementation.
- Lack of coordination and inefficient and incompetent management,
- Lack of suitable market outlets.
- Lack of proper coordination and planning has hindered the development of this sector.



- Limited aptitude of the rural people to take advantage of science and technology.
- Comparatively low agricultural productivity by many farmers.
- Comparatively low rate capital information due to low savings and low investments.
- Population explosion a very high growth rate due to high birth rate and declining death rate due to various health measures under taken.

## 2.2 Area of the Project

Sri Lanka is divided in to 8 provinces. Badulla district which is 200 km., away from Colombo, is in Uva province.

The population is 750 thousand in Badulla district. The male population is 412.5 thousand, and the female population is 337.5 thousand.

The temperature ranges between 20 to 40 centigrades. The climate is cooler and equiable temperature. There are precious, natural resources for agricultural sector in Badulla district for example water falls, mountains, organic resources, soil, Jungles, climate, etc.

The selected project area is Dehiwinipalatha (Atampitiya) and Uva Paranagama, (Ambagasdowa) multipurpose Cooperative society areas. The climate of this area very advantageous for agriculture.

The most important feature of the economy of this area is agriculture. Main agricultural products are Tea, Paddy, Vegetables and Spices. Most of the Land cultivated are less than 2 acres. The percapita land size in this area is 0.35. So the majority of the farmers are small farmers. There fore contribution of these small farmers to the national economy is considerably high.

Number of Cooperative Societies in Badulla District

Society	Number of Societies	Number of Members (thousands)
Multipurpose	12	138.2
Thrift and Credit	227	28.3
Agricultural	38	3.1
Small industries	2	1.8

**Current situation of selected area**

Area	Number	Drg Land	Muddy Land	Population		Members
				Male	Female	
Ambagasdowa	6877	1914	814	15129	12378	9452
Dehiwinipalatha	4087	5112	1291	13153	12876	8483

Ten villages has been selected in each cooperative societies as follows.

Society	Selected Area				
	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year
Dehiwini palatha	Abhayapura	Dehiwinna	Maliththa	Neluwa	Uva Mahawela
	Warakadanda	Kurukdegama	Katugama	Perahettiya	Gawela
Uva Paranagama	Perawella	Ladduma	Ambagasdowa	Kumarapattiya	Madawela
	Galahagama	Uma - Ela	Kadadoragama	Karagaha Ulpatha	Dangamuwa

Although many natural resources are available in this area farmers have not being able to utilise them to the maximum. Further although traditional agricultural families are found they also no development. The main economy of the families within the above Cooperative area is agriculture, they also resort to rearing milk cows as Cattle farming. The income per each family in around Rs. 2000 - 2500.

Other facilities in this area

	Dehiwinipalatha	Uva Paranagama
Schools	11	15
Temples	18	20
Hospitals	02	02
Other organisations		
Environment project	-	01
Farmers organizations	30	18
Retail shops	22	24
Milk Collection Centres	-	03
Rural Banks		

Cultivated Area

Project Area	Paddy Hec.	Vegetables Hec.	Milk Farmers	Total Land Hec.	Un cultivated Land
Uva Paranagama	998	2278	1172	3896	620
Dihwinipalatha	658	5112	360	6403	633

## 2.3 Problems faced by farmers and Cooperatives of the Area

The problems faced by farmers and cooperatives in this project area are as follows:

- Limited capacity of the farmers of take more yeilds by using new technology.
- Lack of knowledge, skills of farming methods.
- Lack of adequate and suitable transport facilities poses problems to the efficient marketing operation.
- Misuse of Chemicals, fertilizer and pesticides.
- Vulnerable situation from intermediaries to farmers. Most of small farmers depend on private money lenders.
- Poor knowledge of better health conditions and sanitary systems
- Poor knowledge of home budgeting
- Lack of women participation in the agricultural sector.
- Inadequate working capital of the cooperative societies to give loans to farmers to release loans in time.
- Lack of loan supervision and weak loan repayments.
- Delayed receipt of fertilizer, agro chemicals and lack of agricultural equipment are draw back.
- Lack of suitable market out lets.
- Increase, of suicide rates among low income groups.
- Agriculture lands are getting destroyed due to careless farming
- Lack of border perspective to problems and all effects of superstitions.

## 2.4 Project rationale and Design Considerations:

Looking at the current situation of small farmers in selected areas and to solve above problems it is essential to launch a wide programme as follows.

- to develop leadership qualities and organizational capacity of agricultural cooperative societies which is very essential for developing social and economic awareness.
- to understand ill effects of superstitions, prejudices and to develop a border perspective to problems.
- to encourage and motivate farmers which enhance mutual cooperation and understanding between individuals and within community and their help in reduction of tension and conflict.
- to develop knowledge and skills for productivity
- to encourage women for income generation, activities and better farming methods.
- to encourage youth farmers to take advantage of organic farming and for using new technology.
- to develop sense of responsibility and accountability which help in developing self reliance.

# **PROJECT**

### **3.1 Objectives**

The objectives of the project are as follows.

- To introduce small farmers to modern agricultural methods to increase productivity.
- To change the attitudes of small farmers to use modern technology that are environmentally sustainable.
- To motivate small farmers to improve agricultural activities in order to face the predicted famine which the whole world will experience in the year 2005.
- A secondary objective will be to improve the health, living conditions and economy of the small farmers of the project areas and to encourage women to seek in the agricultural sector.

### **3.2 Component of the project.**

To accomplish the above objectives, the following activities will be implemented.

- To provide knowledge and technical know - how on modern farm methods, systematic handling of chemicals and fertilizers, setting up a bio-gas plant and promote organic farming.
- Inculcation of cooperative action and small group activities.
- Education on income generating activities, nutrition, family economics, health and hygiene for women.
- Reduce the lost of production of agricultural products.

### 3.3 Methodology

*Criteria of selection?*

1. To select five farmer families from two villages within the areas of operation of the two selected multipurpose cooperative societies and setup model agricultural small farms.
2. To organize a systematic training programme for the small farmers with the assistance of the Department of Agriculture and the on-going National Cooperative Council of Sri Lanka environment project.
3. To organize well planned self employment and social development programs for women members of the farmer families.

### 3.4 Action Plan

Keeping in view the specific requirement of an area, project has devised various programmes for the benefit of the farmers.

These programmes are divided in to two categories

1. Demonstration
2. Education programmes

#### 3.4.1 Demonstration

Conducting farm demonstration is the most effective method of convincing the farmers on the adoption of agricultural technology to improve crop-yield, fertilizer use efficiency, and set up bio-gas plant. This demonstration farm will be prepared in a acre land owned to kahagolla Cooperative Development Center.

### 3.4.2 Education programmes

Education programmes are under two categories.

1. Field Level
2. Class Room Level

Under the field level programme the following areas will be covered, only for selected farmers group from 10 villages.

1. Importance of organic farming
2. Systemetic handling of chemicals and fertilizers.
3. Soil conservation
4. Environment conservation
5. Cooperation and small groups activities
6. Income generation project planning
7. Consumer protection and agricultural production
8. Family health and drug abuse
9. Nutrition
10. Home budgetting
11. Organic fertilizer

A part from that five farmers selected by "Grama Niladhari" and "the representative of multipurpose Cooperative Society" in each village, will be trained in kahagolla cooperative development centre under the same tropic by using printed materials and demonstration farm.



## TRAINING PROGRAMMES

These training programmes are sheduled for one year

	To whom	Quantity	where	Duration	About that	Method	By whom
01	Village leaders from selected villages for 1st year	20	Kahagolla Cooperative Development centre	One day	Identify the project	Lectures and discussion	N. C. C.
02	Selected farmers group from 4 villages for 1st year	20	do	two days	1. Importancy of organic farming 2. Cooperation & small group activities 3. Environment conservation	do	N. C. C. Agriculture Department
03	Same group	20	do	two days	1. Systemetic handling of chemicals and fertilizers 2. Soil conservation 3. Family health	do	N. C. C. Agriculture department Health department
04	Same group	20	do	two days	1. Income generation project planning 2. Drug abuse 3. Organic Fertilizer	do Video	N. C. C. Agriculture department
05	Same group	20	do	two days	1. Home budgetting 2. Nutrition 3. Consumer protection and agricultural production	do	N. C. C. Agriculture and Health department

## FIELD PROGRAMMES

	To whom	Quantity	where	Duration	About that	Method	By whom
01	Farmer Family members selected 2 villages (20 from each villages)	40	Dehiwini palatha MPCS area	One day	1. Soil, conservation 2. Organic farming 3. Consumer protection & agriculture production	Lectures and discussion	N. C. C. Agriculture department
02	do	40	Uva Paranagama MPCS area	One days	do	do	do
03	do	40	Dehiwini palatha MPCS area	one days	1. Cooperation & small groups activities 2. Family health 3. Income generation activities	do	N. C. C. Health department
04	do	40	Uva Paranagama MPCS area	do	do	do	do
05	do	40	Dehiwini palatha MPCS area	one days	1. Systemetic Handling of chemicals and fertilizer 2. Environment conservation	do	N. C. C. Agriculture department
06	do	40	Uva Paranagama MPCS area	do	do	do	do
07	do	40	Dehiwini palatha MPCS area	one days	1. Home budgetting 2. Drug abuse 3. Nutrition	do	N. C. C. Health department
08	do	40	Uva Paranagama MPCS area	do	do	do	do

### **3.5 Advisory committee**

The advisory committee of this project is endowing with following persons.

- A member of Board of Directors of National Cooperative Council of Sri Lanka.
- The principal of Kahagolla Cooperative Development Center.
- Two representatives from multipurpose Cooperative Societies of selected areas.
- Two members from Govijanaseva Department of selected project area.
- One member of Environment project of National Cooperative Council

The advisory committee expects to meet once in three months and discuss for the process of monitoring activities.

### **3.6 Employment of Manpower**

#### **1. Regular Employees**

The principal of National Cooperative Council will be assisted by two education officers in the implementation and monitoring of project. The two education officers will be paid an allowance as incentive.

#### **2. Contractual employees**

Two labourers will be employed on a five year contractual basis to work in the demonstration farm.

## CHAPTER - 4

### BUDGET

#### 4.1 Investment of the Project

The total project cost is estimated at 2.105 million rupees.

	Classification	Amount Rupees	Remarks
01	Demonstration farm	602500	See Annex I
02	Training Programmes	600000	See Annex II (Rs. 120000 x 5 years)
03	Field programmes	490000	See Annex III (Rs. 74000 x 5 years)
04	Demonstrating programmes	350000	See Annex IV (Rs. 70000 x 5 years)
05	Printed materials	60000	See Annex V
	<b>TOTAL</b>	<b>2102500</b>	

#### 4.2 Working Capital Requirements

The total working capital will be required from Peoples Bank, Cooperative Fund and Agriculture ministry of Uva Provincial Council.

The working capital requirement during five years are estimated as follows.

Year	Total Rupees	1 Rupees	2 Rupees	3 Rupees	4 Rupees	5 Rupees
Peoples Bank	66,000	180000	120000	120000	120000	120000
Cooperative Fund	490000	98000	98000	98000	98000	98000
Agriculture ministry	952500	396500	139000	139000	139000	139000
<b>TOTAL</b>	<b>2102500</b>	<b>674500</b>	<b>357000</b>	<b>357000</b>	<b>357000</b>	<b>357000</b>

## INVESTMENT OF THE PROJECT

### Summary

	Details	Year 1 Rupees	Year 2 Rupees	Year 3 Rupees	Year 4 Rupees	Year 5 Rupees	Total Rupees
01	Demonstration Farm	326500	69000	69000	69000	69000	602500
02	Training programmes	120000	120000	120000	120000	120000	600000
03	Field programmes	98000	98000	98000	98000	98000	490000
04	Demonstrating programms	45000	45000	45000	45000	45000	225000
05	Printed materials	60000					60000
	<b>Total</b>	<b>649500</b>	<b>332000</b>	<b>332000</b>	<b>332000</b>	<b>332000</b>	<b>1977500</b>

## **CHAPTER - 5**

### **BENEFITS**

#### **Agricultural Development and Financial Result**

After five years small farmers will,

- reap better harvest at a lower production cost
- use environment friendly, health - friendly agrochemicals and reduce ill effects to environment as well as themselves.
- increase the family economy.
- identify markets for their products.
- improve family health and nutrition status.
- use the demonstration farm as a model to initiate farms of such nature.
- understand the important of soil conservation and contribute to controlle the earth slips.  
and;
- Specially women will be involved in farming and hence input family economy.
- Reduce family problems & rate of suicide.

## **CHAPTER - 6**

### **RECOMMENDATION**

The small farmers in this project area are facing a lot of problems. Due to these problems some of the farmers even commit suicide. The multipurpose Cooperative Societies in this project area are also facing many economic problems. So it is essential that some organisations should come to the aid of these farmers.

The National Cooperative Council of Sri Lanka has the necessary resources to help these poor farmers, but they have a very difficult task to find the funds, for this project.

Once the problems of these poor farmers are identified by the funding agencies the National Cooperative Council can launch the project.

**TRAINING PROGRAMMES AND FIELD PROGRAMMES**  
**(Time Frame)**

	Details	Jan.	Feb	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
01	<b><u>Training programmes</u></b> Village leaders training Selected farmers group	x.	x			x			x		x		x
02	<b><u>Field programmes</u></b> Farmer family members Dehiwini Palatha Uva Paranagama			x		x	x		x		x		x
03	<b><u>Demonstration Programmes</u></b> Selected farmers group								x	x	x	x	x



## Estimate for the demonstration farm

	Description	Size and Quantity	Total Rs.	Remarks
01	To construct a barbed wire fence around the farm	1.5 acre	80,000	
02	To construct a small building	10'x15'	50,000	This building is to use for lectures and discussion and to store seeds and chemicals.
03	Small irrigation system		25000	with a tank to stock water.
04	Small plant to prepare compost		10,000	
05	Equipment and tools		85,000	Memoties, Rekes, Spray cans, Polythine to cover nursussiries Glass, boxes, botles, buckets.
06	Timber to prepare vegetable beds		7500	
07	Labour charegs	2 Labours	69,000	include ETF & EPF 2500 per month for one person.
	<b>Total</b>		<b>32,6500</b>	

## Expences for Training Programmes

Description		Food	Lodging	Allowences Resource Person	Travelling for participants	Conference hall charges	Stationaries	Other expences	Total
Village leaders programme	20	2500	-	2000	2000	1000	1000	1500	10000
Farm family members programme (1 <sup>st</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (2 <sup>nd</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (3 <sup>rd</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (4 <sup>th</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
do (5 <sup>th</sup> Prog.)	20	6000	5000	3000	2000	2000	2000	2000	22000
<b>Total</b>		<b>32500</b>	<b>25000</b>	<b>17000</b>	<b>12000</b>	<b>11000</b>	<b>11000</b>	<b>11500</b>	<b>120000</b>

## Expences for Field Programmes

This is sheduled for one year - every year it will be expaned same budget.

	Description	Quantity	Food & Refreshment	Allowences Resource Person	Travelling for Field visits	Stationaries	Other expences	Total
01	Farm family (1 <sup>st</sup> Programme)	40	4000	3000	-	1000	500	8500.00
02	do (2 <sup>nd</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
03	do (3 <sup>rd</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
04	do (4 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
05	do (5 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
06	do (6 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
07	do (7 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
08	do (8 <sup>th</sup> Prog.)	40	4000	3000	-	1000	500	8500.00
	Field visits for project cordinator Rs. 500 per one month				500 x 12			6000.00
	Allowences for the Education Officers - two MPCSS				2000 x 12			24000.00
	<b>Total</b>	<b>32500</b>	<b>25000</b>	<b>17000</b>	<b>12000</b>	<b>11000</b>	<b>11500</b>	<b>120000</b>

## Expences for Training Programmes

Demonstrating programme

	Description	Quantity	Duration	Food & Lodging	Resource Persons	Travelling for Participants	Stationaries	Other expences	Total
01	Selected farmers <i>Group I</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
02	<i>Group II</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
03	<i>Group III</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
04	<i>Group IV</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
05	<i>Group V</i>	20	02 days	10,000	1000	2000	500	500	14,000.00
	<b>Total</b>			<b>50,000</b>	<b>500</b>	<b>10000</b>	<b>2500</b>	<b>2500</b>	<b>70,000.00</b>

## Expences for Printed Material Production

	Material	Quantity	Allowen ces for writers	Station aries	Printing
01	Organic Farming	150	1,000	1,000	15,000
02	Cooperation & small group activities	150	1,000	1,000	7,500
03	Family health	150	1,000	1,000	7,500
04	Drug abuse and Prevention	150	1,000	1,000	7,500
05	Soil conservation and environment conservation	150	1,000	1,000	15,000
06	Nutrition	150	1,000	1,000	7,500
	<b>TOTAL</b>	<b>900</b>	<b>6,000</b>	<b>6,000</b>	<b>60,000</b>

TWELFTH (12TH) ICA-JAPAN REGIONAL TRAINING COURSE  
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October 20, 1997 to April 23, 1998

14  
27.2.98

**PROJECT PROPOSAL**

Title of the  
Project Proposal : EXPORT PROMOTION  
HOUSE

Country : VIET NAM

Project Proposal  
Prepared by : PHAM THI THANH HANG

**Funded by the Government of Japan**  
(Ministry of Agriculture, Forestry & Fisheries) and  
**Executed by the International Cooperative Alliance**  
in collaboration with its Member-Organisations in  
**India, Philippines and Japan**



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# INTRODUCTION

Development of the cooperatives and small & medium sized enterprises (SMEs) is one of the concerned issues in the development strategy of any economy, especially of transforming one. Previously, in Vietnam, the Cooperatives SMé had not been taken into the Government's concern of development. The whole economy had concentrated only into the formation and development of the large enterprises with the important industries such as : electricity, mining, engineering ... Since that period when the country started its renovation up to now, specially after having various laws on the companies, the small and medium enterprises have been really recognized and taken into the Government's consideration of development .

Cooperatives and SMEs in Vietnam were Founded by various resources with different capital and technical levels, at present, there are about 24,000 Small & Medium Enterprises and 24,000 Cooperative of all types( of which 17,000 Agricultural Cooperatives). Although SMEs do not occupy a very high rate in the GDP, but they play a very important position in the job creation and contribute practically to the hunger elimination and poverty alleviation program as well as to increase income for the working people. For the export activity, they have made effort in expanding the market, however their potential was not fully explored due to some difficulties such as : poor management, old and back-ward technology, low quality and high price products, limited resources, lack of up-date information on the market, weak competitive capability and so on. Recognizing these difficulties and knowing that overcome them is extremely heavy task exceeding their capability, the Cooperatives and SMEs find the need of having a separate organization to support their export activity. Therefore, the foundation of an "Export promotion house" is necessary.

The purpose of this project is to build-up an "Export promotion house" with good enough capability to help the Cooperatives and SMEs in their export activity.

The project is consisted of 8 main parts. The parts I and II study the real development situation of SMEs in the economic sector in general and the export activity in particular. The strengths and weakness of the Cooperatives and Non-state Small & Medium enterprises reflect the need of having an "export promotion house". The part III concerns the functions, responsibilities and methods of working of the "Export promotion house". The part IV presents the construction location, architecture and budget for the building up an "Export promotion house". The Personnel structure, management and form of payment (salary) are mentioned in the part V. The last 3 parts contain analyzes of the project's effectiveness and related suggestions.

At present, in Vietnam, many theory and practice issues of Cooperatives and SMEs still haven't been solved yet.(For example : their conception, criteria identity, classification etc...). These issues strongly influence to the gathering and collection data for analyzing. Therefore, we do not have enough detail figures on the Cooperatives and SMEs activities in the whole country economy.

Because of the time limitation, the project is not completed properly. It need to be improved during the process of preparation.. An workshop on the comment gathering for the project is necessary and benefit for the establishment of "Export promotion house" for the Cooperatives and SMEs in Vietnam.

## Part I

# Evaluation on the real situation of business operation in general and export activity in particular of the Cooperatives and Non-State Small and Medium Enterprises.

*In order to define the right objects of "Export Promotion House", the most necessary thing is how to define the small and medium sized Enterprises in Vietnamese Economy and its operational characteristics. On the basis of understanding real situation of Enterprises, "Export Promotion House" will be able to operate in uniformly and effectively (1)*

**I. Concept of Vietnam Small and Medium Enterprises. Their foundation and role in Vietnam Economy.**

*a/ Concept:*

There are various definitions on the Small and Medium Enterprises (SMEs) which have been done based on the characteristic criteria such as : dynamism, production creative capability or market share. The other quantitative criteria such as : turnover, laborers, exports ... are also being used to definite the SMEs.

In the Vietnam Law, the regulations for the State and Private Enterprises as well as Limited and Shareholding Companies and cooperatives are stipulated clearly. The Law also stipulate the minimum legal capital (or even lower capital rather the legal one) for each type of companies in each sector. However, there is no any exact definition or system of criteria to classify the SMEs. In fact , the SMEs are existing in both State and Non-State economic sectors, but most of them are in the Non-state one.

For the market economy, the SMEs are quite popular. But for some other economies, especially for the transforming one, the State Enterprises are still playing dominant role and key position . In Vietnam, the Non-State Enterprise sector has just developed only recently.

At present, the concept of the Private or Non-State sectors to be used in the various researching documents in Vietnam includes the genuine private enterprises, cooperatives and enterprises in which the State or State Enterprises contribute 50% or less than 50% of total capital. However, according to the statistic on the surplus value and GDP, the joint-ventures setting up by the State Enterprises and foreign Companies (with any ownership rates)(1) are considered as the State Enterprise sector. Some studying works done by the International economic organizations on the Vietnam SMEs were normally based on the analyses which jointly made by the Chamber of Commerce and Industries and State Planning Committee ( Ministry of Planning and Investment) in which the existing definition of the SMEs in the Socialist Republic of Vietnam is used. Here ,



the very small enterprises are those which have less than VND 100 Mill. Capital. The small enterprises are those which have 5-50 employees with VND 100-300 Mill Capital. The Medium enterprises are those which have 50-300 employees with VND 300 Mill capital. According to these definition, some Vietnam Medium Enterprises are considered as the Large Enterprises in other countries. In some studies on SME of Vietnam recently, two criteria on number of labours and capitals are being used. These criteria on number of labours and production capitals are being used. These criteria are widely used because all enterprises have two criteria and able to define them in all levels (economy, branch or each enterprise). Definition of SME has been used as follows : "SME is a production - business unit which has a legal status with the purpose of mutual profits and having size of enterprise (mentioned in different criteria). In the limitation of certain periods".

Criteria used to defined SME mentioned in table 1 :

Sector	Industry		Trading, Services	
	SMEs	in which small enterprises	SMEs	in which small enterprises
Production capital (VND)	under 5 bil	under 1 bil	under 2 bil	under 1 bil
Full-time workers	under 300	under 50	under 200	under 30

Note 1: Source from report No 14645 VN Vietnam Economic report on the Industrialization and Industrial Policy, dated Oct.17,1995 by the National General Section, Department Region I, South-east Asia and Pacific. World Bank. Hereafter called the World Bank's Report.

2. The very small enterprises are considered those having less than 5 employees with capital of less than VND 100-300 Mill. The small enterprises are those having 5-50 employees with capital of VND 100 - 300 Mill. The medium enterprises are those having 50 - 30 employees and VND 300 - 1bill. capital.

**Table2 : Number of the State Small and Medium Enterprises,1995.**

Classifying according to capital.	Number of enterprises		Average 1 enterprise		Average 1 laborer (1 bill.VND)		
	Quantity	Ratio	Capital Bill.VND	Ratio	Capital	Turnover	Profit
<b>Total</b>	<b>6,544</b>	<b>100</b>	<b>6.9</b>	<b>278</b>	<b>24.7</b>	<b>59.7</b>	<b>1.8</b>
Less than 1 bill VND	3,266	49.9	0.4	96	4.3	23.0	0.4
1-5 Bill.	2,281	34.9	2.3	239	9.6	40.5	0.8
<b>Industry</b>	<b>2,271</b>	<b>100</b>	<b>9.6</b>	<b>327</b>	<b>29.4</b>	<b>39.0</b>	<b>1.5</b>
Less than 1 bill.VND	1,055	46.4	0.4	101	4.3	14.6	0.4
1-5 Bill	845	37.2	2.3	247	9.3	23.2	0.7
<b>Commerce</b>	<b>1,774</b>	<b>100</b>	<b>5.3</b>	<b>149</b>	<b>35.5</b>	<b>236.7</b>	<b>3.9</b>
Less than 1 Bill.VND	844	47.6	0.4	59	6.3	75.8	0.5
1-5 Bill.VND	582	32.8	2.4	150	16.9	148.8	1.3

Source : National Politic Institute and Friedrich Ebert Institute (Federal Republic of Germany). Project Science Year Book on the policy for promotion o, SMEs in vietnam : Research's result of stage 1 (August December 1996), Hanoi Dec. 1996

According to the above table, in 1995, size of Enterprises is as follows:

State Enterprises : In average one enterprise has 278 employees (327 people in the Industry and 149 people in the commerce sector) with average VND 6,9 Bill. Capital ( VND 9,6 Bill in the Industry and VND 5,3 Bill. in the commerce sector). The statistic shows that more than 84,4 % of the State Enterprises have small and medium size of which the small enterprises occupy 49,9%. In the industry sector, 83,6 % of 2,271 enterprises are SMEs, of which small enterprises occupy only 46,4%. In the commerce sector, 80,4% of enterprises are SMEs, the small ones occupy 47,6 %.

Non state economic sector: the similar indicators non state economic sector is much lower than the above mentioned. As in the facts, enterprises have been newly developed since the reform processs of Vietnam. Due to newly development, small capital, lack of business and management experiences. So out of the non state enterprises, there are also small amount of large sized enterprises but very few.

**Table 3 : Number of laborers, capital, average income per an enterprise in the Non-State sector.**

	Total	Limited companies	Shareholding companies	Private enterprises	Cooperatives
No.of laborers	31.3	33.0	56.2	10.6	102

Real capital	1,165.5	1,498.1	32,176.8	211.1	757.2
Turnover	3,122.4	5,150.4	20,003.1	1,736.5	957.4
Contribution to National budget	91.5	183.9	853.1	21.2	20.2

Source : National Politic Institute and Frederick Ebert Institute(Federal Republic of Germany). Project Science Year Book on the policy for promotion of SMEs in Vietnam: Research's result of stage I (August-December 1996), Hanoi Dec.1996.

*b/ Establishment and development process of SMEs.*

The SMEs in Vietnam have been founded and developed by various resources :

+ The Department of small and handicraft industry which had been established and developed for a long time under the Central Planned Economy.

+ The State enterprises which were set up in old mechanism at both Central and local levels.

+ The new enterprises which were set up during the renovation period as a result of State Enterprise's reorganization, under the laws issued in 1990.

During period from 1960 to 1986, SMEs mainly were State Enterprises, small handicraft cooperatives and individual economic households, among them only State enterprises and cooperatives were encouraged to develop.

From early of 1986 up to now, with the new policy of economic renovation, all economic sectors have been accepted and exist on the long term base. A range of documents on the economic sectors have been issued, especially laws on the private enterprises, companies, domestic investment encouragement . This creates legal installation for the production and business development of enterprises . SMEs are really in the concern of development.

During the past years, although the number of State enterprises and cooperatives has been drooped sharply, but if we take a look at the whole economy, we can see that number of SMEs has been increased rapidly, especially companies and private enterprises.(See table 4).

**Table 4: Number of enterprise types in the industry.**

Types	1986	1988	1990	1991	1992	1993	1994	1995
State enterprises	3,141	3,111	2,762	2,599	2,268	2,030	2,002	2,000
Cooperatives			13,068	8,829	5,723	5,287	1,648	1,199
Companies, private enterprises	567	318	770	959	1,114	3,322	4,904	6,311

-Source : National Politic Institute and Frederick Ebert Institute(Federal Republic of Germany). Project Science Year Book on the policy for promotion of SMEs in Vietnam: Research's result of stage I (August-December 1996), Hanoi Dec.1996.

*c/ Operational aspects of SMEs :*

SMEs operate in all aspects of economy. This is reflected in the number of enterprises in each aspect and their contribution to GDP of Vietnam.

**Table 5:** Number of enterprises in the whole economy, accounted up to July 1,1995.

Type of enterprises	Whole National economy		Dividing into industries				
		%	Industry, construction	%	Commerce, hotels	%	Other
<b>Total enterprises</b>	<b>23,411</b>	<b>100</b>	<b>11,229</b>	<b>100</b>	<b>10,227</b>	<b>100</b>	<b>1,905</b>
State enterprises	5,962	25.5	3,291	29.0	1,849	18.1	822
Collective enterprises	1,810	7.7	1,199	10.7	282	2.8	329
Private enterprises	10,818	46.2	4,568	40.7	5,918	57.9	332
Shareholding companies	138	0.6	51	0.5	30	0.3	57
Limited companies	4,015	17.2	1,692	15.1	2,036	19.9	260
Enterprises with foreign investment	668	2.9	428	3.8	135	1.3	105
Individual economy	1,882,798		707,053		940,994		234,751

Source : Statistic year book 1995, Statistic publication, H, 1996, P.196-389.

State owned enterprises only accounted for 25% in the total of enterprises ingenerall and the rest are collective enterprises and non state enterprises (table 5). However, according to the Report and Lesson with drawing from "bright cooperatives" meeting of VCU in the reform process, up to 1/10/1997, there are 17,432 cooperatives in nationwide. There fore, number of collective enterprises is not small, most of these cooperatives have met constraints in business operations, especially in Import-Export activities that required the support of VCU.

The fact shows that, in term of quantity, the State Enterprises are concentrated in the heavy industry, while private economic sector(mainly SMEs) are concentrated in the production and light industries which require a lot of laborers such as : food processing, garment production ect ... The Small factories having 10-15 workers are more concentrated in the industries (wood processing, textile, food processing, transportation and other services. Many newly registered companies also operate in this aspects.

The reason why SMEs concentrate in these aspects are as follows :

- In the Law on the private enterprises and related documents, the State encourages the private enterprises to do business in some industries such as : food & food-stuff production; Exploring and Processing the agricultural, forestry and marine products for domestic consumption and exporting; Producing products for replacing the imported items... The State also has taken some measures to encourage enterprises by providing them priorities in land using (for construction), production expanding, loan borrowing, tax reducing, in conformity with the recent laws and tax regulations. In addition the State creates favorable conditions for enterprises in importing, exporting and in setting up joint-venture or cooperating with foreign companies.

- All domestic and foreign investors understand that the SME sector has some advantages such as : low investment and more laboring use. In this way, they can overcome the financial difficulty and at the same time explore cheap labor force in Vietnam.

- Moreover, business aspects which cooperatives and SMEs dealing with, are usually high consumed products in the domestic market. They can also be used for exporting and replacing the imported items and are in a favor of tax reduction.

According to the statistic provided by the Chamber of Commerce and Industry, up to March 1995, the profession ratios of SMEs in the Industry, transportation and services are as follows :(The State enterprises are not divided separately from the Non-State ones)

- Wood products	26,6%
- Textile and Garment	22,2%
- Processing food	17,0 %
- Pottery and porcelain	1,4 %
- Paper products	0,8 %
- Leather products	0,5 %
- Others	31,5 %

However, if we take a look at the GDP structure in the whole National Economy, We can see that the State enterprises occupy bigger market share than other economic sectors. This is clearly reflected in the GDP structure in the table 6.

## II/ Role of Non-state SMEs in the National Economy.

Role of the Non-State enterprises in the National economy is increasing gradually. It is reflected in their contribution ratio to GDP and number of jobs created by them as well as in their contribution to the process of income redistribution, hunger elimination and poverty alleviation in the country, especially in the rural and mountainous and removed areas.

a/ Creating materials and property for society: According to the Statistic in the table 6, we can see that the market share of the private sector in GDP structure had

increased from 55,3% in 1986 to 59,8% in 1994. However, during the period from 1990 to 1991, the private sector occupied 2/3 of total GDP.

According to the GDP structure, role of the private sector in each economic aspect is different.

In the industry : The State sector occupies 2/3 of total market share while the private sector only 1/3. There is a tendency that the market share of the private sector is reducing. In the heavy industries (mining) the State sector occupies almost total market share, but in the light industries (textile, garment, leather processing, forest and wood processing, wood products ... ) the Non-state sector's market share is increasing.

In the Construction : The Private economic sector's market share is increasing gradually and it may exceed the State one.

In the forestry : the private sector occupies almost total market share. This is because of character of agricultural economy with mainly cooperatives and economic households. But the number of SMEs in this sector is not so big.

In the service: during over the past ten years, the contribution rate of service industry to the economy has increased from 20,3% in 1986 to 41,6% in 1994. Its growth rate has been mainly made by the Non-state enterprise sector. According to the statistic in the table 5, the service rate of the private economic sector has increased from 0% in 1986 to 21,6% in 1994, thus, this was the main factor which leads to the growth of the service industry. Up to 1994, the State economic sector still remained the same rate as it was in 1986. This rate even went down during the period 1990-1992.

**Table 6 : GDP structure based on economic industries(Bill.VND)**  
(Accounted based on the current monetary unit - Bill.VND)

	1986	1990	1991	1992	1993	1994
Total	100	100.0	100.0	100.0	100.0	100.0
State	44.7	32.5	33.3	36.2	39.2	40.2
Private	55.3	67.5	66.7	63.8	60.8	59.8
State enterprises	29.2	22.9	23.5	26.4	27.5	28.5
Forestry & Agriculture	43.3	37.5	39.5	33.0	28.8	27.7
State	2.2	1.0	1.1	0.9	0.7	0.7
Private	41.2	36.4	38.4	32.1	28.0	26.9
Industry & construction	36.4	23.9	24.8	28.2	30.0	30.7

State	22.3	14.4	15.2	17.7	19.1	19.4
Private	14.1	9.6	9.6	10.5	10.9	11.3
<b>Industry</b>	<b>31.0</b>	<b>18.8</b>	<b>19.8</b>	<b>21.7</b>	<b>21.5</b>	<b>22.0</b>
State	19.9	12.3	13.3	15.1	15.3	15.9
Private	11.1	6.5	6.5	6.6	6.2	6.2
<b>Construction</b>	<b>3.4</b>	<b>3.8</b>	<b>4.0</b>	<b>5.6</b>	<b>7.4</b>	<b>7.6</b>
State	2.2	2.0	1.8	2.5	3.7	3.5
Private	1.2	1.9	2.2	3.1	3.7	4.1
<b>Service</b>	<b>20.3</b>	<b>38.6</b>	<b>35.7</b>	<b>38.8</b>	<b>41.2</b>	<b>41.6</b>
State	20.3	17.1	17.0	17.6	19.3	20.0
Private	0.0	21.5	18.7	21.2	21.9	21.6

Source : Statistic General Department.

**Table7 : Growth rate of economic sectors based on the economic industries (%)**

	1987	1990	1991	1992	1993	1994
<b>Total</b>	<b>3.7</b>	<b>5.1</b>	<b>6.0</b>	<b>6.8</b>	<b>8.1</b>	<b>8.8</b>
State	5.9	2.5	8.9	12.4	11.6	12.8
Private	2.5	6.4	4.7	6.8	6.2	6.7
<b>Agr. &amp; forestry</b>	<b>-0.6</b>	<b>1.5</b>	<b>2.2</b>	<b>7.2</b>	<b>3.8</b>	<b>3.9</b>
State	13.1	-22.9	2.1	1.7	6.3	6.3
Private	-1.0	2.3	2.2	7.3	3.7	3.8
<b>Industry</b>	<b>8.8</b>	<b>2.9</b>	<b>8.7</b>	<b>13.5</b>	<b>12.8</b>	<b>13.6</b>
State	7.9	5.4	10.4	18.6	14.7	14.5
Private	10.2	-0.8	6.0	5.0	9.1	11.8
<b>Service</b>	<b>5.5</b>	<b>10.8</b>	<b>8.3</b>	<b>7.0</b>	<b>9.2</b>	<b>10.2</b>
State	3.3	2.1	7.4	7.5	8.8	11.3
Private	7.8	19.4	9.0	6.6	9.6	9.2

Source : Statistic General Department.

According to the table7, the growth rate of various economic sectors are rather different. During the period from 1993-1994, the National economy increased 8%/year, of which the State economic sector increased over 11%, while the Private sector had very low growth rate (below 6,5%).

During the period of early 90s, although the enterprises and households developed quite fast, the State enterprise sector still remained higher growth rate to compare with the Non-state sector thanks to the high growth rate of some industrial products such as : oil, steel, cement, fertilizer ... In the World Bank's report, it was mentioned : "We haven't known how much the growth of the Private enterprises and households influences to the growth of the whole Gross Industrial products and how it reflects the cooperative sector's changes yet . However, products made by the private enterprises had risen up in almost all aspects while the products made by the cooperatives had gone down".

## b/Creating jobs :

The world Bank's report also pointed out that the private economic sector has been created a lot of jobs in the recent years, while jobs in the State sector have been reduced gradually.(4)

For Vietnam - an Agricultural country with 70% of population living on the farming work, the exist of SMEs and cooperatives is necessary, as they create additional jobs(except stable one) to attract unemployed people in the rural areas, especially in mountainous & removed ones. By this way, the SMEs and cooperatives make an active contribution to the unemployment problem solving and increasing income to the farmers. Generally speaking, the living conditions of farmers in the areas with additional jobs (except the main agricultural job)is better than other ones.

The above conclusion shows that the non-state enterprises have developed very fast although they started from very poor infrastructure. Their annually average growth rate on the surplus value is about 6,5 %. It was even higher in the industry sector in 1993-1994, about 10% in. However the enterprises still haven't reached the growth rate made by the State enterprises.

Most of the Non-state enterprises have been set up recently and are mainly consisted of households with lower capital than the State ones. That's why the Non-state enterprises have tendency of concentrating into the light industries, while the State enterprises, especially joint-ventures are concentrating into the heavy industries.

Over the past period, number of cooperatives and their operations have reduced rapidly, instead of this, the private enterprises have developed quite fast.

The Non-state enterprises with SMEs just only appeared recently after approvement of some State's Laws and documents related to this form of operations. However, this economic form is still facing with many difficulties in it's development process, especially when the legal frame is still not completed and effectively.

Briefly speaking, the active contribution of non state SMEs has made economy stronger and creates jobs by the following ways:

- Attracting capital
- Strengthening dynamic and effectiveness of economy. Contributing to the industrial distribution in different resident areas, promoting the stable development among regions in the country.
- Playing supporting role to the large industrial zons. Making confuction for cooperation and competition for common development.
- Exploring rich potentions in the people; using natural and material resources effectively, including waste material in production of living.
- Increase people's income, contributing to the transaction of economic mechanism.
- Contributing to maintaining and developing professional village and traditional handicraft industries to produce products with traditional and natural charactor.

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“ The private economic sector has been created a lot of jobs in the recent years, recruited all people who are willing to work, including the demobilized solders and workers who were dismissed from the work by the State enterprises, although this sector had lower growth then the State enterprises.



- Along with active contribution to economy, SMEs also have some obstacles and weakness that the “ Expost promotion house” need to relieve in order to develop strengths and limit weaknees.

Their weaknees are as follow:

- Limited capital, back ward technology.
- Weak capability of worker training. They mainly use simple labourers, therefore productivity is low.
- Lack of awereness on the low and policy.
- Hiring tax.
- Hiring registration for doing business.
- Making bad quality of products.
- Business having small size and uneffectiveness.

### III/ Import and export activities of the Non-State SMEs.

In the statistic system of Vietnam, there is no detail figure neither on the operations of SMEs in general nor on their foreign trade activity in particular.

The Vietnam foreign trade statistic at present just only classifies the Central import-export from the local ones. The statistic on the Central import-export is divided into 2 types : direct and indirect ones while the local import and export cover also the State and Private enterprises, but not divide into direct and indirect ones.

Although the statistic doesn't help us to classify the commerce activity of the state sector from the Non-state one, but the fact shows that the State enterprises obtain almost all import -export quotas as well as export-import value. There are many reasons for this, but the main reasons are as follow :

\* The foreign trade monopolized system which existed for a long time in Vietnam economy has partly prevented the SMEs from involving the import-export activity.

\* The Non-state enterprises have been newly existing in the market economy, just only since the renovation period started (1986-1989) Therefore, their activities in all aspects, including import and export are still very weak.

\* The business operation of the Non-state enterprises is uneffective due to the strick regulations on issuing import export licences.

\* In fact, the Non-state enterprises still have advantages in exporting with high growth speed thank their advantages in capital, laborers, technique and marketing experiences.

\* In the past period, the well-running Non-state enterprises also had got license on direct import and export. However, most Non-state enterprises had to export and import through the State enterprises and paid them very high commission.

Although the nonstate SMEs do not occupy a has big share in the direct import-exposts as the been playing an impostant role in the impost-expost activity by providing

resources quiet many good resources in the free labour force, especially forestry of agricultural processing products and Art- Article Items.

As result of survey in 22 Non-state SMES recently by Vietnam cooperative Union, their Export value has reached USD 10,981.605. If we have enough information and data, we can see that export value of the Non state SMEs is not small.

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Note: (5) previously, only State-enterprises were allowed to act in the export aspect, but now production of business units in all economic sectors are allowed to export and import material for production directly. Although, there are already some active improvements in import-export policy, some obstacles are still existing as follow:

- Import and export Items are changing every year
- Many regulations are not reasonable such as: minimum level of enterprises which are newly entering into import-export sector. According to the recent regulations, the enterprises having exporting right are those, which can produce export Items completely and having a stable export market in the near future-with the registration capital of more than VND 2 bill at the moment of export registration. This regulation has given advantages for the large companies in their export activity.

- There are not regulations on export promotion yet- At present, donation activities for export are limited only in providing short term loan (3-6 month) to the large enterprises for production of export Items.

( From report on “ Completing Macro economic policy for promoting development of large of SMEs in Vietnam” by Dr. Le Dang Doanh, Director of Central Economic management Institute.)

#### **IV/Import and export products :**

Based on the structure of economic elements in the GDP, the main import-export goods of the Non-state SMEs are as follow :

- Raw and processed forest and marine products.
- The Art-Article handicraft products (wooden sculpture, sculpture and engraved wooden, embroidery, bamboo and rattan , art-article, silk ...
- Light industry products (shoes, garment, carpet ...)

In General, the export products that SMEs deal with are those which require low capital and technology and a lot of laborers. Surplus value of some kinds of product is not very high, but the important thing is that the production and market of these products create jobs for and increase income to the producers most of which are economic households.

The products made by the Non-state SMEs have general characters of the small sized production process which use simple and back-ward machinery & technique and a lot of laborers. Recently, thank the economic renovation process and open door policy, the SMEs can produce some kinds of product with industrial charters, but the number of enterprises which work in these industries is very small. Therefore, except products made by using industrial process such as : textile, garment. shoes, ... the quality of other products is no identical and stable, especially the handicraft and traditional article ones

Because of the above mentioned characteristics, the products made by the Non-state sector with poor design and high cost are not capable to compete in the market. On the other hand, the enterprises themselves are hardly to get the market information because their products are not well-known in the market. For other kinds of product which require fast changing design for meeting the customer's demand such as : textile, garment or shoes ... the enterprises make according to the customer's design and quality because they are lack of market information and opportunity of market penetrating as well as skill for designing new products.

#### V/ Import and export forms :

Recently, the main import and export forms which have been using in Vietnam are as follow :

- \* Direct import and export.
- \* Entrust import and export.
- \* Selling to the foreign customers in domestic market, using foreign currency.

However, for the SMEs, all above mentioned forms are at different levels. Moreover, at present, there is no detail statistic on these import-export forms. But the fact shows that :

The direct import and export form: is not popular and is used in some enterprises only. In order to get direct export license, the enterprises must meet some requirements such as : capital, turnover, personnel ... Recently, in some places they loosen the regulation on the import-export license, so the production companies can directly export their products and import raw materials for production. Up to March 1995, 15% of export licenses were handled by the private sector. Number of the cooperatives which had export licenses was much smaller than enterprises ones, Supposing that , even they had license they still could not explore their potential. One of the obstacles which prevents the enterprises from direct import and export is that they are lack of well trained staff on the foreign trade.

#### Entrust import and export form :

Most Non-State SMEs do not have import-export license, therefore, they must go through the State enterprises and pay them commission with stipulated rate. In doing this, they face with the following difficulties :

- There is no export market for them and thus, they are totally depend on the orders from exporters.
- There is no active research on the market, customers, designs or partners finding.

With this form, the dynamism of enterprises is not being as much promoted as the direct import-export form. In general, SMEs often purchase materials and sell their products definitively. That's why they are lack of market understanding.

Selling to the foreign customers in the domestic market, using foreign currency :  
With this form the enterprises purchase materials from and sell their products to the

foreign customers. But there is no detail figure on this aspect. This form of purchasing and selling is very passive because the suppliers do not have enough market information, customer's liking and they produce products according to their thinking but not to customer's demand.

As the World Bank reported, the Non-state sector is afforded a lot of benefit from the free foreign trade mechanism, but they are still hardly dealing with the quoted items or those assured by the Government because there are still some beneficial points for the State Enterprises in the policy frame.

As the result of survey in 22 Non-state Enterprises recently by VCU, the export value of these enterprises increased up to USD 10,981.605, of which the value of direct import export occupied only USD 209.845, while value of the entrust import export increased up to USD 3.137,118 and value of self made products is increased up to USD 597,642. The total value of products selling at the place is reached USD 7,037.000. So we can say that the entrust import and export and selling at the place (selling to the foreign customers in the domestic market, using foreign currency) having important position among these enterprises.

## VI/ Valuation on the competitive capability of the Non-State enterprises in the market.

If we simply take a look at the economic effectiveness based on some traditional criteria only, we can see that the operation's effectiveness of the Non-State SMEs is much lower than the large enterprises. However, if we consider the socio-economic effectiveness in the whole also, we will see that their business effectiveness is much higher. This is reflected in the following aspects :(3)

\* Attracting a big quantity of free capital from population(which is not capable to create profit, or if yes, very small portion of profit) and use it in the business operation to create bigger profit.

\* Creating many jobs with low expenditures, using mainly population's capital, otherwise the State must provide very big investment for solving unemployment problem. ( In average, the State has to invest more than VND 10 Mill to create 1 job only).

\* Helping the whole economy, especially the large enterprises to work more effectively. The SMEs can operate as supporting units, and provide materials to the large industries. The experience from other countries shows that the SMEs play an important role by working as supporting industries. In this way they improve the link among the large enterprises and promote their production capability and the process of industrialism.

\* Promoting competitive capability in the economy by increasing number of enterprises and products.

\* Increasing the security rate, reducing risks in the fluctuation market economy. This is flexible character of SMEs for the market and good's changing capability.

\* Meeting the consumer's demand with cheaper price and better services.

\* Contributing to the more equally distribution, hunger elimination and poverty alleviation .

Among the small and medium enterprises, we can divide into 2 types : good working (include most limited and private companies) and bad ones(include most of cooperatives and economic households). Their working capability is defined by analyzing various factors such as : skill of laborers, management capability, equipment and industrial situation ...

Moreover, as the world Bank assessed, although the development of investment and foreign trade has played an important role in the economic growth in general, but it has not influenced directly to the private economy recently. The Vietnam foreign partners in almost all joint-ventures are state enterprises and most their import-export activities are concentrated into the industries in which the state enterprises occupy the biggest ratio of products.

However, all above do not mean that the SMEs have no obstacles. Their weaknesses in the transforming economies can be summarized as follows :

- \* Weak capability of market penetrating.
- \* Lack of capital resource.
- \* Weak capability of new technology penetrating.
- \* Poor organization and management.
- \* Bad business relation and product marketing network.

These weaknesses are quite common for the Vietnam SMEs.

As the result of survey and analyze of 184 SMEs made by the Department of Legislation and Policy(VICOOPSME).The obstacles of SMEs in Vietnam are listed below (ranging from the most difficult to the less difficult one).

- Marketing of products in both domestic and international markets. Concretely, they are lack of market information.
- Lack of research and development capability to meet the changes in the market economy.
- For financial resource : they are facing with difficulties in borrowing long term loan as can not meet the Bank's requirement on the borrowing money. And the interest rate is rather high for them.
- Production organization : old machinery and equipment, back-ward production technology, lack of space for production expanding; poor product design, weak capability in reaching the market's demand.
- Lack of favorable conditions for worker vocational training to improve their skill.
- Poor organization and management.

- Lack of knowledge about legislation as regulations are not clear and often changed.

- Export : lack of market information and understanding. Product's quality does not meet the market's demand.

- Advertisement : lack of finance resource and experience in the product advertisement .

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Source : National Political Institute and Frederick Ebert Institute (Germany).Project Science Year Book on Policy of promotion for the SMEs in Vietnam; Research result of stage I(August-December 1996), Hanoi Dec.1996;P.35-36

## Part 2

### The necessity of project on “Export promotion house”.

#### 1. For the cooperatives and SMEs :

Thank to the contribution of SMEs and cooperatives to economy and society, the development of SMEs is an important strategy of many countries in the world, especially of economies in the transforming process. Different from large enterprises and huge groups, the SMEs’ capability of solving problems and overcoming difficulties by themselves is very weak. Therefore, impact and support from outside are necessary. In general there have been always support from different promotion organizations , however, it is necessary to have a separate promotion organization for SMEs to help them working more effectively. Thus, there is a need to have a project on “Export promotion house”.

Normally, the “Export promotion house” provides the SMEs support in their both production and exportation. But here, “Exportation” is chosen as the major objective , in line with the export promotion strategy of Vietnam which is mentioned in the resolution 8. However, it does not mean that the “Export promotion house” will not provide the SMEs support in their production activity as export activity can not be done effectively without production. The export activity must be done to impact back to the production and setting goal for it. Through export activity, the enterprises have to face with the world market competition in the global situation to meet the following requirements :

\* Products must meet the customer’s demand. For SMEs, they have advantages in producing varied - diversification products.

\* Products must have good-enough competitive capability for exporting. The requirement for the export products is often higher than other ones (owing to higher living level in foreign countries) and price must be reasonable, sometime even lower than price of similar products.

The support of “Export Promotion House “ to the cooperatives and SMEs is necessary. Through this the Cooperatives and SMEs will gain more and better knowledge on the import-export business, experience in organization and management, they will also have wider relationship with clients and have more practical information for their business.

Moreover, establishment of the “Export promotion house” under management of VCU will bring about benefit to SMEs as they are members of VCU . Both VCU and SMEs understand clearly about capability and demand of each other.

#### 2. Contributing to the socio-economic development of the country.

The “Export Promotion House”,through its activities will contribute to the socio-economic development of the country by the following ways :

- Contributing to the material creation for the society and increasing the contribution ratio of this economic sector to GDP.

- Creating stable jobs and exploring free labor force, in this way, contributing to the hungry elimination and poverty alleviation; making the income distribution process more equally.

- Contributing to the socio-security stabilization and social evil alleviation.

By establishing the “Export promotion house”, import export activity of enterprises will be promoted as the export promotion house will provide help and support to “enterprises in overcoming difficulties that they are unable to solve at this moment. At present, in Vietnam there is no any organisation working in the export promotion sector.(See Note 5) for enterprises in general and for the Non-state SMEs in particular.

With the establishment of “Export promotion house” enterprises will be able to familiar with world market information, so that they will have more comprehensive observe about the world market through reports on study of regional market. They will also have enough necessary information about each region. Based on this, they can make a plan and concret steps for exporting to different markets.

With the central role of contacting, the export promotion house will be organisation carrying out funtions such as: arranging meeting for foreign and domestic entrepreneurs, providing enterpreter, preparing document and contract and strategy of negotiations for domestic enterprises with foreign partners conducting training courses to improve knowledge of entrepreneurs on the national and international laws and regulation. Through these activities, the “Export Promotion House” will study its training activity and makes suitable contain of training program, meeting demand of enterprises.

Establishment of the “Export Promotion House”, Enterprises can apply for consultancy on import - export activities with subsidy or resonable expenses.



# Part 3

## Functions, tasks and operational mode of the “Export Promotion House”

### I. Concept and functions :

#### 1. Concept :

The “Promotion Export Center” or the “Export Promotion House” is an organization which provides support to the cooperatives and SMEs in their export activity (in order to avoid unnecessary inequality, dispute and prevention) to get higher effectiveness in the export business.

A such Center will be a supporting clue for the cooperatives and SMEs in various links, ranging from market research, product design, production organization to product marketing in the international market.

The “Export Promotion House” is an administrative unit under management of Vietnam Cooperative Union, having legal statute, separate account, seal and independent economic accounting system which use its income to cover operational expenditures. Its main income source is from export product value (a certain ratio deducted from the export value) and from consultative and educational services provided by the “Export Promotion House” to customers (most of which are members of VCU).

#### 2. The major function of the “Export Promotion House”.

- Supporting Vietnam SMEs to enhance their production and export capability through consultative and educational activity.
- Helping foreign enterprises in studying Vietnam market as well as in finding and selecting Vietnam suppliers.
- Working as a contact clue between foreign and domestic enterprises.

#### 3. Budget for carrying out activities of the “Export Promotion House”

- Donation and supporting fund of international organisations.
- Contribution of enterprises through using services provided by the “Export Promotion House”
- Equity of the “Export Promotion House”

## II. Objective, orientation and tasks :

### 1. Objective :

Objective of the “Export promotion house” is to improve quality of products and expand domestic and foreign markets. It’s clients are all state and non-state enterprises.

The outputs of activities of the “Export promotion house” as follows:

- Entrepreneurs will be able to design new products.
- Producing and marketing products in the foreign market.
- Increasing quantity of products.
- Increasing turnover in the domestic and overseas markets.
- Open new market.
- Increase market share in the existing markets.

### 2. Operational orientation of the “Export Promotion House” :

Considering all above mentioned objectives, operation of the “Export Promotion House” can be concentrated on the following main directions :

#### a. Human resource development :

Designing and conducting training and practical experimental programs for the SMEs at home and in overseas.

#### b. Helping SMEs to access capital resources :

#### c. Marketing:

\* Designing and conducting supporting programs on the business network. Gathering information on the domestic and foreign goods dealing associations.

\* Organizing forums and meetings for the business enterprises.

\* Providing market information.

\* Promoting the trading activities and exhibition.

#### d. Technology :

\* Setting up research Center to study product designs, products and advertisement mode.

\* Conducting technology transferring programs.

\* Designing and conducting other studying and developing programs.

#### e. Enhancing the SMEs’ organisational and management capability.

\* Introducing successful organizational structures of SMEs in the market economy and in the export operation of Vietnam and of some other countries which have similar conditions.

\* Providing and enhancing basic knowledge on the management such as Labor management, calculation of expenses and production effectiveness, strategy decision in production and export.

\* Enhancing knowledge on Marketing and export.

### 3. Tasks :

With the above mentioned objectives, the “Export Promotion House” has the following concrete tasks :

1. Creating favorable conditions for the Small and Medium Entrepreneurs and Cooperatives so that they can meet each other and exchange business & export information and experience.

The “Export Promotion House” needs to have an exact information system on the domestic enterprises in order to work as linking clue for the enterprises to associate them together, especially in the case when one enterprise uses products of another enterprise as material for their production. There is a need to classify enterprises according to good groups based on their business result (good, normal or bad).

The enterprises also should have chances to meet each other and exchange experiences.

2. Providing consultancy and market information on the export aspect for the Small and Medium Entrepreneurs and Cooperatives.

Providing periodical information via magazines, news-paper, bulletin published by the “Export Promotion House”.

Providing specific information according to the orders of the enterprises on the payment basic or free of charge.

The information provided by the “Export Promotion House” to the SMEs can be divided into various groups depend on the classification of goods. There is information for the entrepreneurs which specialized deal with some kinds of product. But there is also another information on the export market for the enterprises which are willing to export to that market (information on the demands, customer’s liking or regulations related to the import and export , main competitors in that market, comparison about the strengths and weakness of competitive products in the market).

3. Making direct contact with international organizations and foreign economic organizations or foreign customers in order to introduce enterprises and support them in finding market opportunities and signing export contracts with foreign customers.

4. Supporting enterprises in making preparation to take part in the trade fairs at home and abroad. Making plan to study market in oversea and finding the way to access the market.
5. Helping enterprises in the market researching( study on desk and in practice). Finding new markets for exporting and expanding the existing ones.
6. Studying the project on associating the SMEs with the large groups based on the satellite structure and producing parts of the last product (this experience is very common in some countries in the region, the Automobile industry of Japan have been also developed based on the SMEs).
7. Advertising, introducing products of the SMEs and Cooperatives in the country and oversea. Setting up the Center for showing and introducing products if possible
8. Conducting workshops, seminars, vocational training's on the import-export and marketing for the entrepreneurs.
9. Together with the SMEs and Cooperatives, catching up timely the changes on the policy and regulations; taking part in the amendment and suggestions to the responsible State agencies on the issues related to the policy on the trading development and export; working as linking clue between the enterprises and the State.
10. Involving in making import-export strategy for the Non-state sector by making import-export strategy for the VCU.

### **III/ Operational Mode.**

#### **1. "Product" of the "Export Promotion House" :**

The "Product" made by the "Export Promotion House" is a kind of new product in the Vietnam Market recently. In the countries with the market economy, this kind of "product" had appeared long time ago and quite common.

The "Product" of the "Export Promotion House" will include the following services :

#### ***a) Consultancy Service on carrying out the import-export activities :***

- \* Consultancy on the import-export goods business and skill.
- \* Making goods strategy for exporting ; finding and developing export market.
- \* Designing products; developing raw material and production Providing consultancy for enterprises in the developing, producing special products on the order basic; representing for foreign customers and Vietnam producers as their orders.
- \* Making negotiation plan for each type of product concretely.

\* Working as a clue for the producers and buyers on the basis of comparison of foreign customer's orders with Vietnam Producer's capability and contrary; arranging meetings for them so that they can meet each other and negotiate with each other directly.

\* Providing legal support to foreign customers when they make trips to Vietnam to work with enterprises; making working programs and necessary arrangements such as : lodging, boarding, transportation, interpreters, information, contract preparation ... for them during their staying in Vietnam.

\* Checking product quality according to the customer's order, including all related activities to ensure that the supplying goods will have right quality as orders. This activity will be done through controlling the material use, laborer skill, product quantity, sizes, delivery term, packaging ect...

\* Providing guidance to SMEs in completing document and procedures related import and export of goods. Making necessary procedure for exporting.

*b. Studying, surveying and defining difficulties and limitations of enterprises in goods production; suggesting solutions for solving these problems.*

Helping enterprises to define :

\* Strengths and weaknesses of enterprises according to each kind of product.

\* Studying the strengths and weaknesses of competitive products in the market.

Based on the above analyses, the "Export Promotion House" will help the enterprises in making marketing strategy for each type of promoting export product concretely.

*c. Consultancy service on the education and human resource development :*

\* Conducting surveys, studying training capability and demand of the enterprises; classifying such demands; conducting courses as agreed to selected subjects and march suitable training organizations to each type of enterprise.

\* Organizing specialized symposium on market information, goods, experience in export and import activities.

\* Acting as a clue of business contacts for SMEs, particularly foreign trade, in order to attract more international partners.

\* Devising export or import plan for specific goods, especially for the export goods.

\* Organizing short term courses on :

- Goods production and market expansion.

- Marketing activities supporting direct export of the business community through polling suggestions on product development, replacement, international marketing on industrial products and services.

- Vietnamese import and export law and policies.

- Commercial policy of concerned countries.

*d. Business information service :*

Operating as an instructor; guiding enterprises in searching, using efficiently information sources; market valuation and analysis experience, distributing useful information sources to interested enterprises on order.

These services can be provided to SMEs freely or charge them upon their order.

**2. Pricing “products” supplied by the “Export Promotion House”**

Service product provided by the “Export Promotion House” on the basis of order or contract signed with customer will be priced as followed:

Demand for simple information will be supplied according to fixed price list.

Product/customer study contracts will recommended and priced on the basis of single product or a group of products agreed by both sides.

Separate consultation contacts: price will be decided upon specialization of each contract.

Staff training contracts will be priced upon type of course, its training program, duration. Costs shall be calculated to cover rental of meeting room, lecturer hiring, prints, ect...

Trade fair participation contracts will be recommended and priced upon the nature of the trade fair. Complete package for a SME to participate in domestic trade fair is US\$ 400. Expenses to be collected by the “Export Promotion House” is US\$ 50/person(excluding lodging and accommodation expenses) for foreign trade fair.

**3. Customers of the “Export Promotion House “:**

a) SMEs which want to access to or expand their export activities, persons who are interested in business management training to start, expand their business or to raise business efficiency.

b) Foreign enterprises who are looking for trading partners in Vietnam.

c) Bodies, organizations which are interested in assisting SMEs to create jobs and goods for society such as Provincial, City Committees, Ministries, Provincial, Central bodies or multilateral organizations such as World Bank, EC, or bilateral organizations or Non-Government Organizations (NGOs).

d) Other organizations which are interested in business related issues.

#### 4. Competitors of the Export Promotion House

Today, in Vietnam Market, export and business development supporting activities are scattered and poorly organized. Main supporters are Government Bodies. For recent years, a number of new organizations have been taking part in supplying some service “products” similar to those of the “Export Promotion House”.

The “Export Promotion House” will face competition in supplying their products. The competition can be in various forms and come from sides. Prospect competitors of the “Export Promotion House” are :

\* Companies which conduct their own export and import and training activities.

\* Local consulting firms.

\* Foreign consulting firms.

\* Government, Non-Government consulting and training Centers.

\* Vietnam Chamber of Commerce and Industry.

These competitors have different strengths and weaknesses. And the “Export Promotion House” itself also has disadvantages and advantages over his competitors.

##### *a. Large import export companies.*

These companies conduct supporting or training activities and exporting operation by themselves and consider those as one of their functions.

Vietnamese large import export companies are experienced in organizing their import and export and staff training activities. However, SMEs have not enough resources to do this. Moreover, not all companies have capability to conduct these activities.

##### *b. Local consulting firms.*

This type of companies has appeared in recent years. Some have gained good reputation such as INVESTCONSULT, INVESTIP, CFT ect... and numerous small firms.

These firms also have ability to provide import-export, training related services. They usually conduct services concerning import-export procedures upon customer’s demand.

The advantage of these firms is that they have flexible price benefited from low cost of service. Other advantage of local firms is that they have insight expertise of domestic market, they can conduct surveys easily. In general, large companies operate quite well, especially in investment aspect.

The disadvantages of these firms, particularly small ones is that they are newly established, lack of well trained and experienced staff and market research.

Their main services usually relate to administrative procedures of import-export and investment which can be settled through their own contact, and lack of the specialized expertise.

*c. Foreign consulting firms.*

Foreign consulting firms which have good reputation in providing quality services such as Price Waterhouse, KPMG, ect... have established their representative office in Vietnam.

Strengths of these firms are :

\* Good expertise and experience in export supporting and human resource training. They are strong in consulting because of their good expertise and experience in market research, product development and management skill. Such firms are favored by foreign customers for their reputation.

\* Good understanding of international trading practices.

\* Good understanding of foreign markets.

Weaknesses of these firms are :

\* Their services prices are higher than those provided by local firms. Therefore, it is difficult for SMEs to approach these services.

\* Without a proper representative office in Vietnam, these companies will hardly access to the local market.

*d. Government consulting bodies and organizations :*

Most of ministries have consulting, training centers to serve their operation such as Consulting and Training Center of the Ministry of Planning and Investment, the Ministry of Trade, the Ministry of Construction, etc...

These Centers have their own advantages which the "Export Promotion House" obtain. For example, Consulting Center of the Ministry of Construction can also provide export supporting services to SMEs doing business in building material production and import-export.

However, the quality of such Centers depends on qualifications of their staff. Not all Centers can provide high quality service. These Centers may not have consulting and training experience to apply to SMEs and cooperatives as good as that of the "Export Promotion House".

*e. Vietnam Chamber of Commerce and Industry.*

This organization also provides export supporting activities, conducts specialized courses for its members; arranges participation of enterprises to domestic and foreign trade fair and collects fees for such activities.



Vietnam Chamber of Commerce and Industry has a large membership, including all enterprises of all sizes and sectors and maintain wide relation with foreign business community.

Nevertheless, some activities of the Chamber on Export consulting are not so strong, particularly specialized information for specific enterprises.

At the present, Vietnam Chamber of Commerce and Industry is preparing special business oriented information services with focus on the large companies.

Through the above analysis of competition, the "Export Promotion House" of the Cooperatives and SMEs appears to have certain advantages over its competitors : it knows well each of its customers as well as their demand. However, the "Export Promotion House" has advantage on the market research because it has established and had a good understanding of its member net-work which consist of the SMEs and Cooperatives. However, as a result of late incorporation, it has to carryout self-introduction activities and suitable advertisement campaigns and to set up a flexible and highly responsive mechanism to satisfy customer's needs.

#### 5. Factors affecting competitive edge of the "Export Promotion House".

Product of the "Export Promotion House" competitiveness depends on the following elements :

\* Quality of services : provided by the "Export Promotion House" in comparison to those of other suppliers. This element is determined by the qualification of its staff. Therefore, export supporter will have to choose experienced staff who are specialized lecturer, consultants, informatics experts and business executives.

\* Time of service : punctuality, responsiveness of information, service supplied to customers. In order to achieve this goal, the "Export Promotion House" will have to apply new technology in international communication. This is necessary working tool which should be equipped at the initial stage of the project. A well wired computer system, a diversified and update data bank(which can be connected to business information supplier such as Center for business Information of the Ministry of Trade to purchase news) will be set up first.

\* Service price : should be correspond to the quality, however not too high than other sources.

\* Advertisement activities : shall be spread both nationwide and worldwide.

**PART 4**  
**CONSTRUCTION SITE - ARCHITECT**

**I. Site and place**

Head Office: The total area is 250m<sup>2</sup> at 62 Giang Vo Street. The above area will be allocated as follows:

**Table 8: Construction site of the "Export promotion house" at 62 Giang Vo Str.**

STT	Room	Kind	Square (m <sup>2</sup> )
1	Director Office	Fix	10
2	Vice Director Office	Fix	14
3	Administration Office	Fix	14
4	Consultancy Division	Fix	14
5	Training Division	Fix	14
6	Information Division	Fix	14
7	Meeting hall and showroom	Fix	30
8	3 small meeting rooms, which are divided by flexible glass windows	Flexible	140

**II. Construction - Architecture:**

The above area of 250m<sup>2</sup> will be divided into some fixed room and flexible meeting hall as indicated in the above table. As for showroom at 80 Hang Gai street, there will be another separate project. In this site, special note should be paid to the way of displaying each particular product in order to show their own beauty and unique.

**III. Facilities and equipment for operation:**

Desk and furniture for staff.

Furniture in meeting hall of about 50 persons.

Computers, printing machines, telephones and faxes;

Documentation shelves, board, audio and video equipment, over head-projector.

Displaying and showroom: shelves, cabinet, and other facilities for displaying goods.

Vehicles for business trip.

Detailed expenditure for reconstruction, equipment and facilities will be mentioned later.

## IV. Initial construction cost of the Export Promotion House

1. Reconstruction of office: 45000 USD  
 2. Facilities and equipment

**Table 9:** Equipment of the “Export promotion house”

Item	Quantity	Unit Price	Total
<b>1. Director Board</b>			
Table and chair	1	325	325
Documentation cabinet	1	265	265
Telephone	1	200	200
Air Conditioner	1	1.000	1.000
Computer	1	2.200	2.200
Table and chair for receiving guests	1	1.000	1.000
			<b>4990</b>
<b>2. Vice Director's Board</b>			
Table and chair	2	325	650
Documentation cabinet	2	265	530
Telephone	2	200	400
Computer	1	2.200	2.200
Air Conditioner	2	1.000	2.000
			<b>5780</b>
<b>3. Administration Division</b>			
Table and chair	2	325	650
Documentation cabinet	2	265	530
Telephone	1	200	200
Fax machine	1	700	700
Photocopy machine	1	2.500	2.500
Computer	1	2.200	2.200
Laser printer	1	500	500
Air Conditioner	1	1.000	1.000
			<b>8.280</b>
<b>4. Consultancy Division</b>			
Table and chair	2	325	650
Documentation cabinet	2	265	530
Telephone	1	200	200
Computer	1	2.200	2.200
Laser printer	1	500	500

Air Conditioner	1	1.000	1.000
			<b>5.080</b>
<b>5. Training Division</b>			
Table and chair	2	325	650
Documentation cabinet	2	265	530
Telephone	1	200	200
Computer	1	2.200	2.200
Laser printer	1	500	500
Air Conditioner	1	1.000	1.000
			<b>5.080</b>
<b>6. Information Division and Data Bank</b>			
Table and chair	2	325	650
Documentation cabinet	2	265	530
Telephone	1	200	200
Computer	2	2.200	2.200
Laser printer	1	500	500
Documentation cabinet with many sections	1	500	500
Air Conditioner	1	1.000	1.000
			<b>5.580</b>
<b>7. Small Meeting Room</b>			
Furniture		1.000	1.000
Chair and table for 8 people		800	800
			<b>1.800</b>
<b>8. Meeting Hall</b>			
Table and chair for 50 people			8.000
1 set of television and video	1	1.700	1.700
Amplifier, sound and lighting systems	1	2.000	2.000
1 headprojector and screen	1	1.000	1.000
Flexible board	1	100	100
Floor carpet	50 m <sup>2</sup>		200
White board	1	50	50
Air conditioner	2	1.000	2.000
			<b>15.050</b>
<b>Total costs of equipment</b>			<b>51.640</b>

The total costs of 51.640 USD of the above two main items will be covered by the capital of the project "Promotion and Development of Small & Medium sized Non-State Enterprises" (GTZ) - Germany

## PART 5

### ORGANISATION, ADMINISTRATION, LABOUR AND SALARY

#### I. The administration and managing modelling of "Export Promotion House"

Director Board and functioning Division

Director Board consists of:

- One general director.

- 2 vice general directors: 1 person in charge of consultancy and information, research; 1 person in charge of training and showroom.

Functioning Divisions:

General Division: In charge of general issues, accountancy and administration (2 persons).

Showroom and advertisement (2 persons).

Consultancy Division: adviser on general issues and export and import issues in particular (2 persons).

Information and research Division, including data bank (2 persons).

Training division, upgrade export and import techniques, organisation of seminars (2 persons).

In order to support activities of the "Export promotion house" and explore its potention, it is necessary to have quality and experience manager and staff. In the early stage of its establishment, income will be very limited, number of employees will be also small, and it will be increased gradually in the follow years. At the beginning, some good staffs of VCU will work for the "Export promotion house". Beside that, some other outside people will be employed to carry out some activities such as: specialised study training, ect . . . to provide services with good quality and price.

Number of employees of the "Export promotion house" in the first 3 years are given in the table 10. Whenever, there is a demand of having more people for some specific activities, these employees can mobilise the associated people to fulfil services required by customers.

#### II. Personnel plan:

Personnel of the "Export promotion house" will be changed through the years according to its operation. Tentatively personal in the first 3 years is as follow:

**Table 10: Personnel plan of the “Export promotion house”**

	1998	1999	2000
Director	3	3	3
General Administration Department	1	2	2
Consultancy Department	2	2	3
Information Department	2	2	3
Training Department	2	2	2
	<b>10</b>	<b>11</b>	<b>13</b>

**III. Annual Salary Fund:**

Annual Salary Fund will be changed annually based on personal plan.

**Table 11: Salary plan of the “Export promotion house”**

	1998	1999	2000	1998	1999	2000	1998	1999	2000
Director	1	1	1	150	180	200	1800	2160	2400
Vice Director	2	2	2	120	150	180	1440	1800	2160
Specialist	7	8	10	80	100	130	6720	9600	156000
<b>Total</b>	<b>10</b>	<b>11</b>	<b>13</b>				<b>9960</b>	<b>13560</b>	<b>20160</b>

These salaries will be abstracted from the total earnings of the Export Promotion House. In the following years, the number of staff may increase depending on the operation of the Export Promotion House or at least it will be the number in the first year.

**PART 6**  
**FINANCIAL ASPECTS OF THE PROJECT FOR**  
**"EXPORT PROMOTION HOUSE"**

**I. Revenues of Export Promotion House:**

1. Revenues of the "Export promotion house" is a place to introduce export items of cooperatives and non - state SMEs. The "Export promotion house" will provide support to import - export activities of enterprises in concentrating many qualified items for exporting, strengthening their reputation in the international market.

**Table 12:** Activities related to the revenues of the "Export promotion house"

Supporting activities of the "Export promotion house"	1998	1999	2000
Total export value of enterprises	15.500.000	18.000.000	20.000.000
Training courses with duration of 1 week	5	9	12
Number of reports on market, goods/ region	5	8	10
Consultancy services for each concrete work specialized consultancy based on orders of customers (prices are according to character of work)	6	10	14
Organizing for enterprises taking part into International trade fairs number of people taking part into trade fairs through the year	70	80	90
Selling goods at the showroom (USA)	3.000	4.500	6.000
Income from giving meeting hall for rent number of days through the year	30	35	40
Other activities such as: Administrative procedures, export and import procedures (USD)	2.000	2.500	3.000

**Table 13: Estimated revenues from activities of the “Export promotion house”**

Revenue	1998	1999	2000
Commission from export	15.500	18.000	20.000
Training activity	2.000	3.600	4.800
Research market and providing information	2.500	4.000	6.000
Consultancy service for each enterprise according to their order	1.500	2.500	3.500
Organising a group of enterprises to take part into the International trade fairs	3.500	4.000	4.500
Selling goods at the showroom (whole sale and retails)	3.000	4.500	6.000
Give for meeting hall for rent	1.500	1.750	2.000
Other activities such as: Making administrative procedures, export - import procedures	2.000	2.500	3.000
<b>Total revenues</b>	<b>31.500</b>	<b>40.850</b>	<b>49.800</b>

## II. Expenses.

**Table 14: Expenses of the “Export promotion house”**

	1998	1999	2000
Depreciation buildings, workshops	2.250	2.250	2.250
Depreciation machinery of equipment	10328	10328	10328
Salary	9960	13560	20160
Electricity	1.000	1.200	1.500
Advertisement of insurance	800	900	1000
Payment for loan (6,5%/year)	6.500	6.500	6.500
Telephone and fax payment	1.000	1.500	2.000
Expenses for buying document for study	1.000	2.000	3.000
Other expenses	500	500	500
<b>Total expenses</b>	<b>33338</b>	<b>38738</b>	<b>47238</b>

**Table 15: Balance**

	1998	1999	2000
Total revenue	31.500	40.850	49.800
Total expenditure	33338	38738	47238
<b>Profit</b>	<b>- 1838</b>	<b>2112</b>	<b>2562</b>



## EFFECTIVENESS VALUATION OF THE PROJECT

### I. Financial Valuation of the project:

Generally speaking, in the first year of operation, the export promotion house aims mainly to build the infrastructure but not to get profit. From the 2nd year upward, whenever the operation is smoothly carrying on with high reputation and large scale of business, the House may get increasing profits gradually year by year.

According to the above calculations, the establishment of the export promotion house can bring back real benefit as analyzed, however the financial benefit is not the purpose of the project, but its main benefit is resulted from the operation of Non- State SMEs through the active support of the House.

Thus the benefit obtained by the cooperatives and SMEs through the support of the House again affirm the willing of all these enterprises to establish the Export Promotion House and also the necessity of its existence.

### II. Economic-social valuation of the project

The project of Export Promotion House, besides of material profits it bring about as mentioned above, can bring economic-social benefits through its active assistance to non-state co-operatives and SMEs, particularly:

Contribute to increase the national GDP as a whole, contribute the process of transformation from a centrally planned economy into a state-governed market economy and help enterprises to growth up to the export-oriented direction, upgrade technology, enhance competitiveness of their products and exploit each enterprise's strength. The Export Promotion House will maintain a team of staff and collaborators with knowledge, experience in export-import trading to help enterprises to marketing their products on both foreign and domestic markets, of which the more important are foreign markets.

- Create more jobs for a large group of underemployed labours in rural and urban areas. The Export Promotion House can assist enterprises to enlarge their export markets and therefore enhancing job opportunities for labours. If the labours can directly involve in the process of producing goods for exports, their knowledge will rise together with the increase in their income. By this way, it can contribute the program of poverty alleviation, raising labours' income.
- Contribute to stabilise security and social order by create more employment, reduce social evils created by poverty and jobless.

**PART 8**  
**COMMENT AND RECOMMENDATION**

**I. The feasibility and effectiveness of the project**

This project is fully feasibility and can bring about real benefits for the users. After several initial years of operation, if special consideration is placed on quality of services, the benefits of the Export Promotion House will be higher.

The project is interested by international organisations, research institute, therefore, the project of Export Promotion House receives strong mental supports. Further more, Export Promotion House belongs to the Vietnam Co-operative Union, having a large number of members, who will become potential customers buying services of the Export Promotion House. Through the results of interview co-operatives and SMEs in mid-1997, nearly 100% of interviewed enterprises speak out their demand for an Export Promotion House. These enterprises are very small, therefore they want to have quality services supplied by the Export Promotion House belong to VCU. These establishments have limited finance, therefore they are unable to buy services from consultancy companies and foreign companies.

**II. Impacts of the "Export Promotion House" Modelling**

*1. Impacts on the economy:*

- Create material wealth for the society, that is to contribute to the increase of national GDP. This direction occurs in two directions. The first one is helping enterprises to understand market, introduce their products and create demand for their products. When demand grows up to a limit, it will encourage production of the products. Therefore, the wealth created by SMEs increase and the national GDP will increase. The second direction is that with the help of Export Promotion House, enterprises can create high value-added products, saving natural resources as well as labour resources. The production of enterprises will not develop at the level of producing primary products, it will develop to produce labour-intensive or higher processing products.

- Contribute to speed up the process of economic structural transformation. Build an outward-oriented economy, raise the technology level and competitiveness of commodities, and reasonable usage of natural resources and advantages of Vietnam. Export Promotion House will be a point for contact between SMEs and foreign enterprises, To reach modern production. advanced technology.

- Actively participate in poverty alleviation program by creating more jobs and raising income of labours.

## ***2. Impacts on non-state SMEs***

With the help of Export Promotion House, difficulties and weakness of SMEs will be gradually overcome. Particularly:

- Strengthen enterprises' capability produce and export by supplying enterprises of information on commodities, markets and demand of consumers. Help enterprises to produce the right goods demanded by the markets, not produce passively based on their ability.

- Technology of production will be raised through new investment and changes of technology of each enterprise.

- Strengthen quality of staff through training and consultant activities or participating in trade fair, special seminars on international commodities. Enterprises will have opportunities to export and import directly to exploit their knowledge instead of indirect and passive export in the past.

- Strengthen the creativeness of enterprises in export. Through participating in training courses organised by Export Promotion House, capability of their staff will be gradually raised. Knowledge on markets, commodities will be steadily equipped and will be used as a base for their future development.

## **III. Conclusion and Recommendations.**

### ***1. For the Export promotion house.***

The existence of Export Promotion House belonging to VCU is necessary for non-state co-operatives and SMEs. However, in the process of constructing the Export Promotion House, the strategic steps are very important.

#### ***a/ Determination of steps for Export Promotion House***

- Complete the establishing organisation structure and skilled staff of Export Promotion House. The qualification of its staff will be the most decisive factor to determine the quality of services supplied by Export Promotion House as well as the competitiveness and existence of Export Promotion House in a market economy with fierce competition. This need

to be done right after the formulation of Export Promotion House and maintained in the development process based on certain criteria.

- Construct technical infrastructure of Export Promotion House, particularly offices and equipment, computer system, data bank. In the first year, it is required that the relationship between Export Promotion House and institutions supplying information, research institution must be established in order to have good information to serve customers.

- Enlarge relationship, co-operation with international organisations and utilise their support in all aspects (finance, experience...).

- Determine the enterprises who will receive Export Promotion House's assistance. At present, there are about 25,000 non-state enterprises and nearly 25,000 co-operatives being the members of VCU. It is necessary to classify these enterprises into different categories such as who has demand for export support, training need. Considering this classification, there will be different suitable program of training for different groups of enterprises.

- Search for and construct projects to develop sub-contracting activities for co-operatives and SMEs in the economy. Other countries' experience shows that co-operative and SMEs account for a very important place in the economy through their sub-contracting services, supplying parts and components for large producers. Export Promotion House, starting from its contact with large groups, will help SMEs to bring into full place its role in the economy.

*b/ Propoganding, advertising and seeking support from state responsible agencies.*

The "Export promotion house" can operate and fully utilise its capacity when it gets support from the state - agencies. Therefore, the "Export promotion house" should concentrate on propoganda of advertisement activities, so that different agencies and industries at different level recognise the necessity of the "Export promotion house"

## *2. Recommendation to VCU.*

VCU should consider this as an important task and provide material of human support to the "Export promotion house" by different forms such as: providing location (office) initial capital (loan), and provide human resources to the "Export promotion house".

### *3. For the state and local specialised organisation*

These organisations should pay attention to activities of the “Export promotion house” as its existence will benefit not only to enterprises but also to each industry and localities in their implementing common economic task.

For the state agency, there should be reasonable policies to promote establishment and development of the “Export promotion house”. There should be also policy on finance support to the “Export promotion house” in its early stage of establishment of development. It should be understood that the house will mainly providing support to SMEs. Therefore, there should be a priority in tax mechanism (or free of tax) for the “Export promotion house” so that it can work effectively and invest rightly to its size and activities and provide some sample services to SMEs on the free of charge basic.

### *4. For other ministries, agencies*

These agencies of ministries should have cooperation with the “Export promotion house” in order to strengthen export activity. Competition among them should be avoided. Other agencies having seminar function like “Export promotion house” should cooperate with each other in their operation so that they can reach common target of promoting import-export activities of Non - state SMEs.

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*Hoang Que Lan*

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# I/ BACK GROUND

## 1/ GENERAL VIEW OF VIETNAMESE FINE ART HANDICRAFTS.

It has been in people's mind for a long time that Vietnam is agricultural country characterized by Rice Civilization and Village culture or in another way, by Rural Civilization with thousands - years history traditional handicraft. Only in the Red river delta, there are approximately 200 villages, where agriculture exist together with famous traditional handicraft as:

- Silk weaving in Van phuc.
- Pear carving in La xuyen, Chuon...
- Polished lacquer in Ai thai - Ha tay...
- Silver and gold fine art in Dong san - Thai binh...
- Stone carving in Ninh binh, Da nang...
- Ceramic in Bat trang, Quang ninh.
- Brass ware in Ngu xa...
- Embroidery in Ha dong...

Practices of these villages exist in various forms as households, groups, cooperatives, corporations, companies which are suitable in each different period of Vietnam's economic development.

Developing together with the society's general trend each traditional handicraft has its Golden time and many of them became National heritage. However there were also some periods when the traditional handicraft had difficulties even some were forgotten. Wooden fine art is an example.

*Viet Nam is a country. Where 80% people are engaged in agricultural sector. That is way, handicraft is very important for the rural life and contributes handsome revenue in*

the National economy. There is big number of workers working in this bringing economic effective<sup>ness</sup> as well as cultural value and increasing farmers' income.

## 2/ VIETNAMESE GOVERNMENT'S POLICY TOWARDS THE TRADITIONAL HANDICRAFT'S DEVELOPMENT

Realizing the important role of traditional handicraft, since 1986 Vietnamese government paid more attention in recovering traditional handicraft and developing the new. The government launches policies to encourage domestic capital and foreign investment in traditional handicraft in general and in wooden fine art in particular based on conserving and succeeding the National traditional elite and heritage.

The Vietnamese government issued some favorable policies to facilitate and encourage import-export these products as:

- Export tax is totally exempted
- Capital is grated to manufacture with low rate.
- Suitable regulations *were* issued in favor of export.

According to 1995's statistic study release by Vietnam's Statistic Department there was :

- Total cooperatives : 20,250.
- Total farmer : 38,462,000 co-operators.
- In there : 14,762,000 co-operators ( 64% ) had handicrafts activities.

In its plan to develop the export of main items in the period from 1996 to 2010 Vietnamese government advocates to focus and stimulate investment in some manufacturing and processing sectors which operate as following:

- Attracting a large number of worker
- Small capital

- Taking advantage of the domestic available materials.

In this *field* handicraft in general and wooden fine art in particular have new trend of development in future. However, it needs to re-organise the manufacturing base on skillful works with moder technology and machine in order to increase the high quality as well as big quantity *to absorb it, in... the market.*

### 3/ CURRENT SITUATION OF WOODEN FINE ART

#### **A/ Conception:**

Wooden fine art is famous art product producing base on combination<sup>of</sup> the following traditional handicrafts:

- Furniture manufacturing
- Carving
- Pear inlaying
- Polish lacquer
- Knitting

Wooden fine art uses various kinds of materials such as stone, wood, bamboo, pear, snail shell, eggs cover...making together by skillful workers. Vietnamese wooden fine art really attract a lot of foreign customer<sub>s</sub> and many contracts have been signed with regular customer<sub>s</sub>

In the last 5 years, thanks the Vietnamese government's opening policies wooden fine art has found its place in the economy and increase both quality and quantity. The products are sold not only in the domestic market but also exported to the Asian market as Taiwan, Chine, Japan as well as European market as France, Italy...

**B/ Main export items :**

List of export products	unit	1991	1992	1993	1994	1995
I/Main products	1000 \$	1,2470	3,454	4,4	3,335	2,625
- Wooden fine art	-	0,3668	1,256	1,870	2,084	1,375
- Embroidering	-	0,489	0,3768	1,311	1,667	1,25
- Ceramic	-	0,3423	1,1932	1,779	1,251	1,00
- Others	-					
II/ Total :		2,445	6,280	9,361	8,337	6,250
III/Wooden ( ratio )		51	55	47	40	42

**C/Main foreign market importing wooden fine art products :**

List of countries importing	Unit	1993		1995	
		Sale 1000 \$	Share ( % )	Sale 1000 \$	Share ( % )
Singapore	1000 \$	0,484	11	0,210	8
Taiwan	-	1,320	30	0,972	37
France	-	0,352	8	0,131	5
German	-	0,220	5	0,079	3
Japan	-	0,528	12	0,473	18
Chine		0,836	19	0,656	25
Others countries ...		0,660	15	0,105	4
Total :		4,4		2,625	



Side by favorable politics and market the Vietnamese wooden fine art's manufacturing has new trials.

Because of the Wooden fine art 's peculiarity its products have been made by hand <sup>from</sup> thousands years. In the last few years in order to increase the art value the processing has been mechanized but only in some parts. In other hand due to small capital and low level of technical and technology the wooden products although are skillful and high quality can not exist in inclement weather of others countries.

These reasons make many difficulties to keep the regular parents and find the stabilize consumers' market. Its influence in the following items:

**- Kind of products:**

Although there are some different sorts and kinds of products but it's *design be* simple in order to go with hand-processing, so *to use* the abilities of skillful workers *will be a waste*.

**- Manufacturing organizing :**

Make by hand with simple machine can not *match* produce. Each product is complicated. It make more difficulties and *expensive* in transportation, special for export.

**- Productivity and quality :**

The products are made with different quality, low producing capacity can not respond the big order.

**- Delivery time:**

Making by hand can not respond the stick requests about the quality, quantity and delivery time.

**- Prices :**

Only small number of the hand products are high quality, so that its ' very

expensive can not support the large numbers of consumers in domestic and foreign market .

Base on *above*, it *transpire* that reorganizing produce handicraft in general and wooden fine art in particular is necessary with new technical and technology suitable <sup>to</sup> our condition together with keeping traditional work in order to build the small production enterprise *which* can increase capacity and quality of products. It can reduce the working time, the prices of products to respond the high requests of art, quality and quantity of domestic and foreign consumers , markets.

This is the model of new cooperative in order to *improve* both quality and quantity *by* processing,organizing, using the national skillful *workers in* traditional handicraft' villages:

WOODEN FINE ART MANUFACTURING COOPERATIVES	
ITEMS OF NEW INVESTMENT	ITEMS OF TRADITIONAL HANDICRAFT
<ul style="list-style-type: none"> <li>- Modern technology</li> <li>- Modern machines</li> <li>- High standard of quality and quantity</li> </ul>	<ul style="list-style-type: none"> <li>- Traditional handicraft</li> <li>- Using the skillful workers in different ages at village :                             <ul style="list-style-type: none"> <li>+ Work in cooperatives</li> </ul> </li> <li>+ <i>Processing</i> the <i>semi-</i> products at home</li> </ul>
- SPECIALY EDUCATED	
<ul style="list-style-type: none"> <li>- Management and marketing officers are educated.</li> <li>- Increasing skillful workers</li> <li>- Designers educated and making trials.</li> </ul>	

## II/ THE TARGET OF PROJECT

- Build one wooden fine art cooperative as an example in order to continue study the abilities to keep and develop traditional handicraft in Vietnam.
- Apply modern technology in manufacturing hand fine art combine with the skillful of workers, using local available material to make a good product with high quality to respond art requests and big quantity of domestic and foreign markets.
- Increase workers' income, guarantee their stabilize works, attract big work force.

Based on practical activities of this cooperative, we can use this experiment in building <sup>more</sup> cooperatives in different regions of country for different fields of traditional handicraft.

### 1/ MODEL OF COOPERATIVE

- Invest capital to build a small factory <sup>to</sup> manufacture wooden fine art using the modern technology combine with hand works.

### 2/ MANUFACTURING PLAN

This factory is invested to manufacture the following traditional products:

- Wooden carved and mother - of - pearl inlaid furniture.
- Wooden furniture with stone - carving .
- Lacquer wood: Polish lacquer, lacquer with golden carver...
- Wood combining with cane, bamboo...
- Bamboo products with cane.

### 3/ TECHNICAL STANDARDS

A- Planing productivity :

500 m<sup>3</sup> of finished products / year .

## **B - Estimated capital investment :**

- Machine : USD 200,000
- Main building: USD 60,000
- Production for experiment : USD 20,000 US
- Total : USD 280,000 US

**c- Estimated pay back period : 5 years**

## **4/ BASIC OF EXPENDITURES FOR PRODUCTION.**

### **A - Standardize normative of technical and raw materials, fuel:**

- Following the statistic of 14 years experience working in wooden fine art's production.
- Following the document of Vietnamese Academic Institute, Central committee of Vietnamese Cooperative Union and Agricultural ministry.

### **B - Price of raw material.**

Following the present price of raw material in domestic market and importing material with 15% increasing price per year.

### **C - Salary and management expenditure**

Following the Vietnamese government's policy.

### **D - Bank interest for capital investment.**

Estimated maximum 6.5% per year.

Period of repayment : 5 years

### **E - Bank interest for short term working capital :**

Following the regulation of Vietnamese National bank.

### **G - Selling price of product:**

Following the experience selling in International market for last 5 years of export product and product selling in domestic market.

## H - Tax :

Following the tax law of Vietnamese government.

## 5/ INVESTMENT FORM

Long term investment, applying new technology and machine in order to improve processing wooden fine art' production.

## 6/ ESTIMATED . . . SOURCES OF CAPITAL INVESTMENT.

- Estimated loan from abroad ( *Organization for* development support for medium and small cooperatives ) :

200,000 US\$ with loan interest 2,5% – 6.5% per year.

- Government ' s loan ( Vietnamese National bank ) :

30,000 US\$ with loan interest 6.5 – 8.5% per year.

- Share Capital from Cooperators : 40,000 US\$

## III/ MARKETING RESEARCH

### 1/ MARKET'S STRATEGY

- Domestic consumer : 30-40% productivity's.

- Export: 60-65%

In there: Asian market: 40%

European market: 20-25%

### 2/ COMPETITIVE ABILITIES IN MARKET

#### **A -Resent view of manufacturing and selling products :**

- Before 1995 the production of wooden fine art had been relative<sup>ly</sup> stabilize. But after 1995 the production and export has *come* down because of higher and higher request of quality and rational price. By the time Vietnamese products can not respond the order of customer about quality, quantity and

deliver time, so the prestige of Vietnamese products reduce in the market. In order to keep high quality, most of Vietnamese wooden fine art products export to Taiwan, China and Thailand to refine and polish the face of products and after that re-export to other market.

Many foreign customer want to import direct from Vietnam but complicated technology is still not high enough to support the request of customers

Now in Vietnam there are some joint enterprise furniture production of Taiwan, Japan has effective actions.

## B - Comparative abilities

Base on producing situation applying new machine and technology with increasing skill, the wooden fine art has a good market in 5 years. *The marketing analysis is based on the international markets survey made by the foreign Minister after continuous study.*

- The high quality wooden fine art product with rational price *and* *direct importing* from Vietnam, where has a rich local material and work force, <sup>will</sup> has competitive abilities in International market.

## 3/ DEVELOPING ABILITIES OF MODEL

Nowadays only in Red river delta there are approximately 200 *handcraft* *villages* that can use this model for production <sup>of</sup> different products. For wooden fine art in particular there are hundreds cooperatives because this model is suitable with practical condition in Vietnam now and in 10 years future.

## 4/ ESTIMATED SELLING PRICE:

- Wooden carving : 25,000,000.00 VND/ m<sup>3</sup> product
- Bamboo and cane product: <sup>12.5</sup> 9,000,000.00 VND/ m<sup>3</sup> product,

## IV/ TECHNICAL AND TECHNOLOGY

### 1 / PRODUCTION PLAN.

#### A - Building place :

- Production line of wooden fine art is placed in Giap bat town ( suburb of Hanoi 11 km from the city center. It is situated near some traditional handicraft villages as wooden carving, lacquer of red river delta in 50 km diameter ),
- Comfortable transportation both by road and by train.
- Water and communication system is available and respond the modern request of communication.
- Total land is : 10,000 m<sup>2</sup>

In there : work shop and store area is 9000 m<sup>2</sup>

#### B - Production program:

Base on material and work force abilities, consumers' market and management abilities and capital investment now cooperatives' productivity is 500 m<sup>3</sup> of finished products per year.

- The production lines are placed in 4 departments:

- + Wooden machine department
- + Bamboo and cane production department
- + Handicraft work shop: Carving, lacquer, stone...
- + Fitting and decorating, package department.

- Working regime : 2 shifts x 8 hours / day

260 working days per year

- Products' structure :

- + Wooden fine art : 60% output .
- + Bamboo and cane: 40% -

### C - Estimated production plan for first 5 years :( m<sup>3</sup> / year )

No	Production lines	First	Second	Third	Fourth	Fifth
1	Production line for wooden details	180	210	240	270	300
2	Production line for bamboo and cane details	120	140	160	180	200
3	Manual production line	300	350	400	450	500
4	Production line for assemblage , decorating and package	300	350	400	450	500
	Total	300 m <sup>3</sup>	350	400	450	500

### 2/ PRODUCTION SYSTEM AND TECHNOLOGY

a - sketch of production line ( Appendix 03 )

b - List of machine and price (Appendix 04 )

c - Implementation schedule of project (Appendix 05 )

### 3/ REQUIREMENT- MATERIAL - ENERGY - WATER - ELECTRICITY AND OTHER ENERGY.

#### A/ Material:

The main material for production line of wooden fine art includes :

- Wood <sup>of grade</sup> I,II,III,IV,V in Vietnam include forest and garden trees as .... Dalbergia , canary , Ironwood .....
- Bamboo, canes in different kind .



Although now Vietnamese government has closing forest policy and limited export<sup>of</sup> raw wood and wooden material, but for wooden fine art in particular the government still encourage production and export. Each year the government permits to *develop* and manufacture fix number of wood for each region.

The necessary wood quantity for one factory production wooden fine art is 1,000 m<sup>3</sup> of log per year is not big, so that supporting material for stabilize production is guaranteed. More-over, nowadays Vietnamese government has permission to import raw wood and material from Mianma and Laos in next 10 years for production and re-export<sup>of</sup> wooden products . . .

Even<sup>if</sup> this model<sup>is</sup> developed all<sup>over the</sup> country the material support is still guaranteed

- Bamboo and canes of different kind -

This is a big source and easier to reforest. *Development cycle* is 5 years maximum. Following the experience and document of Agricultural ministry now the capacity of bamboo is 5.5 billion trees, in there the forest bamboo approximately is 3.9 billion. Only in 150 km diameter around Hanoi now there is 120,000 ha with capacity nearly 1.8 billion trees can be used.

For the canes because during 20 years the exploitation had not been limited so that the capacity is not big. But this is only 10% of all material. Cane supporting is not difficult. In other hand canes can be imported from Laos with a big quantity.

- *The requirement of material for production:*

- Wood: 1,000 m<sup>3</sup> of log per year

- Bamboo : 300 tons per year ( approximately 25.000 trees )

- Canes : 20 tons per year
- + *Ratio of main materials' diminish :*
  - 2.0 m<sup>3</sup> material per 1m<sup>3</sup> product
  - 1.6 tons bamboo, cane per 1m<sup>3</sup> product
- + *Present price of material :*
  - Wood ( Average price ) : 7,500,000 VND/m<sup>3</sup>
  - Bamboo: 1,000,000 VND/ Ton
  - Cane: 1,500,000 VND/ Ton

### **B/Other accessories for production.**

Included the following :

#### + *Chemical:*

- Chemical liquid again<sup>st</sup>white ant and musty.
- Chemical to handle bamboo, canes material ( H<sub>2</sub>O<sub>2</sub>, Borax, S )

#### + *Other material for decorating :*

- Mother-of-pearl , stone , cover cloth, false leather cloth , Natural paint, chemical paint , Synthetic varnish , Shellac , Glue, ...

#### + *The accessories for fitting and package products:*

- Metal material : nail, hinge, lock, hand holder
- Cover, paper material again<sup>st</sup> hitting and moisture

#### + *The material for processing:*

- Emery paper for polishing
- Cutting tools
- Polished stone
- Oil for machines
- Replacing spares

All these material are supported by domestic market both quality and quantity, even by importing its.

Following <sup>the</sup> statistics and experience from 10 years practical production, other materials *take* only 2.5-3.0% <sup>of</sup> production *expenses*.

**C / Requirement of electricity and other energy supporting**

- Requirement of electricity : 150 kw
- Other energy : 40 tons of wooden coal per year.

**D / Requirement of water supporting :**

- Cleaning water for experiment : 100 l/day
- Living water:  $0.5\text{m}^3/\text{person} \times 50 \text{ person/day} = 25 \text{ m}^3/\text{day}$
- Water for production ( Handle material... )  $25\text{m}^3/\text{day}$
- Water against fire  $100 \text{ m}^3$

**4/ EXTEND BUILDING AND LIST OF PROJECTS**

**A/ Requirement of land :**

Using all area in Giap bat town is  $10,000 \text{ m}^2$

**B / Plan for processing department placed : ( Appendix 02 )**

**C / List of projects and contractors :**

Name of projects	Quantity	Price	Amount
- Work shop with $720 \text{ m}^2$	01	420.000.000,00	420.000.000,00
- Rebuilding store $240 \text{ m}^2$	01	60.000.000.00	60.000.000.00
- Repair the inside road	$1000 \text{ m}^2$	100.000,00	100.000.000,00
- Drying kiln	01	90.000.000,00	90.000.000,00
- Protection against fire		20.000.000,00	20.000.000,00
- Main building and other office's equipment .		60.000.000,00	60.000.000,00
Total			750.000.000,00

**D / Structure of project:**

The work shop and store are used metal frames, wall made by brick, roofing iron roof energy reflected with area 720 m2 and 240 m2 ( following Vietnamese standard )

**6/ ENVIRONMENT PROTECTION.**

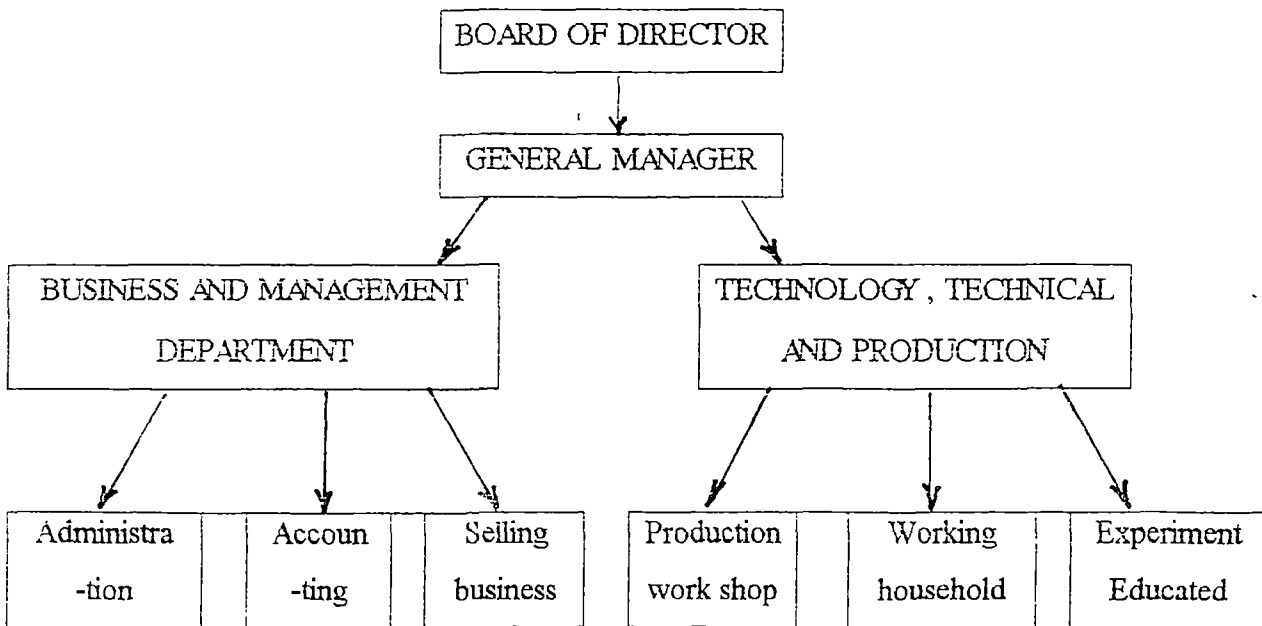
- The Environment protection method has been studied following the standard of Vietnamese Technology and Environment Ministry.
- Handle the waste gas
- Handle the waste water
- Protection against noise (*All expenditures included in the price of machine and transfer technology* )

**V/ ORGANIZE PRODUCTION MANAGEMENT.**

**1. ORGANIZATION STRUCTURE**

Name : **Wooden fine art production cooperative.**

*Organization model:*



*In there* : Work shop includes :

- Wooden production work shop
- Bamboo and cane production work shop
- Manual production work shop .
- Fitting, decorating and package work shop

## 2. ORGANIZED MANAGEMENT PRODUCTION SYSTEM

a. Management and operation: 09 persons

- *General manager* . 01 person

- *Chief manager*: 02 -

- *Manager of department* : 06 -

### B. Demand of work force:

Total of co-operators : 89 persons

*In there*:

- Indirect production works 17 person

- Direct production co-operators 72 -

- Estimated number of working household in home :  
70-100 families

## 3. WORKING REGIME

- 2 shifts/day and 8 hours /shift

- 260 working days / year

## 4. SALARY

Salary depend on number of products :2,500.000.VND/m<sup>3</sup> product

## VI/ FINANCIAL ANALYSIS :

### 1/ INVESTMENT CAPITAL OF THE PROJECT

- Production lines for wooden and bamboo, cane detail: 2,5 billion VND
- Main building : 0,75 billion VND
- Education and experiment for production: 0.125 billion VND
- Total: 3,375 billion VND

### 2/ ESTIMATED FINANCIAL RESOURCE :

- Loan from abroad : 200,000 US\$ = 2.5 billion VND ( 5 years )
- Government 's loan : 30,000 US\$ = 0.375 billion VND
- Share capital from farmer : 40,000 US\$ = 0.5 billion VND

SOURCES	AMOUNT (VND)	INTEREST RATE	REPAYMENT SCHEDULE
1-loan from abroad.	2.500 billion	6.5 %	Period of payment:5 years
2-Government's loan	0.375 billion	6.5 %	
3-Share capital	0.500 billion	0%	
Total :	3.375 billion VND		

*The weighted average cost of capital :*

$$\frac{2.5 \text{ billion}}{3.375 \text{ bill}} \times 6.5\% + \frac{0.375 \text{ billion}}{3.375 \text{ bill}} \times 6.5\% + \frac{0.5 \text{ billion}}{3.375 \text{ bill}} \times 0\% = 6.5\%$$

### 3. ESTIMATED ANNUAL EXPENSES .

#### A - Fixed cost .

Content	Unit	Quantity Volume	Price (1000 VND)	Amount (1000 VND)
1- Depreciation of work shop for 5 years period	VND -	20%	2.500.000	675.000
2- Long term loan interest	-	6.5%	2.875.000	186.875
3- Consumption expenses	-	12%		162,144.652
4 - Managerment expenses	.	3%		248,081.318
Total :	VND			1272,100,970

#### B - Variabe cost : (500 m<sup>3</sup> products per year)

Content	Unit	Quantity Volume	Price	Amount (1000 D)
1. Material				
- Wood	m <sup>3</sup>	600	7,500	4,500,000
- Bamboo	Ton	300	1,000	300,000
- Cane	-	20	1,500	30,000
2. Chemical				
- Glue UF	Ton	0.75	8,000	6,000
- Lecture ( P.E, P.U, P.V )	-	0.54	60,000	32,400
- Other chemical (H <sub>2</sub> O <sub>2</sub> , Borax,..)	-	2	5,750	11,500
3. Cutting tool, emery paper, polished stone	VND	500	90/m <sup>3</sup> Ph	45,000
4. Other accessories ( nail, hinge, hand holder...)	-	500	350/m <sup>3</sup> Ph	175,000

5. Electricity :				
- For mother-of-pearl inlaid wooden furniture (62kwh/m <sup>3</sup> product x 200 m <sup>3</sup> /year x 1000 VND/kwh )	Kwh/m <sup>3</sup>	18.600	1.00	18,600
-For Bamboo and cane products (42kwh/m <sup>3</sup> x 200m <sup>3</sup> /year )	-	8400	1.00	8,400
6. Water; ( 50 m <sup>3</sup> /day x 250 days/year )	M <sup>3</sup>	12.500	1.00	12,500
7. Firewood , coal	Ton	40	200	8,000
8. Salary		500	2,500	1,250,000
9. Interest on working capital	VND	12%		767,688
10. Expending for stop procession and wrong product	-	1%		80,269.630
11. Tax of total revenue ( For 40% product selling in domestic market )	-	6%	4000.000	240,000
Total				7485,357.63 VND/m <sup>3</sup>

**C. Total of Estimated annual expenses .**

Content	Amount ( VND )	Remarks
1- Fixed cost	1,272,100.97	
2 - Variabe cost	7,485,357.63	
Total	8,757,458.601 VND	



#### 4. ESTIMATED ANNUAL WORKING CAPITAL

Content	Unit	Quantity Volume	Price	Amount (1000 VND )
1. Material				
- Wood	m <sup>3</sup>	600	7,500	4,500,000
- Bamboo	Ton	300	1,000	300,000
- Cane	-	20	1,500	30,000
2. Chemical				
- Glue UF	Ton	0.75	8,000	6,000
- Lecture ( P.E, P.U, P.V )	-	0.54	60,000	32,400
- Other chemical (H <sub>2</sub> O <sub>2</sub> , Borax,..)	-	2	5,750	11,500
3. Cutting tool, emery paper, polished stone	VND	500	90	45,000
4. Other accessories ( nail, hinge, hand holder...)	-	500	350	175,000
5. Electricity :				
- For mother-of-pearl inlaid wooden furniture (62kwh/m <sup>3</sup> product x 200 m <sup>3</sup> /year x 1000 VND/kwh )	Kwh/m <sup>3</sup>	18.600	1.00	18,600
- For Bamboo and cane products (42kwh/m <sup>3</sup> x 200m <sup>3</sup> /year )	-	8400	1.00	8,400
6. Water;	M <sup>3</sup>	12.500	1.00	12,500
( 50 m <sup>3</sup> /day x 250 days/year )				
7. Firewood , coal	Ton	40	200	8,000
8. Salary	VND	500	2,500	1,250,000
Total				7485,357.63 VND

5 / ESTIMATED COST PRICE AND SELLING PRICE OF PRODUCT:

A - Cost price of wood product :

N.	Content	Amount (VND/m <sup>3</sup> )
1	Main material : ( Price increasing ratio 15% ) = 2.00m <sup>3</sup> wood /m <sup>3</sup> SP x 6,500.000 D/m <sup>3</sup>	15,000,000.00
2	Chemical : - Glue U F : 1.5 kg /m <sup>3</sup> x 8.000 D/kg - Synthetic varnish ( PE. Pu ..) 1.08 kg/m <sup>3</sup> SP x 60.000 D/kg	12,000.00 68,400.00
3	Cutting tool	90,000.00
4	Other accessories	350,000.00
5	Electricity : 62 kwh/m <sup>3</sup> SP x 1000 D/kwh	62,000.00
6	Water:( distributed for wood product 60%)	25,000.00
7	fuel :	16,000.00
8	Salary - Insurance	2,500,000.00
	Total : $\sum 1 \div 8$	18,123,400.00
9	Depreciation of work shop : ( distributed for wood product 60%)	1,350,000.00
10	Long term loan interest: distributed for wood product 60%)	373,750.00
11	Interest on working capital 12%/ year x $\sum 1 \div 8 = 18.123.400$ VND	2,174,808.00
12	Expenses for stop procession and wrong product 1%	220,217.00
13	Consumption expenses ( 2% )	444,838.50
14	Managemernt expenses ( 3%)	680,602.90
	Total : $\sum 1 \div 14$	23,367,366.00
15	Tax of total revenue : 25.000.000 VND/m <sup>3</sup> x 6% x 100m <sup>3</sup> /300m <sup>3</sup> Pr	400,000.00
	Total cost :	23,767,366.00 VND/m <sup>3</sup>

Estimated selling price : 25,000,000.00 VND / m<sup>3</sup> production.

Estimated profit before tax : 1,132,633.00 VND / m<sup>3</sup> product

Estimated annual profit before tax : : 339,790.053.00 VND /year

### B. Estimated price of bamboo and cane product:

N.	Content	Amount (VND/m <sup>3</sup> )
1	Main material : - Cane : 6.6% x 1.6 ton/m <sup>3</sup> x 1,500,000.0 DVN - Bamboo: 93.4% x 1.6 ton/m <sup>3</sup> x 1,000,000	160,000.00 1,494,400.00
2	Chemical: - Glue U.F: 1.5 kg/m <sup>3</sup> pr. x 8,000 .00 VND - Synthetic varnish ( P.E, P.U...) 1.08 kg/m <sup>3</sup> x 60,000 VND / kg - Other chemical ( H <sub>2</sub> O <sub>2</sub> , Borx...) 10kg/ m <sup>3</sup> x 5.750 DVN	12,000.00 64,800.00 57,750.00
3	Cutting tools, emery paper	90,000.00
4	Other accessories	150,000.00
5	Electricity: 42kwh/m <sup>3</sup> x 1,000 DVN /kwh	42,000.00
6	Water	25,000.00
7	Energy ,Fuel	16,000.00
8	Salary - Insurance	2,500,000.00
	Total : $\sum 1 \div 8$	4,611,200.00
9	Depreciation of work shop: (distributed 40% for bamboo and cane product )	1,350,000.00
10	Interest on working capital 12% per year	553,344.00
11	Long term loan interest (distributed 40% for	373,750.00

	200 m <sup>3</sup> / year of bamboo and cane product )	
12	Expend for wrong product and stop work : 1%	68,882.90
13	Expend for marketing 2%	139,143.54
14	Management expend 3%	212,889.61
15	Tax revenue ( 6% x 20% revenue selling in domestic market )	300,000.00
	Total cost :	7,609,210.00 VND / m <sup>3</sup> Pr

Estimated selling price: 1000 USD/m<sup>3</sup> product = 12.500VND/m<sup>3</sup>.

Estimated profit before tax ( 1m<sup>3</sup> product) : 4,890,789 VND/m<sup>3</sup>

Estimated annual profit before tax : 978,157,981 VND/year

#### 6. ESTIMATED REQUIREMENT OF ANNUAL WORKING CAPITAL

Year of project	Estimated productivity	Quantity m <sup>3</sup> /year	working capital ( 1000 VND)
Year I	60%		
- Wooden product		180	
- bamboo and cane product		<u>120</u>	
Total :		300	3.838.440,00
Year II	70%		
- Wooden product		210	
- bamboo and cane product		<u>140</u>	
Total :		350	4.478.180,00
Year III	80%		
- Wooden product		240	
- bamboo and cane product		<u>160</u>	
Total :		400	5.117.920,00
Year IV	90%		
- Wooden product		270	
- bamboo and cane product		<u>180</u>	
Total :		450	5.757.660,00
Year V	100%		
- Wooden product		300	
- bamboo and cane product		<u>200</u>	
Total :		500	6.397.400,00

## 6 - ESTIMATED ECONOMIC EFFECTS:

### **A - Estimated annual revenue - profit :**

Year →	I	II	III	IV	V	Total
Total revenue m <sup>3</sup> / year	300	350	400	450	500	
Working capital	3.838.440	4.478.180	5.117.920	5.757.660	6.397 400	
Interest on working capital	460.612,8	537.382,32	614.150,4	690.919,2	767.688,0	3.070.752,7
Depreciation	405.000	472.500,00	540.000,0	607.500,0	675.000,0	2.700.000,0
Expenses	5.254.475,16	6.130.221,02	7.005.966,88	7.881.712,74	8.757.458,6	-
Revenue	6.000.000	7.000.000	8.000.000	9.000.000	10.000.000	-
Profit before tax	745.524.84	869.778.98	994.033,12	1.118.287,26	1.242.541,4	4.970.175,6
Income tax 30%	223.657,45	260.933,69	298.209,94	335.486,17	372.762,42	1491.049.67

**B - Estimated repayment plan :****REPAYMENT PLAN FOR LONG TERM LOAN CAPITAL**

( in : 1000 VN D )

Year →	year I	Year II	Year III	Year IV	Year V	Total
Loan capital / year	3375.000	3000.000	2500.000	1900.000	1000.000	
1-Annual payback for loan capital						
- Total loan capital	375.000	500,000	600,000	900,000	1000,000	3.375,000
- Long term loan interest (6.5% )	219,375	195.000	162.500	123.500	65,000	765,375
Total I :	594,375	695,000	762.500	1023,500	1065,000	4140,375
2- Annual Repayment sources						
- From depreciation	405,000.00	472,500.00	540,000.00	607,500.00	675,000.00	
- From income 50%	372,672.42	434,889.49	479,016.56	559,143.63	612,270.73	
Total II:	777,672.42	907,389.49	1037,016.56	1166,643.63	1287,270.73	5175.992,83

Note : Distributing the profit as follow :

- Income tax : 30%
- Loan capital repayment : 50%
- Reproduction and allocated profit for farmers : 20%

As above mentioned , annual repayment sources for loan ( 6.5 % interest ) including :

+ from annual depreciation value of workshop in the production cost

+ From 50% annual profit .

- Total long term loan capital and interest for repayment in 5 years :

$$4,140,375.000.00 \text{ VND} = N_{vno}$$

- Total repayment sources in 5 years : 5,176,082,830.00 VND = T<sub>no</sub>

$$T_{no} = 1.25 \times N_{vno}$$

**Conclusion :**

Repayment abilities is viable .

### C - Break - even point analysis :

- P : Profit
- S : Revenue
- FC : Fixed cost
- VC : variable cost
- p : ratio of variable cost and selling revenue (  $p = VC/S$  )

From the data of total annual expenses for both kind product :

- Revenue of wooden product :  $300 \text{ m}^3 / \text{year}$
- Revenue of bamboo and cane product :  $200 \text{ m}^3 / \text{year}$

The break - even point as follow :

$$FC = 1.272.100.970 \text{ VND}$$

$$VC = 7.485.357.631 \text{ VND}$$

$$S = 10.000.000.000 \text{ VND}$$

$$p = 7.485.357.631 \text{ VND} / 10.000.000.000 \text{ VND} = 0.7485$$

#### a - Breaken - even revenue :

$$P = S - ( FC + p.S )$$

( Profit at the breaken-even point = 0 ) Therefore ,

$$P = S - ( FC + 0.7485 \times S ) = 0$$

$$0 = S - ( 1.272.100.970 \text{ VND} + 0.7485 \times S )$$

$$S = 5.058.055.546 \text{ VND.}$$

Revenue at the breaken - even point =  $5.058.055.546 \text{ VND.}$

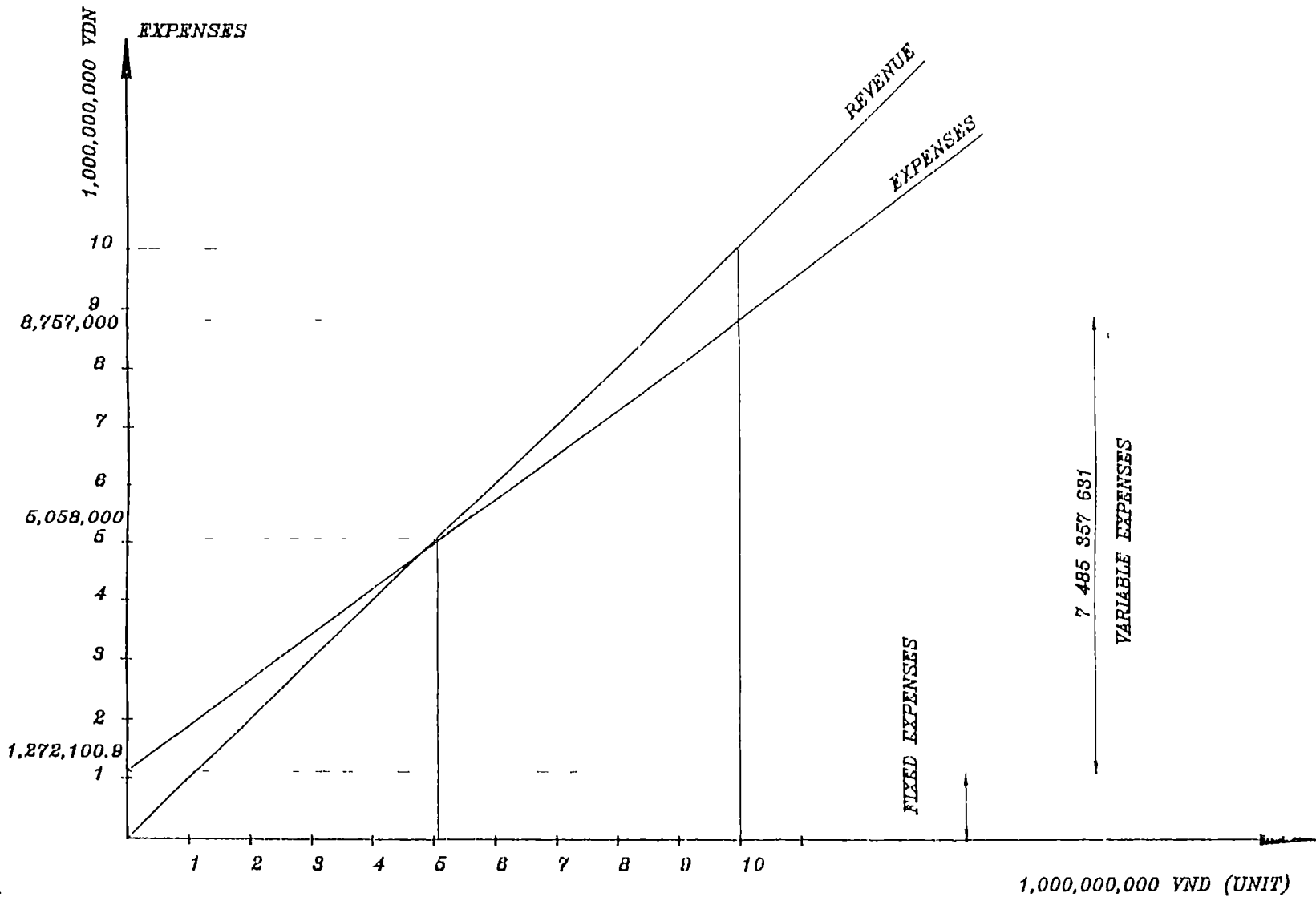
#### B - Output :

The output at the breaken-even point =  $50.58\% = 252.9 \text{ m}^3 \text{ Pr} / \text{year}$

In there at the breaken - even point :

- Output of the wooden product :  $151.74 \text{ m}^3 \text{ Pr} / \text{year} .$
- Output of the bamboo and cane product :  $101.16 \text{ m}^3 \text{ Pr} / \text{year} .$

- Graphically break - even point :





## VII/ SOCIETY ADVANTAGE :

The traditional handicraft cooperatives in general and wooden fine art cooperative in particular have an active role in economy development and increasing cultural life of Vietnamese country. It help to improve the living standard, winding local business and establish cultural handicraft region with special attraction for economy and tourist development.

In present time the Vietnamese government has policy to keep and develop the traditional handicraft base on studying and experience in practice of long time working, finding the best creation and skillful work encourage to build the new region of handicraft production in all country.

More over this model expect to build one cooperative of wooden fine art production using the high technical and technology together with keeping the skillful of hand making in order to have the high quality product can respond the request of foreign consumers in international market. From this we can develop more cooperatives in different traditional handicraft production.

Beside this arm the production model attract approximately 100 workers working direct in production line and hundreds families can have work at their home making the products' details.

Nowadays the Vietnamese natural resources has been down. Using these resources to make the high quality and cultural value is necessary and urgent. On the other hand we should change from using the precious material to using the material with a big capacity and easy to restore as bamboo, cane, stone... in order to develop country and environment protect. This is the urgent and important problem not only in Vietnam but also in all the world.

MAP OF THE PROJECT AREA

SOU IN DUSTRY ZONE OF HANOI

LIVING QUARTER

BUS STATION

ROAD TO HABAC PROVINCE

ROAD TO SHIDONG INDUSTRY

HIGHWAY TO HANOI 10 KM

HIGHWAY TO HANOI-HOCHIMINH CITY

RAILWAY HANOI TO HOCHIMINH CITY

RAILWAY STATION

LAKE

LIVING QUARTER

WORKSHOP KIMA

TOURISM ZONE

LIVING QUARTER

ROAD TO HATAY PROVINCE

ROAD TO HAIPHONG PORT 105 KM

PLAN FOR PROCESSING DEPARTMENT PLACED

B: security Dep

1: Technology Dep

D: management Dep.

1: Material storage

2: Drying kiln

3A: Raw material cutting

3B: Raw processing

3C: Producing secondary  
from the rest of material

4: Assemble and  
completed product

5: Polish Product

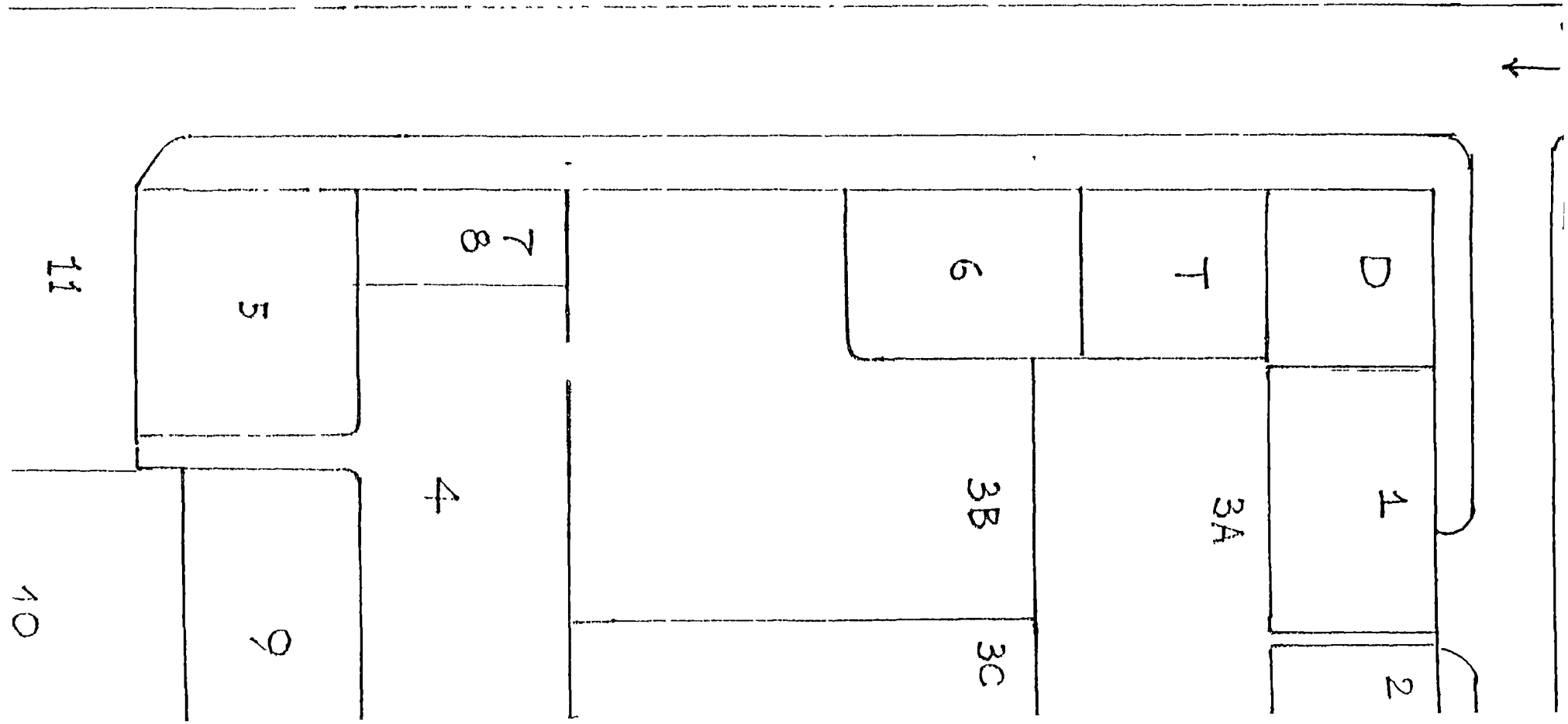
6: Carving and  
wickerwork

7 B: Control quality

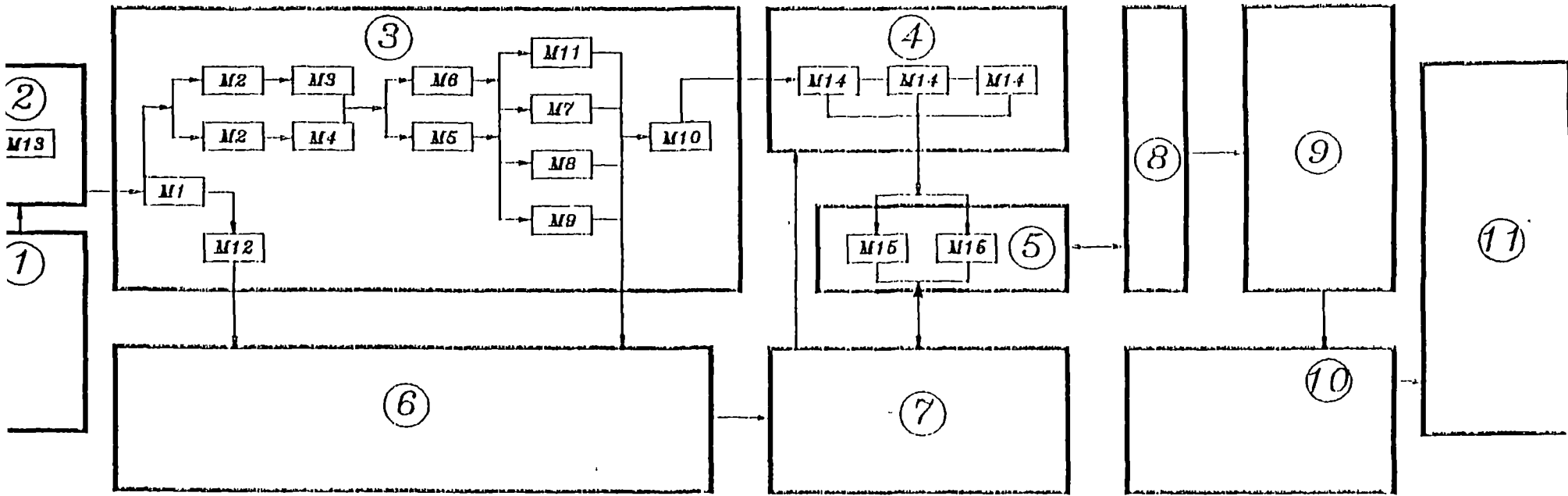
9: Product storage

10: Package -  
consumption

11: Parking for  
transportation



# SKETCH OF PRODUCTION LINE



## \* NOTE

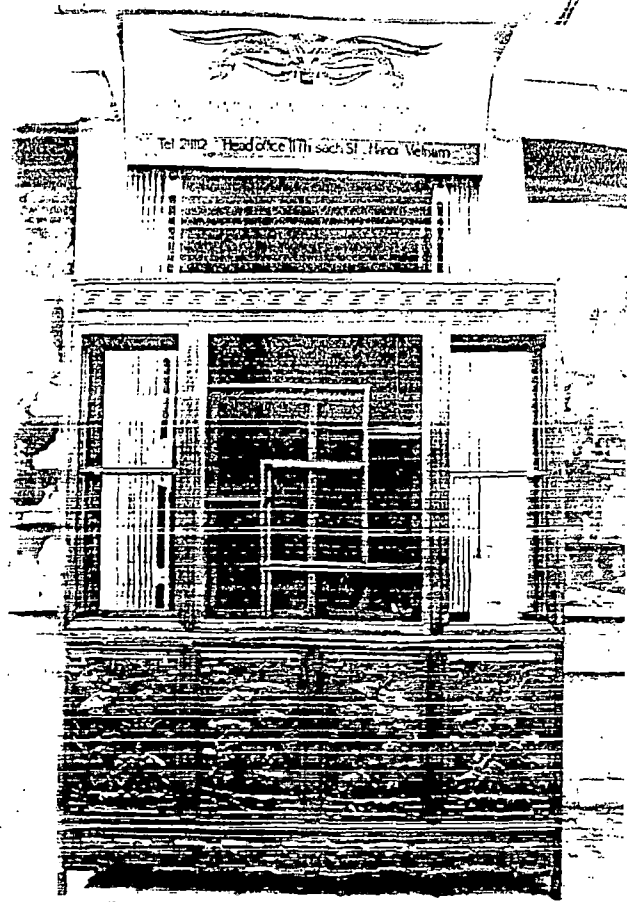
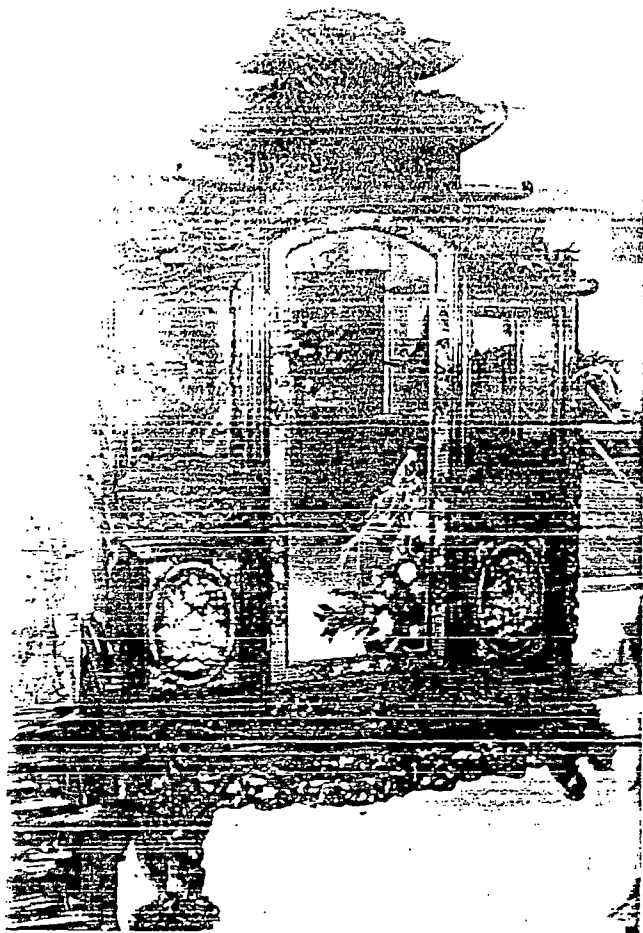
- 1 MATERIAL AND ACCESSORIES
- 2 DRYING KILN M13
- 3 PROCESS RAN PRODUCT  
M1, M2, M3, M4, M5, M6, M7, M8, M9, M10, M11, M12
- 4 ASSEMBLE AND COMPLEEATE PRODUCT M14
- 5 POLISH PRODUCT M15, M16
- 6 MANUAL PROCESING : CARVING, WICKERWORK, LACQUER....
- 7-8 QUANLITY CONTROL
- 9 PACKAGING
- 10 STORAGE
- 11 CONSUMPTION

## LIST OF THE MACHINES AND EQUIPMENTS

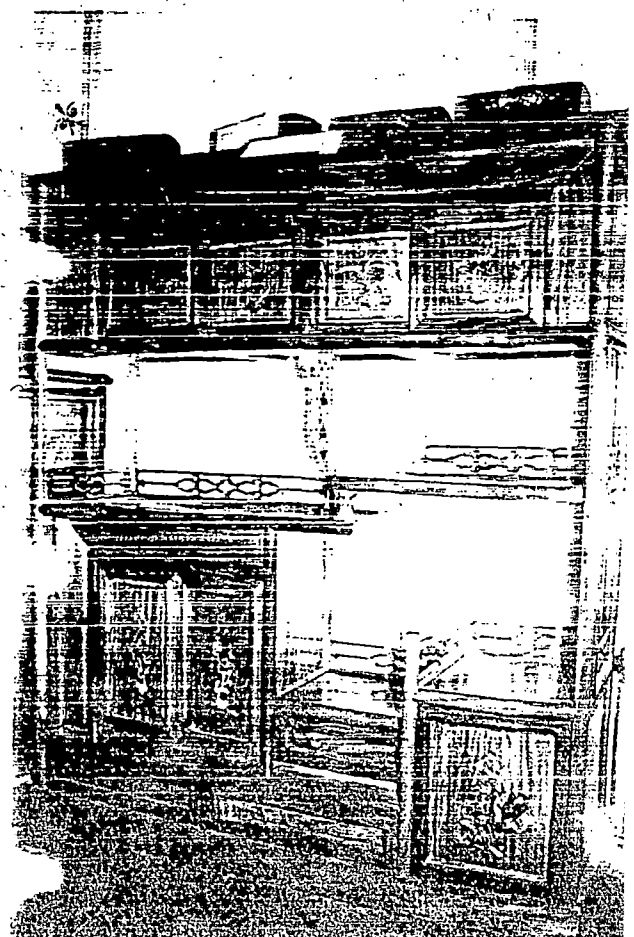
No	Marks	Machines and equipments	Quantity	Unit price (USD)	Amount (USD)
1	M1	Groos cutting sircular Saw ( Tip.OMGA - 350 )	01	2,960.00	2,960.00
2	M2	Sircular Saw ( Tip. PAOLONI - 1300 )	02	8,400.00	16,800.00
3	M3	Band fret - Saw ( Tip. PAOLONI )	01	9,600.00	9,600.00
4	M4	Planing machine ( EL Pip .PAOLONI )	01	13,200.00	13,200.00
5	M5	Thickness planing machine ( Tip.PAOLONI )	01	7,400.00	7,400.00
6	M6	4 - Sides planing machine ( Tip.SMC . 005 )	01	20,140.00	20,140.00
7	M7	Universal processing machine (Tip. SCM mod. BASIC .2.)	01	31,200.00	31,200.00
8	M8	29 head drill machine (Tip. MASTERWOOD - Mod.B29 )	01	11,200.00	11,200.00
9	M9	Fraise machine ( Mod. 1140 Tip. PAOLONI )	01	6,640.00	6,640.00
10	M10	Machine ( Tip. MEMBER - 3000 )	01	4,720.00	4,720.00
11	M11	Copy lathe machine ( Tip. Brusa )	01	18,600.00	18,600.00
12	M12	Polishing machine (Tip. Brusa)	01	6,800.00	6,800.00
13	M13	Drying kiln	01	10,000.00	10,000.00
14	M14	Compressor	03	2,500.00	7,500.00
15	M15	Surface kandlering and lacquerring equipment	01	9,800.00	19,600.00
16	M16	Stick polishing machine ( Tip. Brusa )-	01	6,800.00	6,800.00
17		Hand machines and hand cutting tools	20 sets	582.00	11,640.00
18		Sfare farts		5,000.00	5,000.00
		Total :			200,000.00 USD

200,000.00 USD = 2,500,000,000.00 VND

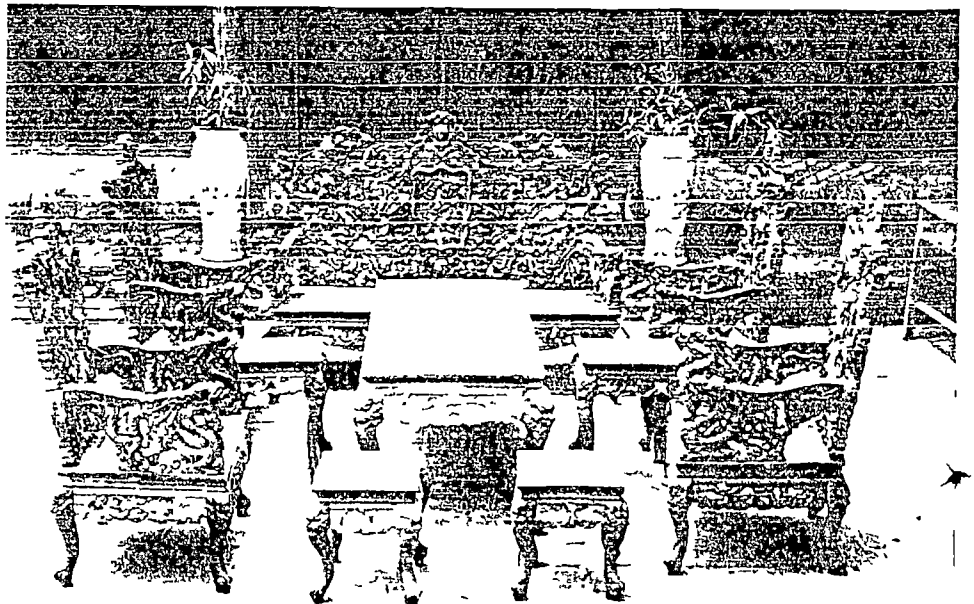
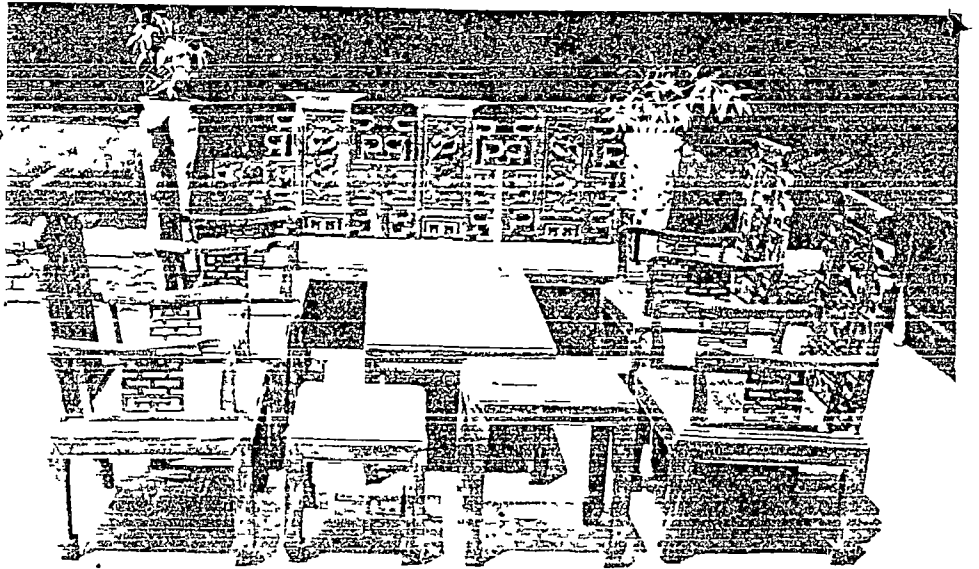
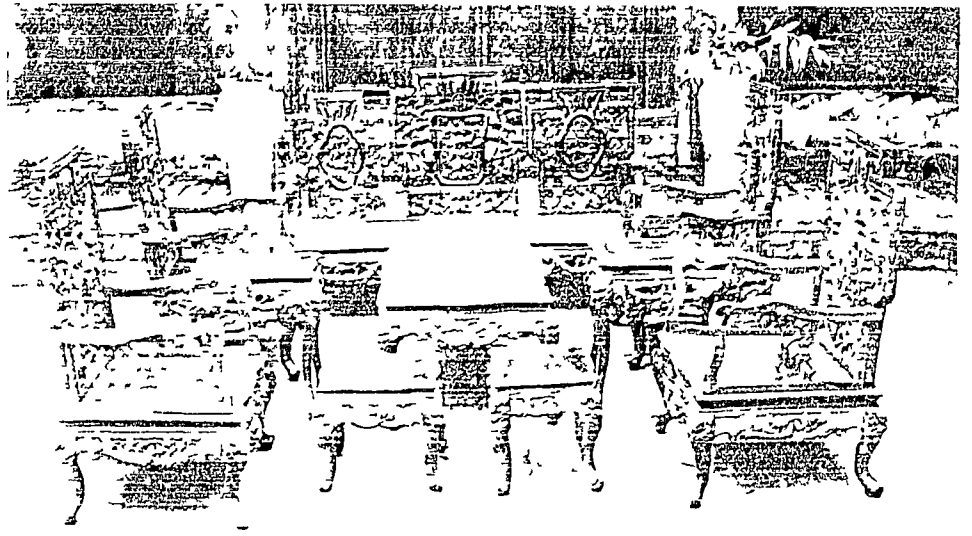




*Wooden fine art*

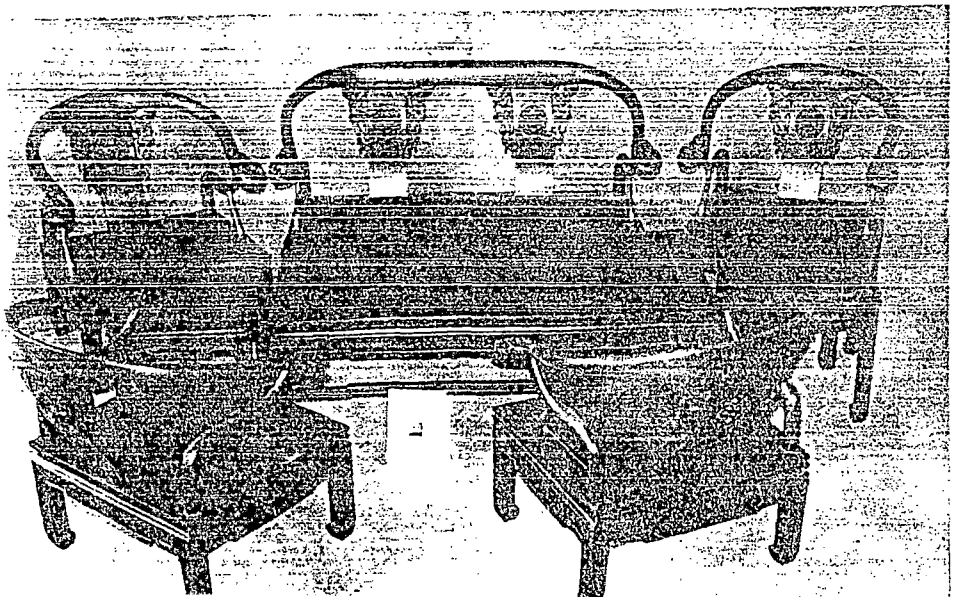
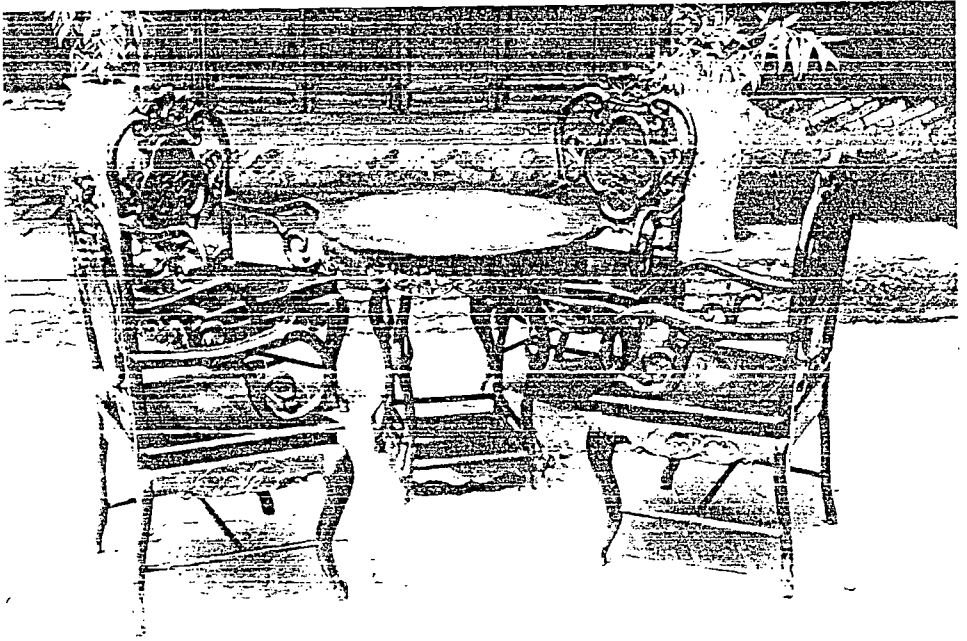
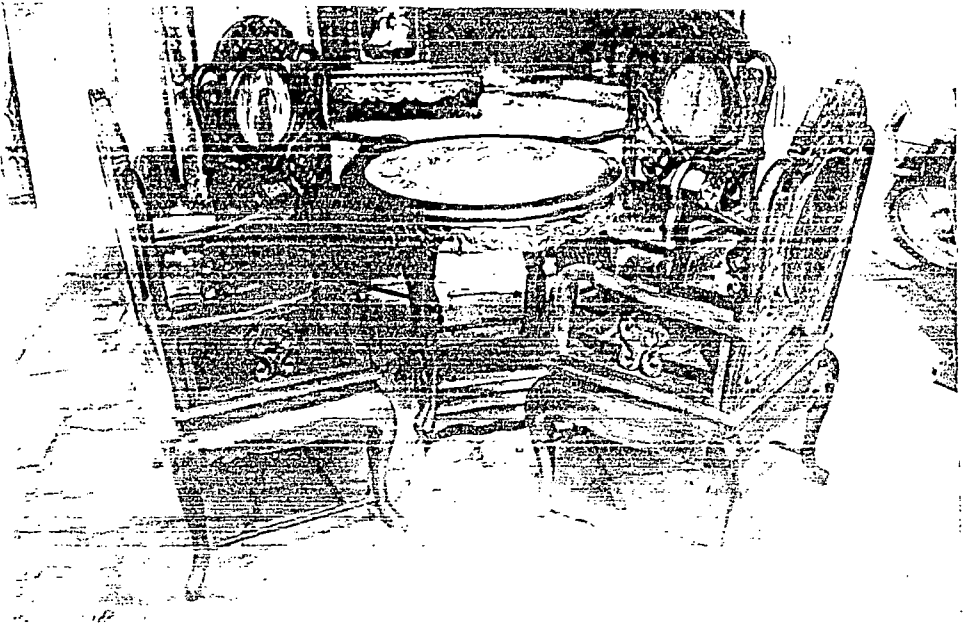


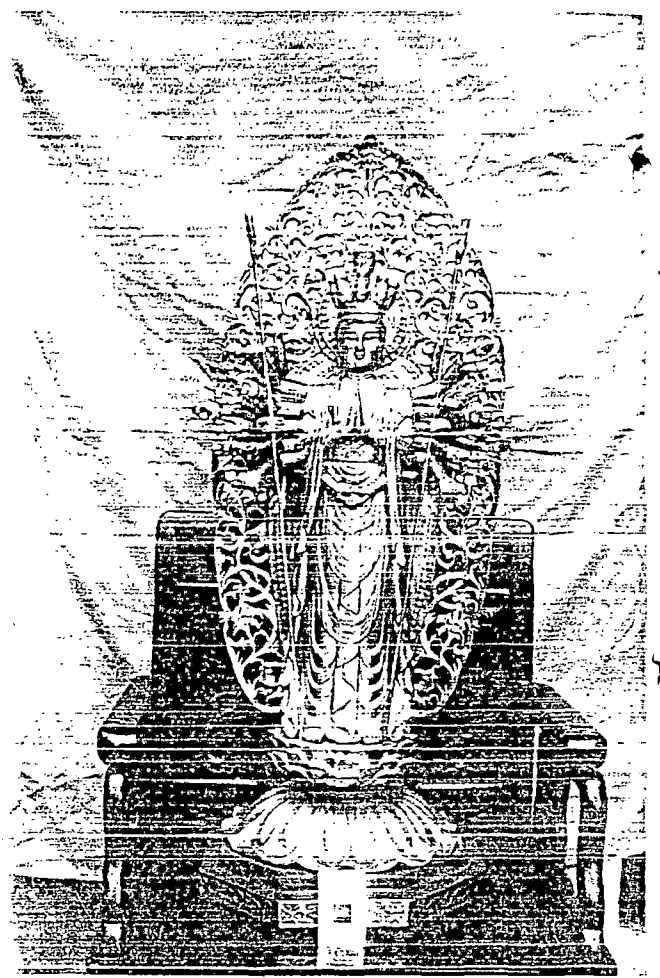
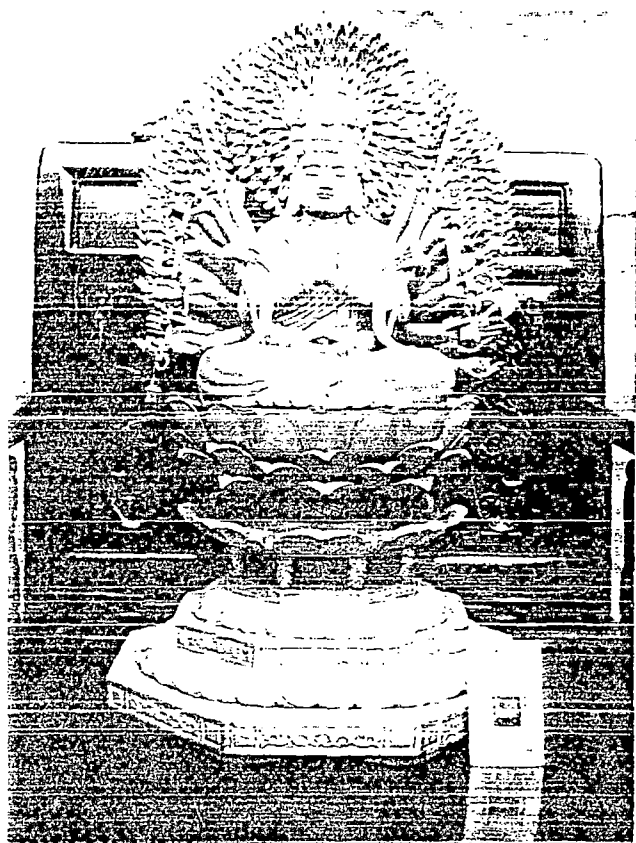
Wooden Fine Art





*Wooden Fine art*

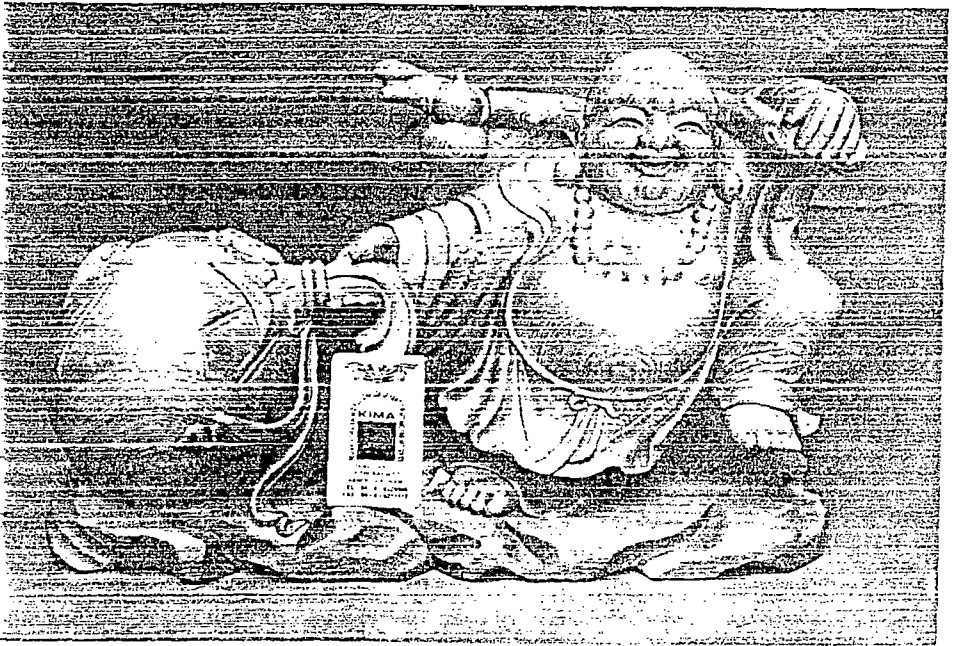
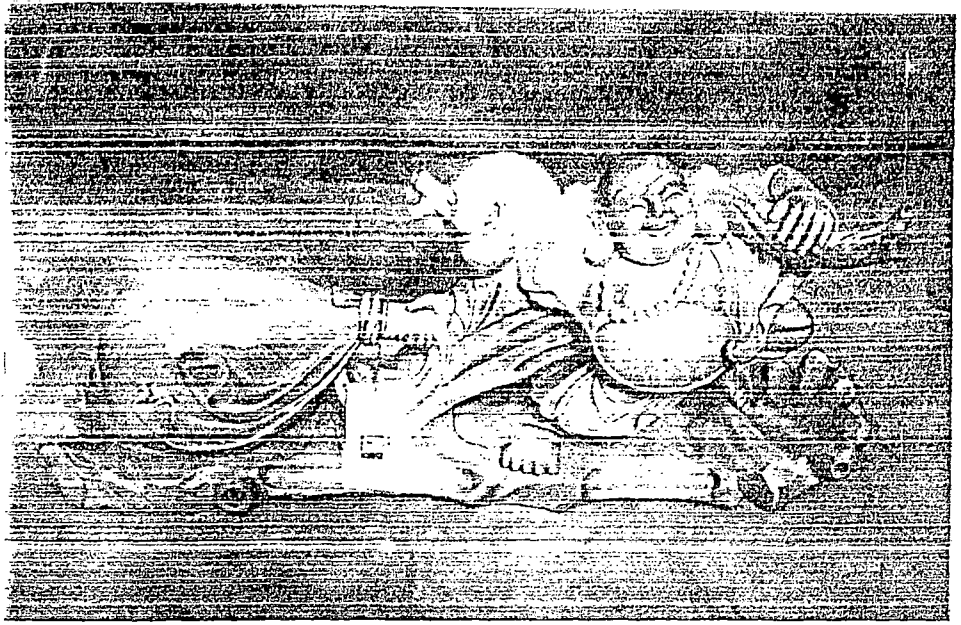




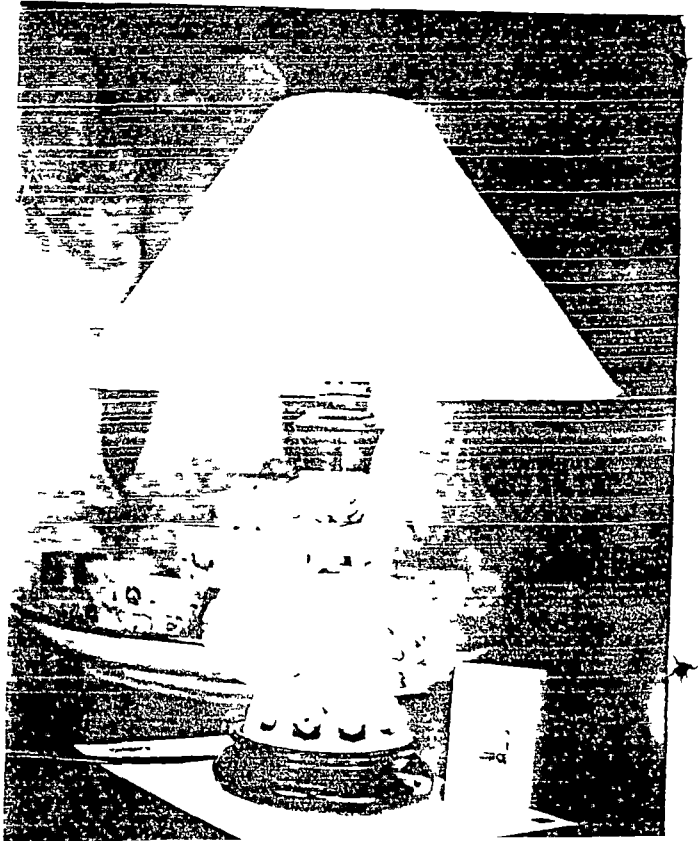
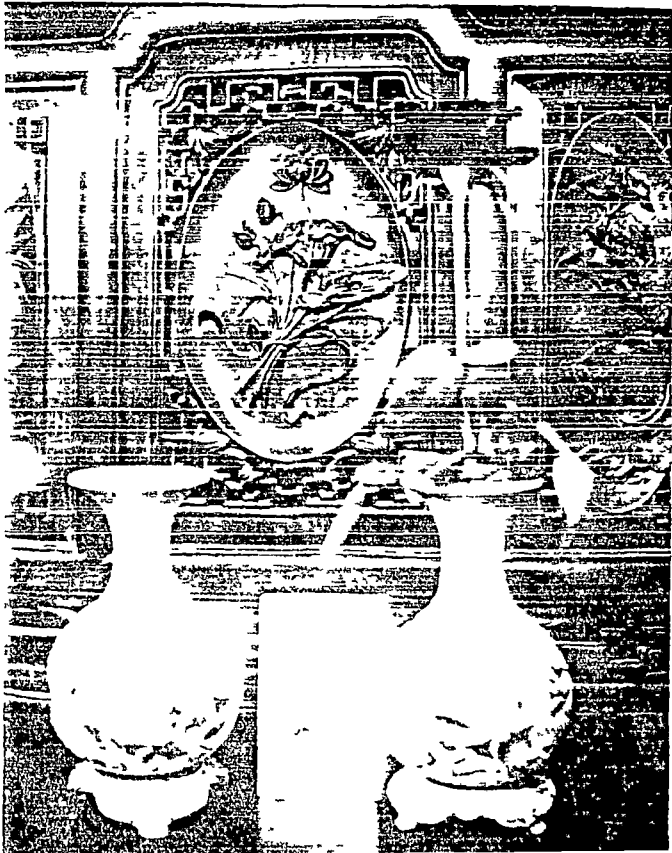
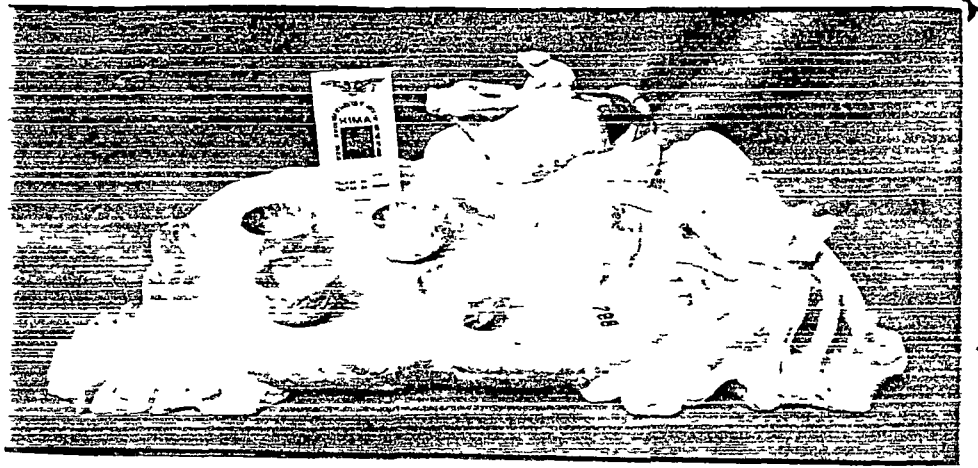
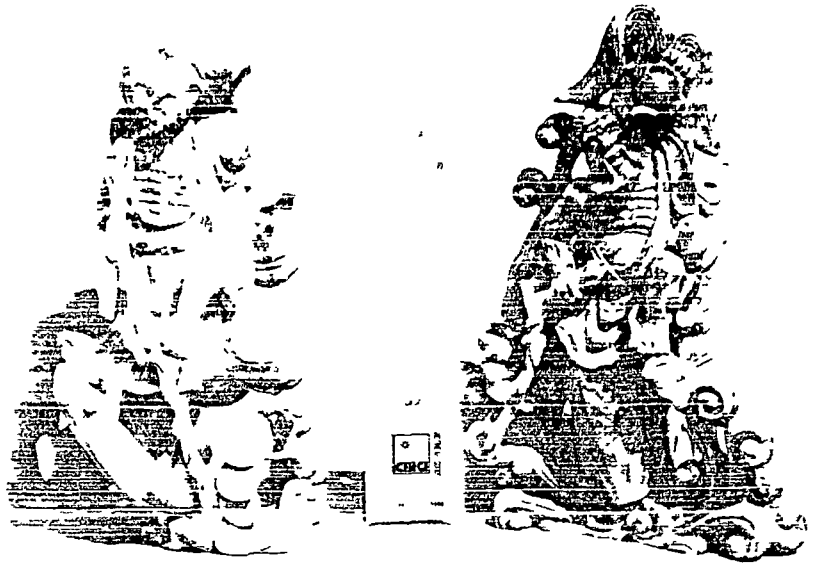
*Wooden fine art*

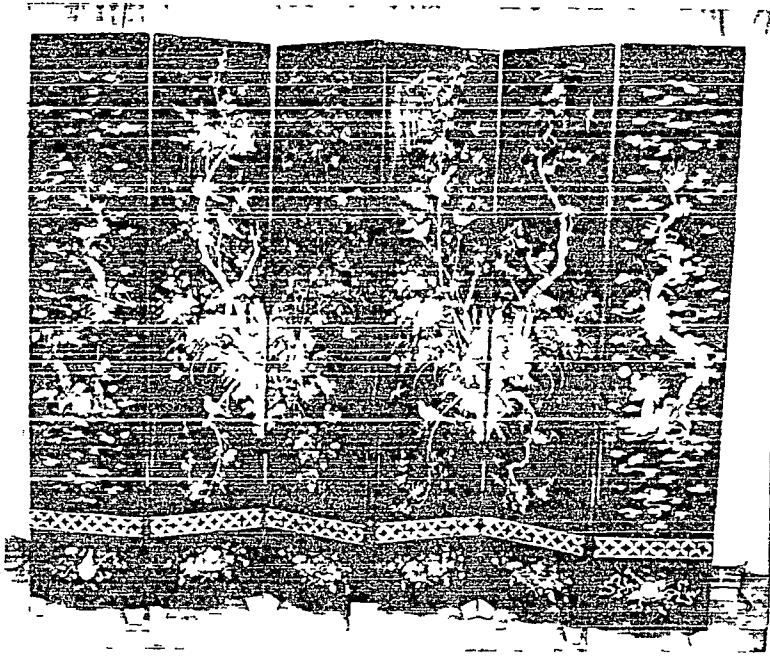
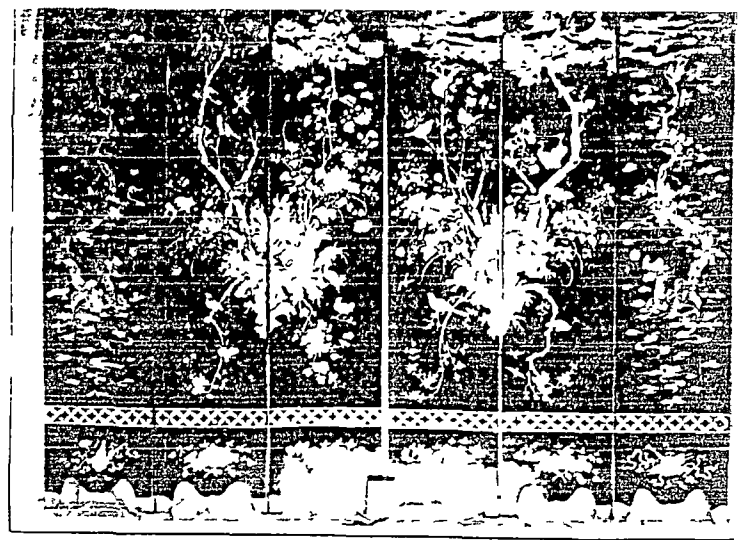
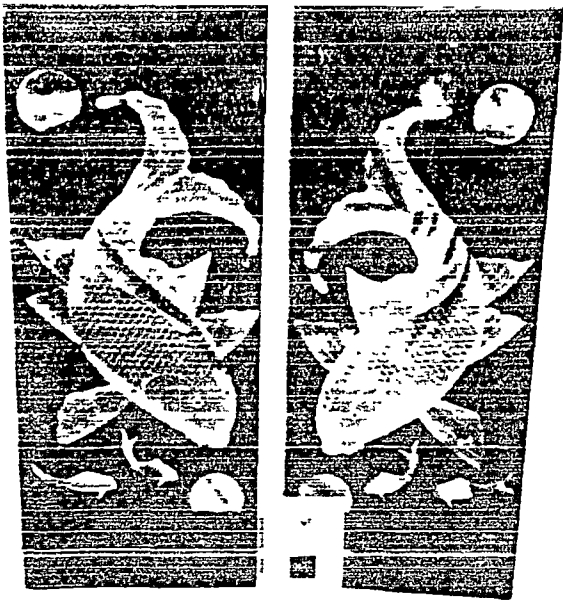


*Wooden fine art*

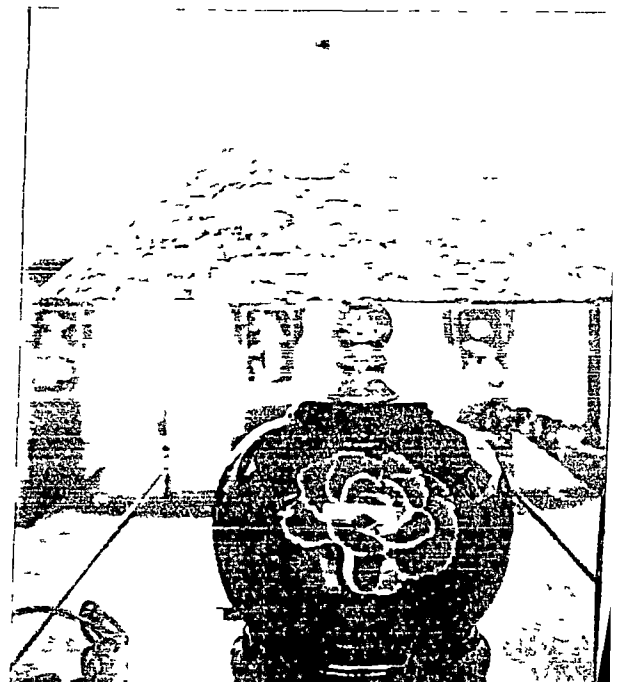


Stone of Mount

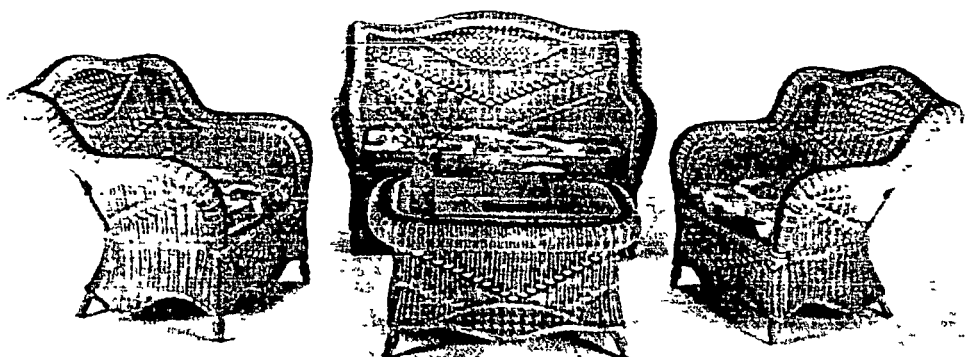
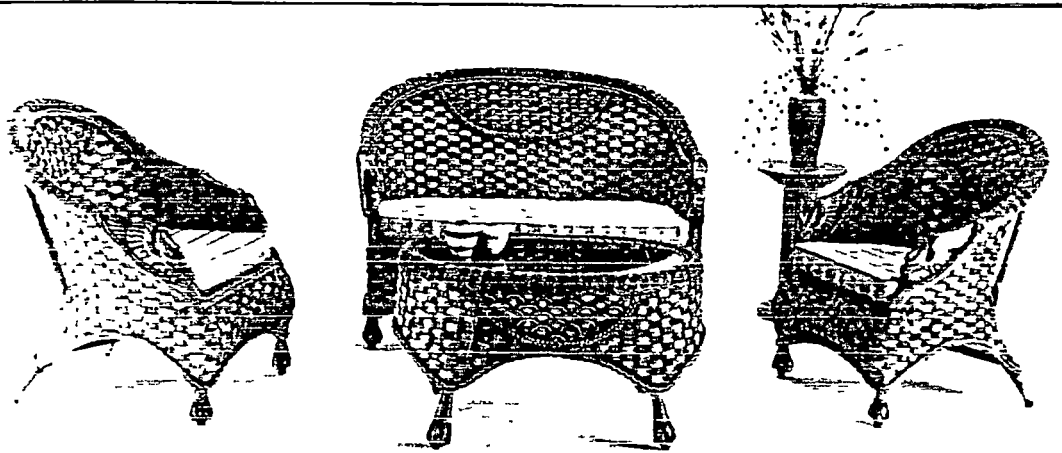
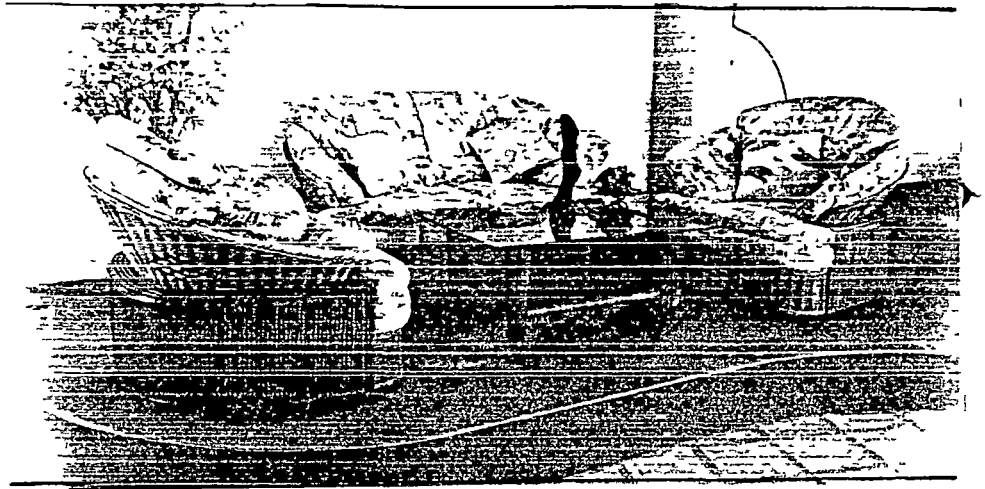
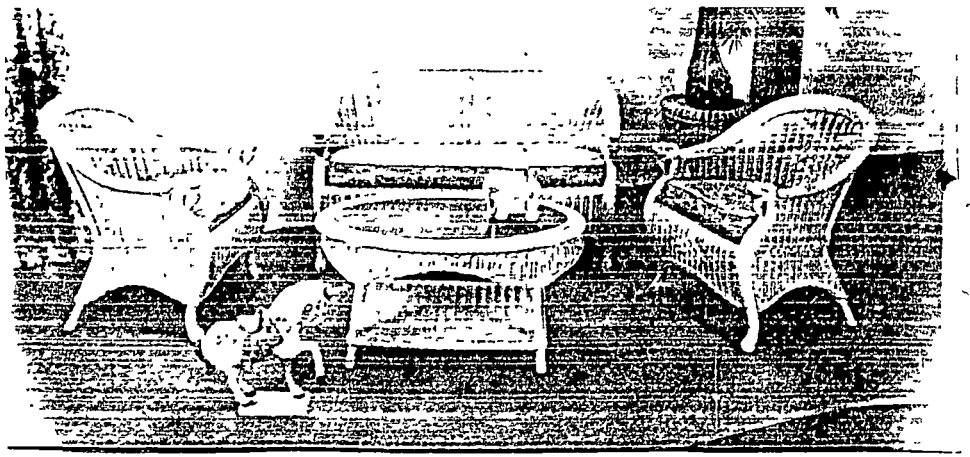




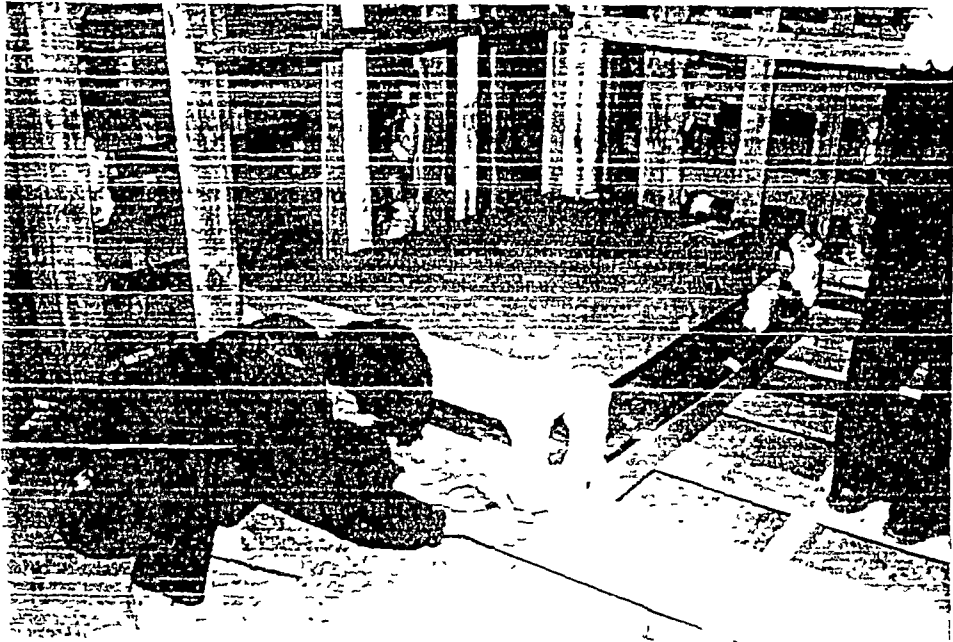
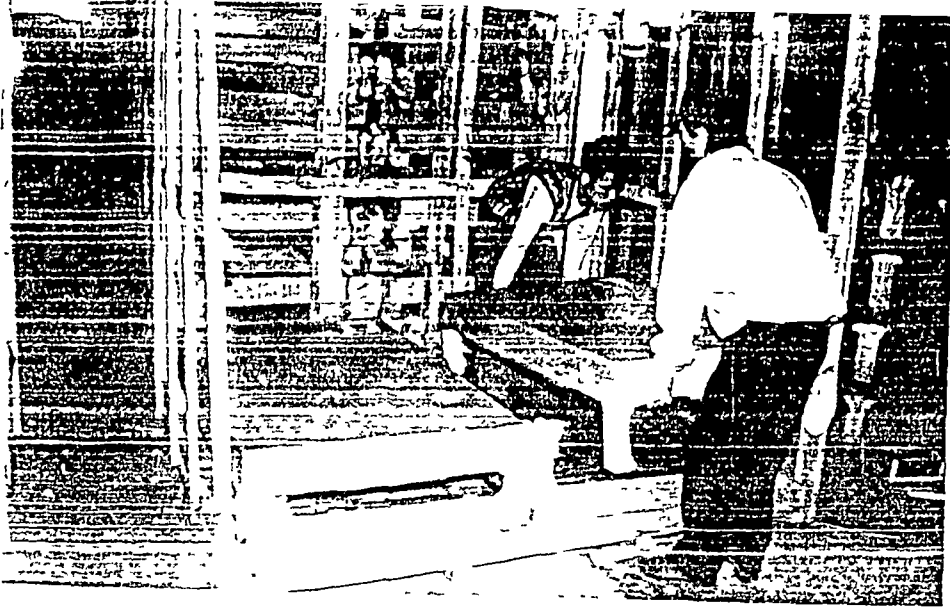
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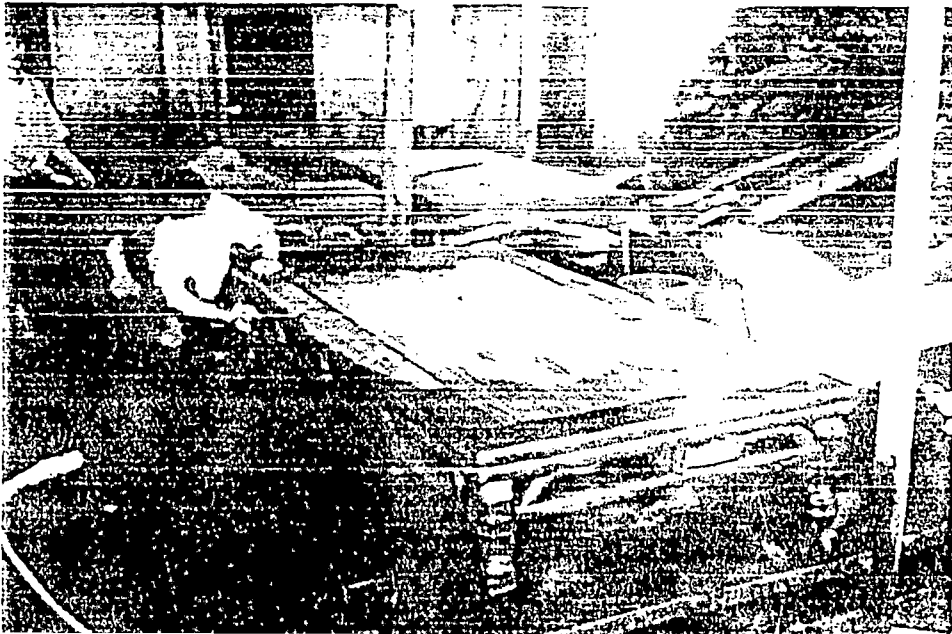
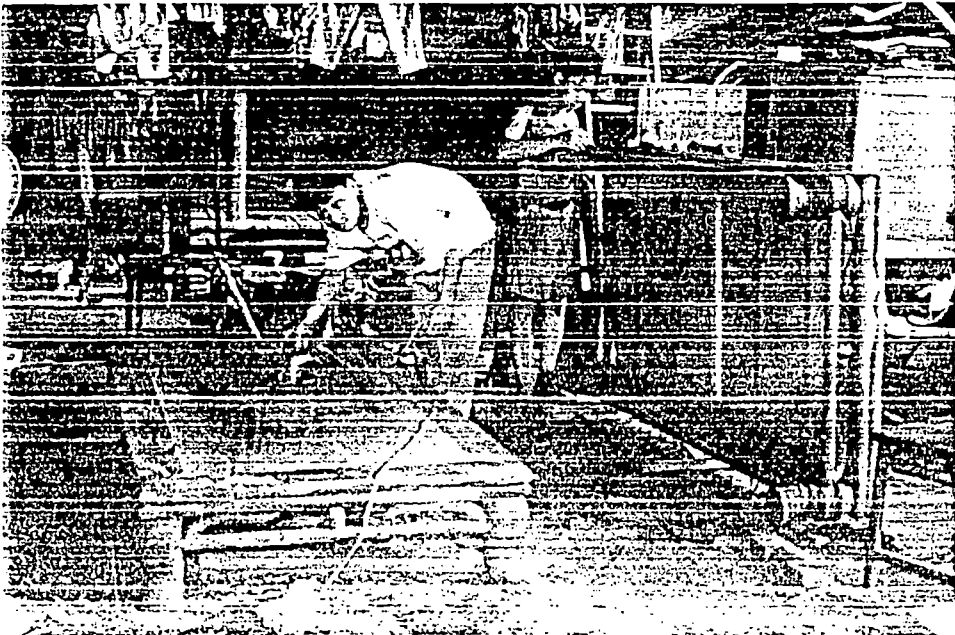
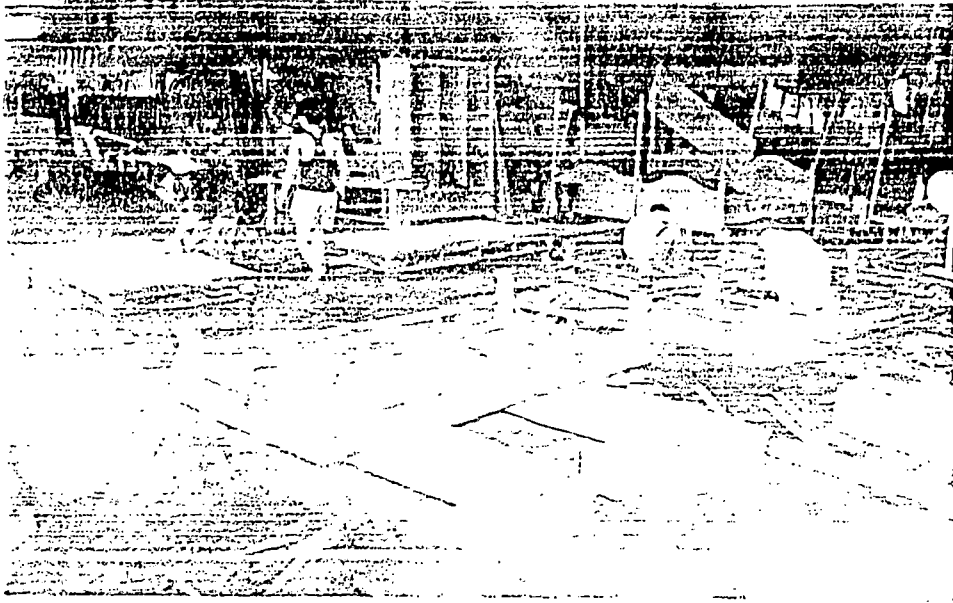
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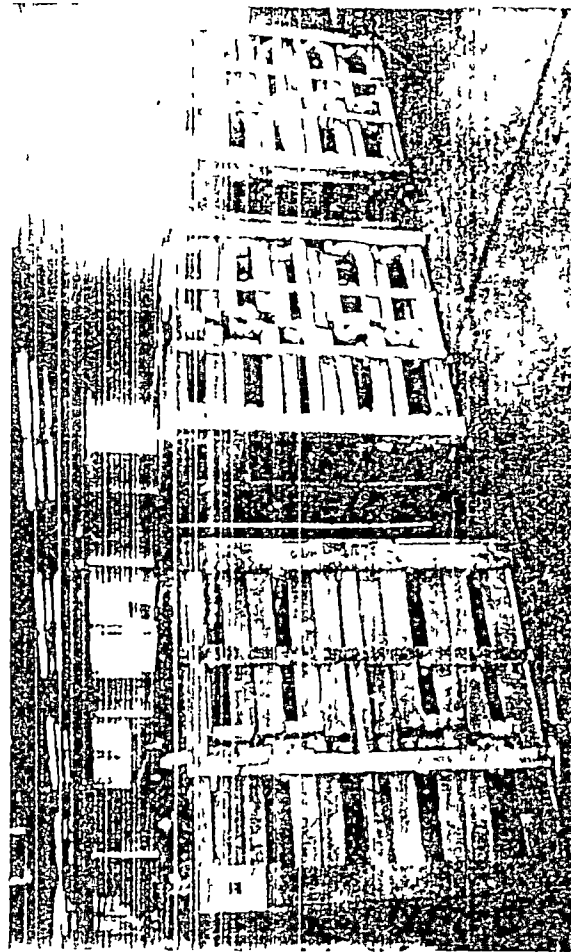
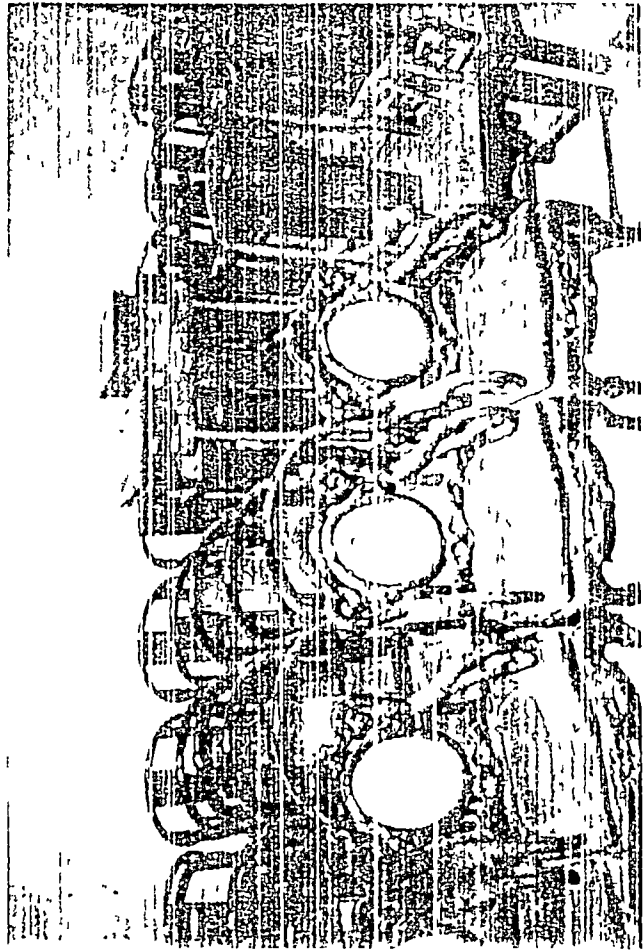
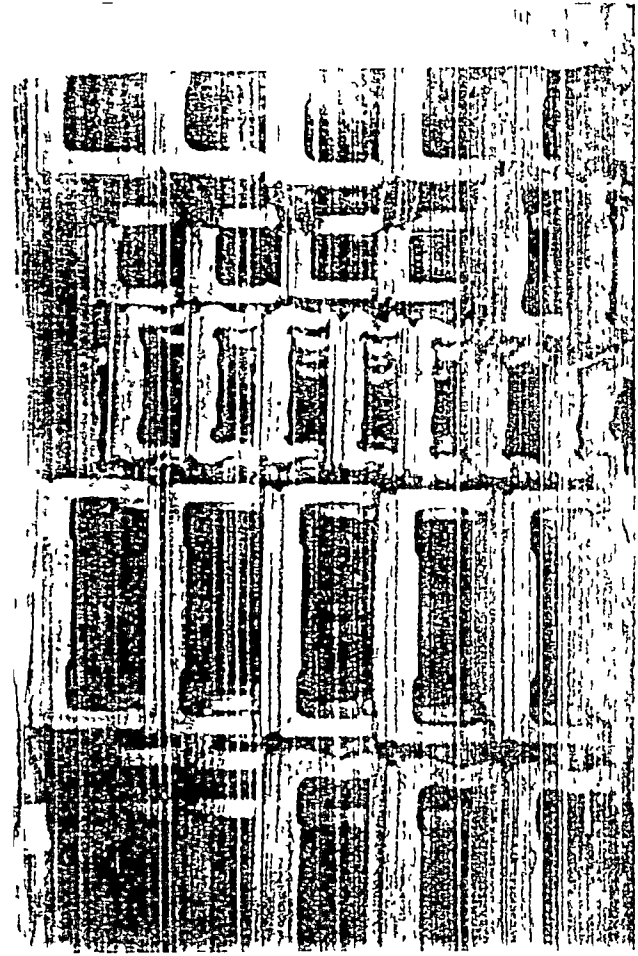
Package



*Production Workshops*

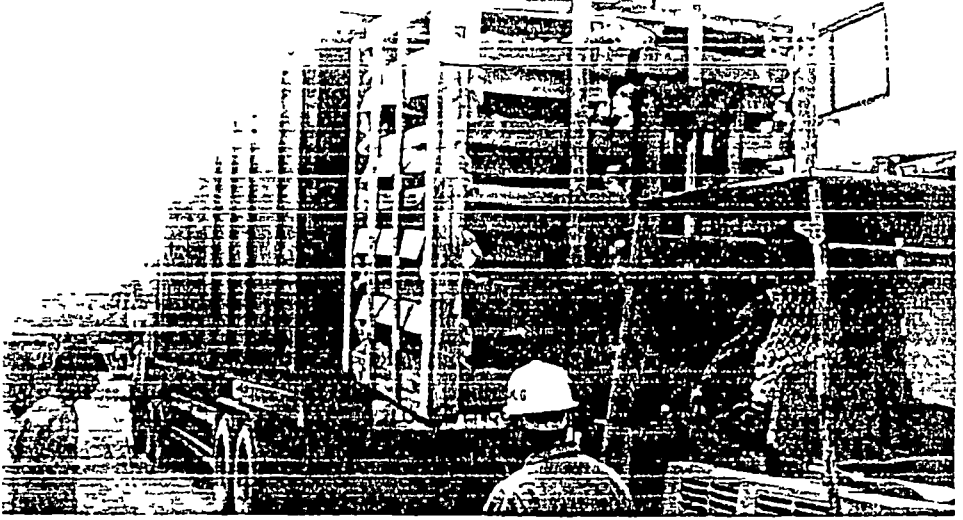
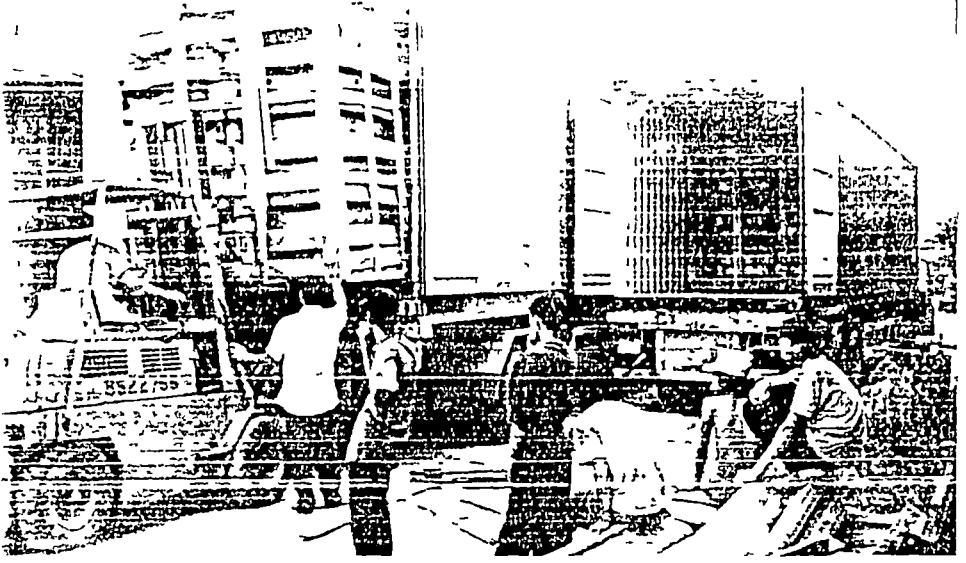




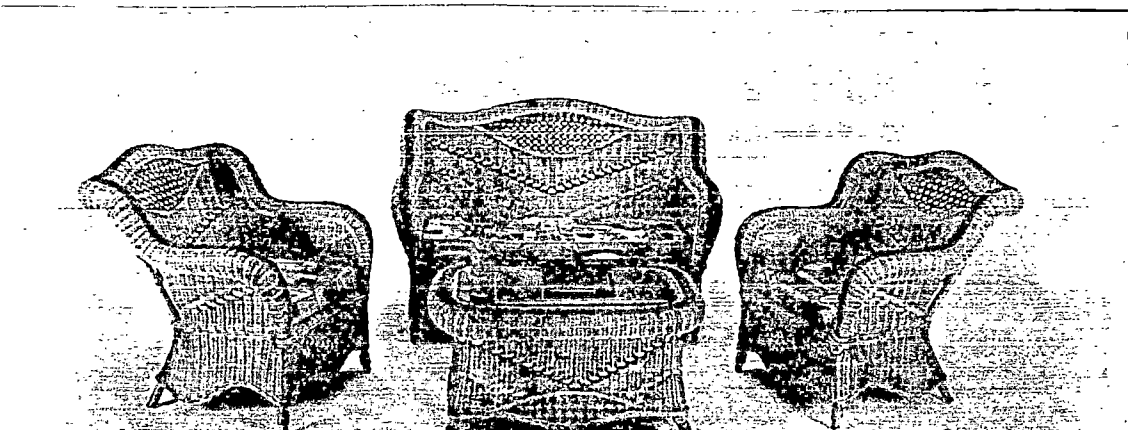
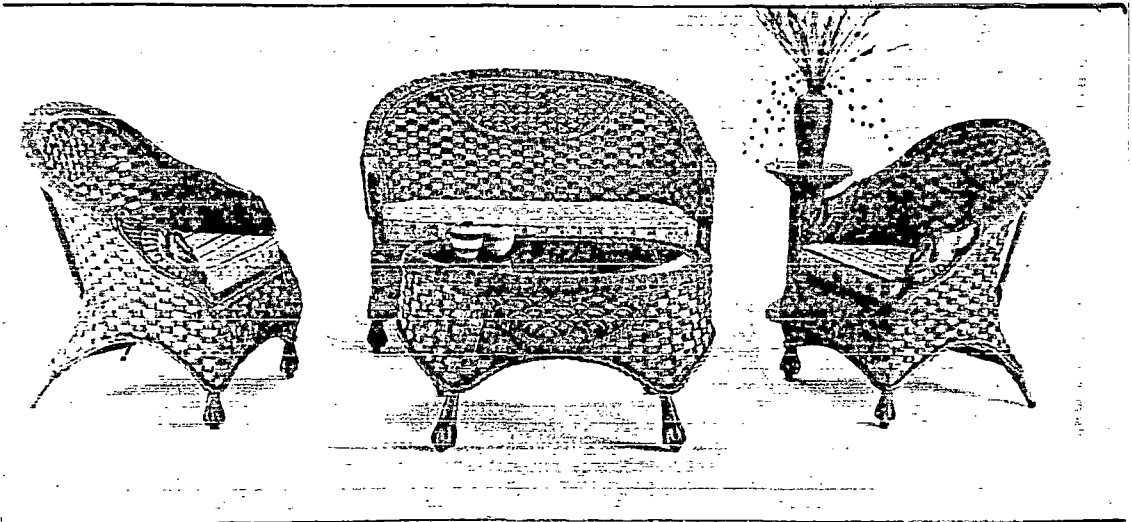
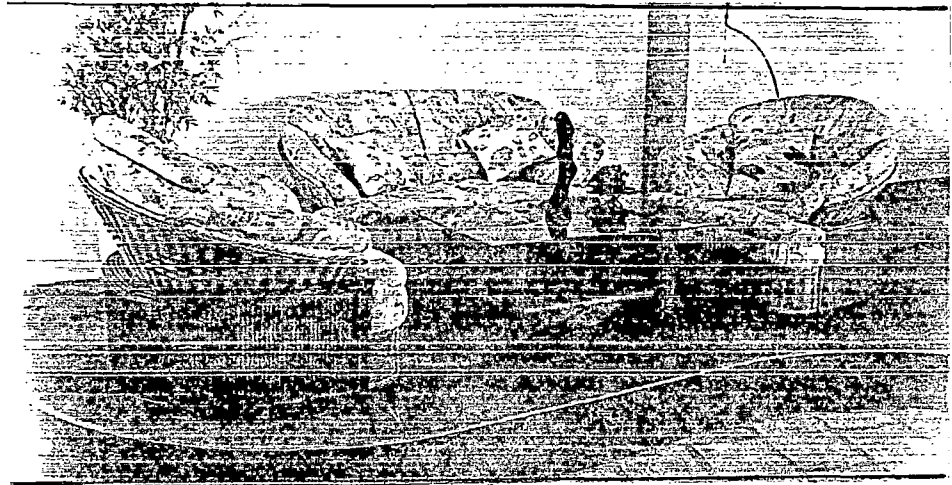
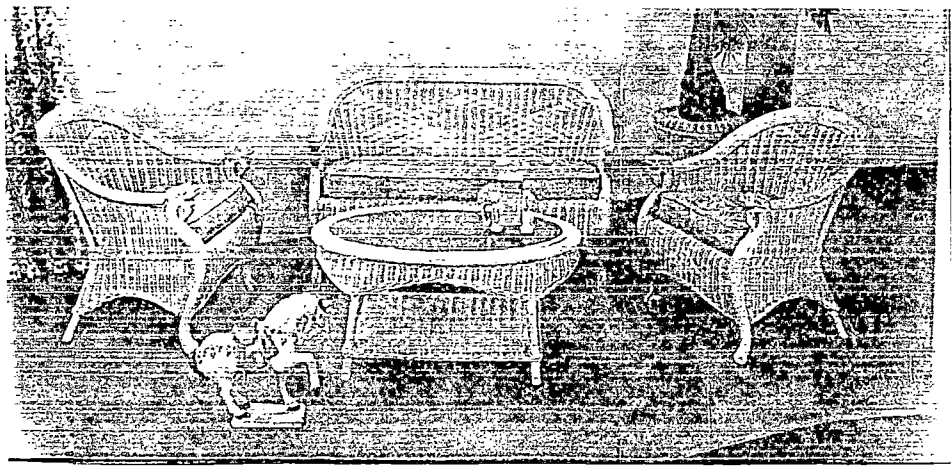


Product Storage

*Parking for transportation.*



Bamboo Cane



Signing contracts for composing, restoring, producing and exporting fine art and handicraft products made by wood, wood painted with vermilion and gilt, lacquer, ceramic, ceramic, stone, mother of pearl...

Packing services and delivery to any countries in the world by air or by sea for further information, please contact to **KIMA**

Fax no : (84 - 4) 8.211112 - (84 - 4) 9.725566

Head office : 11 Thi Sach Str - Hai Ba Trung Dist  
Hanoi - Vietnam

Tel/Fax : 84 - 4 - 9.725566 ; Tel/Fax : 84 - 4 - 8.211112

Branch : 46 Bach Khoa District Hai Ba Trung - Hanoi

Branch : 25/Y2 Lane Cuu Long - Tan Binh Dist - Ho Chi Minh City

Signing contracts for composing, restoring, producing and exporting fine art and handicraft products made by wood, wood painted with vermillion and gilt, lacquer, ceramic, ceramic, stone mother of pearl...

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Hanoi - Vietnam

Tel/Fax : 84 - 4 - 9.725566 ; Tel/Fax : 84 - 4 - 8.211112

Works : 46 Bach Khoa District Hai Ba Trung - Hanoi

Branch : 25/Y2 Lane Cuu Long - Tan Binh Dist - Ho Chi Minh City

vi - 84 - 8 - 8 420583

## VI/ FINANCIAL ANALYSIS :

### 1/ INVESTMENT CAPITAL OF THE PROJECT

- Production lines for wooden and bamboo, cane detail: 2,5 billion VND
- Main building : 0,75 billion VND
- *Working Capital Margin:* 0.125 billion VND
- Total: 3,375 billion VND

### 2/ ESTIMATED FINANCIAL RESOURCE :

- Loan from abroad : 200,000 US\$ = 2.5 billion VND ( 5 years )
- Governmet 's loan : 30,000 US\$ = 0.375 billion VND
- Share capital from farmer : 40.000 US\$ = 0.5 billion VND

SOURCES	AMOUNT (VND)	INTEREST RATE	REPAYMENT SCHEDULE
1-loan from abroad.	2.500 billion	6.5 %	Period of payment:5 years
2-Government's loan	0.375 billion	6.5 %	
3-Share capital	0.500 billion	0%	
Total :	3,375 billion VND		

*The weighted average cost of capital :*

$$\frac{2.5 \text{ billion}}{3.375 \text{ bill}} \times 6.5\% + \frac{0.375 \text{ billion}}{3.375 \text{ bill}} \times 6.5\% + \frac{0.5 \text{ billion}}{3.375 \text{ bill}} \times 0\% = 5.50\%$$

<b>Financial Analysis:</b>						
<b>( Figures in '000' VND).</b>						
<b>Details</b>	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>PROJECT COST:</b>						
Capital Cost.	(3,250,000)					
Working Capital Margin.	(125,000)					
<b>Total Cost:-</b>	<b>(3,375,000)</b>					
<b>Per Year Production (m<sup>3</sup>):</b>						
Wooden Carving.		<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
Bamboo & Cane.		<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
<b>Total:-</b>		<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
<b>Sales Revenue:</b>						
Wooden Carving @25,000 VND M <sup>3</sup> .		4,500,000	5,250,000	6,000,000	6,750,000	7,500,000
Bamboo & Cane @12,500 VND M <sup>3</sup> .		1,500,000	1,750,000	2,000,000	2,250,000	2,500,000
<b>Total Sales Revenue:-</b>		<b>6,000,000</b>	<b>7,000,000</b>	<b>8,000,000</b>	<b>9,000,000</b>	<b>10,000,000</b>
<b>Cost of Production and Sales:</b>						
Raw Material @9,660 VND 1/M <sup>3</sup> .		2,898,000	3,381,000	3,864,000	4,347,000	4,830,000
Chemicals @99.8 1/M <sup>3</sup> .		29,940	34,930	39,920	44,910	49,900
Cutting Tools, etc. @90 1/M <sup>3</sup> .		27,000	31,500	36,000	40,500	45,000
Other Accessories @350 1/M <sup>3</sup> .		105,000	122,500	140,000	157,500	175,000
Electricity @54 1/M <sup>3</sup> .		16,200	18,900	21,600	24,300	27,000
Water @25 1/M <sup>3</sup> .		7,500	8,750	10,000	11,250	12,500
Firewood, Coal @16 1/M <sup>3</sup> .		4,800	5,600	6,400	7,200	8,000
Salary @2500 1/M <sup>3</sup> .		750,000	875,000	1,000,000	1,125,000	1,250,000
<b>Sub-Total-1:-</b>		<b>3,838,440</b>	<b>4,478,180</b>	<b>5,117,920</b>	<b>5,757,660</b>	<b>6,397,400</b>
Expenses for Stoppage and Wrong Products @1% (1/M <sup>3</sup> ) of Sub-Total-1 Cost.		38,384	44,782	51,179	57,577	63,974
Packing Cost @1% (1/M <sup>3</sup> ) of Sub-Total-1 Cost.		38,384	44,782	51,179	57,577	63,974
<b>Sub-Total-2:-</b>		<b>3,915,209</b>	<b>4,567,744</b>	<b>5,220,278</b>	<b>5,872,813</b>	<b>6,525,348</b>

<b>Working Capital Requirements:</b>						
Total Cost of Production and Sales (Sub-Total-3).		4,110,969	4,796,131	5,481,292	6,166,454	6,851,615
Half Year Requirement.		2,055,485	2,398,065	2,740,646	3,083,227	3,425,808
Working Capital Margin.		125,000	125,000	125,000	125,000	125,000
Working Capital Loan.		1,930,485	2,273,065	2,615,646	2,958,227	3,300,808
Interest on Working Capital @12% p.a.		231,658	272,768	313,878	354,987	396,097
<b>Long Term Loan Repayment &amp; Intt. Schedule:-</b>						
Loan at the Beginning of the Year.		2,875,000	2,300,000	1,725,000	1,150,000	575,000
Repayment of Principal.		575,000	575,000	575,000	575,000	575,000
Cash Surplus.		1,183,223	1,464,309	1,622,929	1,781,550	1,940,170
Net Cash Surplus.		608,223	889,309	1,047,929	1,206,550	1,365,170
Repayment of Interest @6.5% pa.		186,875	149,500	112,125	74,750	37,375
<b>Break-even Point:</b>						
Sales Revenue.		6,000,000	7,000,000	8,000,000	9,000,000	10,000,000
Variable Cost.		3,396,867	3,965,511	4,534,156	5,102,800	5,671,445
Contribution.		1,652,635	1,772,887	1,893,139	2,013,391	2,133,642
Fixed Cost (Depreciation + Interest on Long Term Loan).		706,875	669,500	632,125	594,750	557,375
Capacity used at Break-even point ( % ).		0.43	0.38	0.33	0.30	0.26
Number of Products at Break-even point.						
Wooden Carving.		77	79	80	80	78
Bamboo & Cane.		51	53	53	53	52
Total:-		128	132	134	133	131
<b>Depreciation Schedule:</b>						
Cost of Workshop & Building.		3,250,000				
Salvage Value @ 20%.		650,000				
Depreciation @ 20% p.a. on remaining balance.		520,000	520,000	520,000	520,000	520,000



Selling & Distribution Expenses @2% of Sub-Total-2 Cost.		78,304	91,355	104,406	117,456	130,507
Management Expenses @3% of Sub-Total-2 Cost.		117,456	137,032	156,608	176,184	195,760
Sub-Total-3:-		4,110,969	4,796,131	5,481,292	6,166,454	6,851,615
Interest on Working Capital Loan @12% p.a.		231,658	272,768	313,878	354,987	396,097
<b>Total Cost of Production and Sales:-</b>		<b>4,342,627</b>	<b>5,068,899</b>	<b>5,795,170</b>	<b>6,521,441</b>	<b>7,247,712</b>
PBDIT.		1,657,373	1,931,101	2,204,830	2,478,559	2,752,288
Depreciation @ 20%.		520,000	520,000	520,000	520,000	520,000
PBIT.		1,137,373	1,411,101	1,684,830	1,958,559	2,232,288
Interest on Long Term Loan @6.5% p.a.		186,875	149,500	112,125	74,750	37,375
PBT.		950,498	1,261,601	1,572,705	1,883,809	2,194,913
Income Tax @6% on 40% Local Sales.		270,000	126,160	157,271	188,381	219,491
Profit after Tax on Local Sales.		680,498	1,135,441	1,415,435	1,695,428	1,975,421
Income Tax @30%.		204,149	340,632	424,630	508,628	592,626
PAT.		476,348	794,809	990,804	1,186,800	1,382,795
Net Cash Flow.	(3,375,000)	1,183,223	1,464,309	1,622,929	1,781,550	1,940,170
Salvage Value.						650,000
Margin Money Released.						125,000
Project Cash Flow.	(3,375,000)	1,183,223	1,464,309	1,622,929	1,781,550	2,715,170
<b>Net Present Value (NPV) @ 6.5%.</b>		<b>3,509,070</b>				
<b>Internal Rate of Return (IRR).</b>		<b>37%</b>				
<b>Variable Cost:</b>						
Cost as per Sub-Total-2.		3,915,209	4,567,744	5,220,278	5,872,813	6,525,348
Plus Interest on Working Capital Loan.		231,658	272,768	313,878	354,987	396,097
Less Salaries.		750,000	875,000	1,000,000	1,125,000	1,250,000
Total Variable Cost.		3,396,867	3,965,511	4,534,156	5,102,800	5,671,445
<b>Fixed Cost:</b>						
Salaries.		750,000	875,000	1,000,000	1,125,000	1,250,000
Selling & Distribution Cost.		78,304	91,355	104,406	117,456	130,507
Management Cost.		117,456	137,032	156,608	176,184	195,760
Depreciation.		520,000	520,000	520,000	520,000	520,000
Interest on Loan Term Loan.		186,875	149,500	112,125	74,750	37,375
Total Fixed Cost.		1,652,635	1,772,887	1,893,139	2,013,391	2,133,642

## VI/ FINANCIAL ANALYSIS :

### 1/ INVESTMENT CAPITAL OF THE PROJECT

- Production lines for wooden and bamboo, cane detail: 2,5 billion VND
- Main building : 0,75 billion VND
- *Working Capital Margin:* 0.125 billion VND
- Total: 3,375 billion VND

### 2/ ESTIMATED FINANCIAL RESOURCE :

- Loan from abroad : 200,000 US\$ = 2.5 billion VND ( 5 years )
- Government 's loan : 30,000 US\$ = 0.375 billion VND
- Share capital from farmer : 40.000 US\$ = 0.5 billion VND

SOURCES	AMOUNT (VND)	INTEREST RATE	REPAYMENT SCHEDULE
1-loan from abroad.	2.500 billion	6.5 %	Period of payment:5 years
2-Government's loan	0.375 billion	6.5 %	
3-Share capital	0.500 billion	0%	
Total :	3,375 billion VND		

*The weighted average cost of capital :*

$$\begin{array}{r}
 \frac{2.5 \text{ billion}}{3.375 \text{ bill}} \times 6.5\% + \frac{0.375 \text{ billion}}{3.375 \text{ bill}} \times 6.5\% + \frac{0.5 \text{ billion}}{3.375 \text{ bill}} \times 0\% = 6.50\%
 \end{array}$$

<b>Financial Analysis:</b>						
<b>( Figures in '000' VND).</b>						
<b>Details</b>	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>PROJECT COST:</b>						
Capital Cost.	(3,250,000)					
Working Capital Margin.	(125,000)					
<b>Total Cost:-</b>	<b>(3,375,000)</b>					
<b>Per Year Production (m<sup>3</sup>):</b>						
Wooden Carving.		<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
Bamboo & Cane.		<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
<b>Total:-</b>		<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
<b>Sales Revenue:</b>						
Wooden Carving @25,000 VND M <sup>3</sup> .		4,500,000	5,250,000	6,000,000	6,750,000	7,500,000
Bamboo & Cane @12,500 VND M <sup>3</sup> .		1,500,000	1,750,000	2,000,000	2,250,000	2,500,000
<b>Total Sales Revenue:-</b>		<b>6,000,000</b>	<b>7,000,000</b>	<b>8,000,000</b>	<b>9,000,000</b>	<b>10,000,000</b>
<b>Cost of Production and Sales:</b>						
Raw Material @9,660 VND 1/M <sup>3</sup> .		2,898,000	3,381,000	3,864,000	4,347,000	4,830,000
Chemicals @99.8 1/M <sup>3</sup> .		29,940	34,930	39,920	44,910	49,900
Cutting Tools, etc. @90 1/M <sup>3</sup> .		27,000	31,500	36,000	40,500	45,000
Other Accessories @350 1/M <sup>3</sup> .		105,000	122,500	140,000	157,500	175,000
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Water @25 1/M <sup>3</sup> .		7,500	8,750	10,000	11,250	12,500
Firewood, Coal @16 1/M <sup>3</sup> .		4,800	5,600	6,400	7,200	8,000
Salary @2500 1/M <sup>3</sup> .		750,000	875,000	1,000,000	1,125,000	1,250,000
<b>Sub-Total-1:-</b>		<b>3,838,440</b>	<b>4,478,180</b>	<b>5,117,920</b>	<b>5,757,660</b>	<b>6,397,400</b>
Expenses for Stoppage and Wrong Products						
@1% (1/M <sup>3</sup> ) of Sub-Total-1 Cost.		38,384	44,782	51,179	57,577	63,974
Packing Cost @1% (1/M <sup>3</sup> ) of Sub-Total-1 Cost.		38,384	44,782	51,179	57,577	63,974
<b>Sub-Total-2:-</b>		<b>3,915,209</b>	<b>4,567,744</b>	<b>5,220,278</b>	<b>5,872,813</b>	<b>6,525,348</b>



Selling & Distribution Expenses @2% of Sub-Total-2 Cost.		78,304	91,355	104,406	117,456	130,507
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Sub-Total-3:-		4,110,969	4,796,131	5,481,292	6,166,454	6,851,615
Interest on Working Capital Loan @12% p.a.		231,658	272,768	313,878	354,987	396,097
<b>Total Cost of Production and Sales:-</b>		<b>4,342,627</b>	<b>5,068,899</b>	<b>5,795,170</b>	<b>6,521,441</b>	<b>7,247,712</b>
PBDIT.		1,657,373	1,931,101	2,204,830	2,478,559	2,752,288
Depreciation @ 20%.		520,000	520,000	520,000	520,000	520,000
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Total Variable Cost.		3,396,867	3,965,511	4,534,156	5,102,800	5,671,445
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Depreciation.		520,000	520,000	520,000	520,000	520,000
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Total Fixed Cost.		1,652,635	1,772,887	1,893,139	2,013,391	2,133,642

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	<b>Financial Analysis:</b>					
	<b>( Figures in '000' VND).</b>					
<b>Details</b>	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
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Salvage Value.						650,000
Margin Money Released.						125,000
Project Cash Flow.	(3,375,000)	1,183,223	1,464,309	1,622,929	1,781,550	2,715,170
<b>Net Present Value (NPV) @ 6.5%.</b>	<b>3,509,070</b>					
<b>Internal Rate of Return (IRR).</b>	<b>37%</b>					
<b>Variable Cost:</b>						
Cost as per Sub-Total-2.		3,915,209	4,567,744	5,220,278	5,872,813	6,525,348
Plus Interest on Working Capital Loan.		231,658	272,768	313,878	354,987	396,097
Less Salaries.		750,000	875,000	1,000,000	1,125,000	1,250,000
Total Variable Cost.		3,396,867	3,965,511	4,534,156	5,102,800	5,671,445
<b>Fixed Cost:</b>						
Salaries.		750,000	875,000	1,000,000	1,125,000	1,250,000
Selling & Distribution Cost.		78,304	91,355	104,406	117,456	130,507
Management Cost.		117,456	137,032	156,608	176,184	195,760
Depreciation.		520,000	520,000	520,000	520,000	520,000
Interest on Loan Term Loan.		186,875	149,500	112,125	74,750	37,375
Total Fixed Cost.		1,652,635	1,772,887	1,893,139	2,013,391	2,133,642