ANNEX-A

1. STUDY TEAM MEMBERS AND ASSIGNMENT
2. CONTACT LIST
3. ITINERARY OF FIELD STUDY FOR REPUBLIC OF THE PHILIPPINES, BASIC DESIGN STUDY FOR INCREASED FOOD PRODUCTION PROGRAM
4. MINUTES OF MEETING
5. BANNED AND RESTRICTED PESTICIDES IN THE PHILIPPINES
6. INTENSIFIED RICE PRODUCTION PROGRAM
7. ORGANIZATION CHART OF THE FERTILIZER AND PESTICIDE AUTHORITY (FPA)
8. LIST OF RECOMMENDED PESTICIDES FOR THE USE OF MASAGANA 99 PROGRAM, 1983-84
9. UPDATED LIST OF RECOMMENDED PESTICIDES FOR THE USE IN THE EXPANDED YELLOW CORN PRODUCTION ASSISTANCE & MAISAGANA PROGRAM 1985
10. National Food Authority, Organizational Structure
11. Organization of National Irrigation Administration

1. MEMBER AND ASSIGNMENT LIST

Name	Designation	Organization
Takenori YAMAZAKI	Team Leader	Grant Aid Division Economic Cooperation Bureau, Ministry of Foreign Affairs
Toshiro KOJIMA	Evaluation	Overseas Public Investment Division International Finance Bureau, Ministry of Finance
Mikio NAKAMURA	Project Coordinator	Basic Design Division Grant Aid Department Japan International Cooperation Agency
Kimio SAKATA	Crop Production Specialist	International Project Department Chuo Kaihatsu Corporation
Takishi TAMURA	Crop Protection Specialist	International Project Department Chuo Kaihatsu Corporation
Yoshihisa ONISHI	Agricultural Engineer	International Project Department Chuo Kaihatsu Corporation

2. CONTACT LIST

NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY

Romeo A. REYES	Asst. Director General
Eduardo G. CORPUS	Asst. Director General
Vicente A. SALAZAR Jr.	Act. Director
M.S.J. De LEON	Asst. Director
Edwin B. SANGOYO	Act. Asst. Director
Alely A. ALEJAR	Analyst
Mariles L.A. ROMERO	

MINISTRY OF AGRICULTURE AND FOOD

Salvador H. ESCUDERO III	Minister
Domingo F. PANGANIBAN	Deputy Minister

NATIONAL FOOD AND AGRICULTURAL COUNCIL

A.A. FORTIN	Chief, Special Project Division
Elgie NAMIA	Sec. Chief, Special Project Division
Paz M. MAGNAYE	Staff Officer, Special Project Division
Moises VERGARA	Prov. Agr. Extension Officer, Reg. 3

NATIONAL IRRIGATION ADMINISTRATION

Avelino S. RIVERA	Manager, Project Development Dep.
Abelardo Y. ARMENTIA	Head, F/S Division, PDD
Manuel SALAZAR	Director Region 6
Domingo Y. DATO-ON	Regional Operation Engineer Reg. 6

Samuel VAPITANA	Superintendent, Jalaur RIS
Wilpedo S. TIANGCO	Operation Manager, UPRIS
Roberto C. BOLINAD	Public Affairs Officer, UPRIS
Victor C. CRUZ	Division Manager, Region 3
Fidel C. NEPONUCENO	OIC, Region 3
GONZAIEZ	Irrigation Superintendent, AMRIS
Marumi YAMADA	Irrigation Engineer
Osamu UMEKAWA	Irrigation Engineer
Nariaki TAMURA	Irrigation Engineer

NATIONAL FOOD AUTHORITY

Romeo R. LACSON	Deputy Administrator
Gaudencio FERRER	Director, INF
Teofilo T. VERGARA	Division Chief
Vic J. JARINA	Operation Specialist
Concept R. IRIGO	Div. Chief, CORPLAN
Wilfredo O. RENDON	Provincial Manager, Reg. 3
B.Henry H. TRISTEZA	Asst. Project Manager, Northern Philippine Grain Complex
ALANO	Director, Region 6

BUREAU OF PLANT INDUCTRY

Dic CABALLERO	Chief, Crop Production Division
Dominador P. BANAYLO	Superintendent Visaya Rice Experimental Station

Rolando C.CELIZ	Engineer
Jesus P.SUMAGIL	Research Chief
	Crop Protection Division

FERTILIZER AND PESTICIDE AUTHORITY

Bernadette L.ABAD	Dept. Administrator for Fertilizer
Cecilia P. GASTON	Dept. Administrator for Pesticide
Pabicio BORRO	Manager, Iloilo

CAGAYN INTEGRATED AGRICULTURAL DEVELOPMENT PROGRAM

Alfredo Q. KANAPI	Program Manager
Capt. Juan A.De LEON	Project Director

CENTRAL LUZON STATE UNIVERSITY

Aurado C, CAMPOS	President

PLANTERS PRODUCTS INC.

Pramo B. CORTES	Executive Deputy Director
M.S. QUIAMBO	Market Service Manager
Inocencio E. ORTEGA	Distribution Manager
Rodelfo V. TORRED	District Manager, Region 6
Renato G. REGALANDO	Sales Supervisor, Region 6

UNITED STATE AGENCY FOR INTERNATIONAL DEVELOPMENT

William T. OLIVER	Program Officer
Douglas J. CLARK	Chief, Rural Agriculture

	Development Office
ASIAN DEVELOPMENT BANK	
Richard M. BRADLEY	Manager, Irrigation & Rural Development Division II
M.E. TUSNEEM	Sr. Agronomist, IRDD II
G.M. WALTER	Sr. Project Economist, IRDD II
Shoji NISHIMOTO	Sr. Sector Planning Specialist IRDD II

3. ITINERARY OF BASIC STUDY TEAM

	Date	AM	PM	STAY
OCT.	22 (Tue)	10:15 Narita PR431	13:30 Manila JICA, Embassy	Manila
	23 (Wed)	NEDA courtesy call	Joint Meeting with NFAC, NIA, NFA	Manila
	24 (Thu)	Hearing in PPI	Hearing with USAID & ADB	Manila
	25 (Fri)	9:50 PR141 10:50 Manila Iloilo	Survey of Iloilo Area (NIA, NFAC, NFA, BPI)	Iloilo
	26 (Sat)	PPI warehouse, Dealer, AMC, IRPP Farmers' Survey	17:10 PR144 18:10 Iloilo Manila	Manila
	27 (Sun)	Visit Facities donated by Japanese Government under JICA General Grant		Manila
	28 (Mon)	Joint meeting with NEDA, NFAC, NIA, NFA Discussion with CIADP		Manila
	29 (Tue)	Minutes of Meeting	Report to Embassy & JICA	Manila
	30 (Wed)	Data consolidation	Gov. Mission leave Manila 14:30 PR432 19:25 Manila Narita	Manila
	31 (Thu)	Data collection	Data collection	Manila
NOV.	1 (Fri)	All Saints Day, Data consolidation		Manila
	2 (Sat)	Data consolidation		Manila
	3 (Sun)	Data consolidation		Manila
	4 (Mon)	Inspection of machinery donated under the Program in Northern Philippine Grain Complex in Region II, NFA, NIA, BPI, CLSU		Manila
	5 (Tue)	Hearing NIA Region 3, Bustos Municipality, Reporting the study result to MAF Minister		Minila
	6 (Wed)	Data collection from ADB, NFAC, NFA, FPA, NEDA, NIA		Manila
	7 (Thu)	Report to Embassy & JICA		Manila
	8 (Fri)	Manila ——— Narita		

MINUTES OF DISCUSSIONS

ON

THE BASIC DESIGN STUDY

FOR

THE INCREASED FOOD PRODUCTION PROGRAM

IN

THE REPUBLIC OF THE PHILIPPINES

MANILA, October 29, 1985

ROMEO REYES
Assistant Director General
National Economic and
Development Authority

TAKENORI YAMAZAKI
Team Leader
Japanese Study Team

1

In response to the request made by the Government of the Republic of the Philippines for a grant aid of the Increased Food Production Program (hereinafter referred to as "The Project"), the Government of Japan, through Japan International Cooperation Agency (JICA) has dispatched a study team headed by Mr. TAKENORI YAMAZAKI, Assistant Director of Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs (hereinafter referred to as "The Team") to discuss the effective implementation of the Project and to conduct the basic design study on the Project from October 22nd to November 8th, 1985.

The Team carried out a field survey, had a series of discussions and exchanged views on the Project with the Agencies concerned of the Republic of the Philippines.

As a result of the survey and discussion, the Team and the Philippine authorities concerned have agreed to recommend to their respective Governments that the results of the discussions attached herewith should be examined toward the realization of the Project.

ATTACHMENT

1. The Project intends to support the self-reliant efforts of the Philippines for increased food production with the agricultural commodities such as fertilizer agricultural chemicals, and agricultural machineries/equipments to be provided by the Government of Japan under Japan's Grant Aid Program.

2. The agricultural commodities requested by the Government of the Philippines for the 1985 Increased Food Production Program, as listed in ANNEX I, will be utilized for the following programs,

   1) RP-Japan Food Production Program

   2) Post Harvest Support Program

   3) Irrigation Facilities Operation and Maintenance Program

   It is understood that at least 400 Million Yen of the Grant Aid will be utilized in areas for which Asian Development Bank extends financial assistance.

3. The implementation agencies of the above program are National Food and Agriculture Council (NFAC), National Food Authority (NFA) and National Irrigation

Administration (NIA), respectively, and National Economic and Development Authority (NEDA) is responsible for the coordination of the Project.

4. The Team will convey the desire of the Government of the Philippines to the Government of Japan that the Japanese Government will take necessary measures to cooperate in implementing the Project by providing necessary agricultural commodities within the scope of Japan's Economic Cooperation Program in the Grant Form.

5. Agricultural commodities to be provided will be finalized by the Team on the basis of the results of study, taking into full consideration the request of the agencies concerned of the Government of the Republic of the Philippines.

6. The Philippine authorities concerned understood and accepted Japan's Grant Aid System explained by the Team.

7. The Philippine authorities concerned have confirmed that the necessary measures to be taken by both Governments are listed in ANNEX II on condition that grant aid by the Government of Japan is extended to the Project.

8. Tentative schedule for the implementation of the Project is as attached in ANNEX III.

9. Philippine side assured that the Grant Aid request for the 1986 Increased Food Production will be made in the earliest possible time.

4

ANNEX 1

NFAC

Item	Quantity	Unit
Fertilizer		
Urea	7,000	MT
14-14-14	7,300	MT
16-20- 0	3,000	MT
25- 0- 0	6,000	MT
AGRICULTURAL CHEMICAL (Technical Grade)		
Insecticide		
MIPC	40,040	kg
BPMC	20,000	kg
Diazinon	50,000	kg
MEP	30,000	kg
Fenvalerate	3,000	kg
PAP	50,000	kg
DEP	2,300	kg
Fungicide		
EDDP	4,000	litre
Herbicide		
Benthiocarb	59,400	kg
SMCA	30,000	kg
Rodenticide		
Coumatetralyl (10%)	1,000	kg
Coumatetralyl (0.75%)	10,000	kg

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NFA

		Specification/ Capacity	No. of Units
A.	Grains Processing Equipment		
1.	Portable Pre-Cleaner	1 ton per hour	18
2.	Portable Dryer	Recirculating Batch Type 2 tons per 8 hours each	18
3.	Ricemilling Equipment and parts	1 ton per hour	18
4.	Portable Storage Facilities	250 tons/set	18
B.	Grains Laboratory Equipment		
1.	Laboratory Testing Husker		38
2.	Laboratory Testing Mill		38
3.	Double Beam Balance		45
4.	Thickness Grader		38
5.	Infrared Moisture Meter		3

Distribution Areas:

1. Cagayan
2. Isabela
3. Nueva Ecija
4. Bulacan
5. Pampanga
6. Iloilo
7. Bukidnon
8. South Cotabato
9. Davao del Norte
10. Agusan del Sur

NIA

Item	Project Name	A	B	C	D	E	F	G	H	I	J	K	Total Units
1.	Backhoe, Wheel Tractor 0.5-0.8/0.15-0.25 m buckets	3	4	3	3	2	3	4	2	2	3	3	32
2.	Tractor Dozer 56-85 HP	1	1	-	1	1	-	-	1	1	-	-	6
3.	Grader, 60-75 HP	1	1	-	1	1	1	1	1	1	1	1	10

LIST OF PROJECTS

		Service Area (Ha)
A.	Region I	
	1. San Fabian RIS	2,766
	2. Masalip RIS	1,620
	3. Tagudin RIS	1,384
		5,770
B.	Region II	
	1. Pinacanauan RIS	1,500
	2. Baggao RIS	1,818
	3. Banurbur RIS	936
	4. Solana-Tuguegarao	1,320
		5,574
C.	Region III	
	1. Sto. Tomas RIS	3,448
	2. Porac Gumain RIS	5,263
		8,711

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D.	Region IV	
	1. Mabacan RIS	598
	2. Dumacaa RIS	2,500
	3. Pagbahan RIS	1,378
		4,476
E.	Region V	
	1. Libmanan-Cabusao IS	3,427
	2. Daet-Talisay IS	3,728
		7,155
F.	Region VI	
	1. Mambusao RIS	1,440
	2. Aklan RIS	3,956
	3. Sibalom-Tigbauan	2,020
		7,416
G.	Region VIII	
	1. Bito RIS	1,700
	2. Binabaan N & S IS	3,330
	3. Soong RIS	1,200
	4. Bao RIS	1,917
		8,147
H.	Region IX	
	1. Sibuguey IS	3,100
	2. Labangan RIS	3,000
		6,100
I.	Region X	
	1. Roxas Kuya RIS	1,378
	2. Andaman RIS	5,200
		6,570
J.	Region XI	
	1. Marbel RIS	2,700
	2. Saug RIS	4,100
	3. Lupon IS	2,000
		8,800
K.	Region XII	
	1. M'lang RIS	2,308
	2. Malasila RIS	3,900
	3. Rugnan RIS	3,680
		9,888

ANNEX II

Necessary terms to be taken by both Governments

		RP	Japan
1.	To provide agricultural commodities		o
2.	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement a) Advising Commission of Authorization to Pay b) Payment Commission	o	
3.	To ensure unloading, customs clearance, bonded warehouse charge and tax exemption of the agricultural commodities connected with the Project at the port of disembarkation in the Republic of the Philippines	o	
4.	To ensure that the products purchased under the Grant will make effective contribution to the increase of food production and eventually to the stabilization and development of the Philippines' economy	o	
5.	To bear all the expenses, other than those to be borne by the Grant	o	
6.	To maintain and use properly and effectively the agricultural equipments and machineries purchased under the Grant	o	
7.	To appropriate in the budget in Philippine currency an amount equivalent to the yen disbursement paid with respect to the purchase of agricultural machineries and equipment	o	

9

ANNEX III

The tentative Schedule for the implementation of the Project is as follows:

	1985		1986			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Exchange of Notes		o				
B / A			o			
Tender				o		
Contract					o	
Verification of Contract					o	
Issuance A/P					o	
Notification of A/P						o
Execution of the Project						o

BANNED AND RESTRICTED RESTICIDES IN THE PHILIPPINES

FERTIRIZER AND PESTICIDE AUTHORITY August 1983

I BANNED PESTICIDES

BANNED PESTICIDES are not to be brought into and used in this country, any circumstnces.

II RESTIRICTED PESTICIDES

Guidelines on Restiricted Pesticide

A Restricted pesticides are covered by two basic guidelines:

A. They may not be allowed for distribution, sale and use in certain crops and /or areas of the country, and;

B. They may be used only by and under the supervision of certified applicators, or under such conditions as the F P A Administrator may require.

Classifications of Restiricted Pesticide

The List of Restricted Pesticides is categorized as follows:

1. Those which are not for importation except in case of emergency. Such cases are bo be determinded by the Authority.
2. Those to be used for termite control only
3. Those to be used under specified limitations
4. Fumigants and other chemicals for use only by certified fumigators

III STOP SALE, STOP USE, REMOVAL AND HOLD ORDERS

When a pesticide is being offered for sale or used in violation of this Restriction Notice, the F P A through its authorized representative, may issue nad enforce stop sale, stop use, removal or hold order to the owner or custodian of said pesticide, ordering it to be held at a designated place until the law or the Rules and Regulations of this Authority shall have been complied with; the said pesticide is released in writing by the F P A or its authorized representative; or until all said violations have been disposed by the proper authorities.

The provisions of Presidential Decree 1144 and the F P A Rules and Regulations and their penal provisions shall apply for violations of this circular.

IV BANNED AND RESTRICTED PESTICIDES IN THE PHILIPPINES

Banned Pesticides

1. Parathion-ethyl
2. Copper Aceto-arsenite (Paris Green)
3. D D T containing mosquito coils
4. D B C P
5. Nitrofen
6. Leptophos
7. E P N
8. Endrin
9. Mercuric fungicides
10. Toxaphene

11. Elemental phosphorous (White & Yellow)
12. Thallium sulfate
13. 1-Napthylthiourea(ANTU)
14. Gophacide
15. Sodium Flouroacetate
16. Sodium Foluroacetamide(1081)
17. Strychinine

Restricted Pesticide

A. Importation Not Allowed Except in Cases of Emergency as Determined by the Authority.

1. 2, 4, 5-T
2. Heptachlor - only allowed use in agriculture is for pineapple plantations under conditions enumerated in Pesticide Circular NO.9, Seried of 1982.
3. DDT—the only allowed use is for malarial eradication program.
4. Aldicarb
5. Technical HCH or BHC—For direct importation in sugar plantation stipulates in Pesticide Circular NO.4S.1983
6. Chlorobenzilate

B. For Termite Control Only

1. Aldrin
2. Dieldrin
3. Chlordane
4. Heptachlor

C. For Use Under Specified Limitations

1. Not for Use near Aquatic Ecosystem

a. Aldrin

b. Chlordane

c. Dieldrin

d. Endosulfan

2. Too Hazardous for General Use (For Institutional Use Only). 1/

a. Paraquat —for use in Banana plantations only

b. Phenamifos —Nemacur —for use in Banana plantations only

c. Etroprop —Mocap —for use in Banana plantations only

d. Methidathion —Supracide —for use in Banana plantations only

e. Inorganic Arsenicals (Arsenic Trioxide)— For use in wood preserving plants only.

D. Fumigants and Other Chemicals for Use Only By Certified Fumigators

Adequate time for aeration is required after treatment before commodities are processed into food or feed.

1. Methyl bromide

2. Ethylene dibromide

3. Carbon Disulfide

4. Phosphate generating compounds

5. HCN—generating materials

6. Carbon tetrachloride

7. Chloroform

8. Ethylformate

1/ Strict compliance to guidelines for Institutional Use imperative

INTENSIFIED RICE PRODUCTION PROGRAM

1. Background

Over the past ten years (1973-83), the Masagana 99 Program has made substantial contributions to rice production in the Philippines through provision of support services to rice production in the Philippines through provision of support services to rice farmers including input loans, technical assistance, infrastructure improvement, farm input supply and marketing sytem improvement.

Although the program has been revised about once every tow years to adapt to circumstantial changes occuring since the plan was first formulated, these minor revisions are no longer sufficient. Accordingly, the Intensified Rice Production Program was planned in order to implement major revision of the Masagana 99 Program.

2. Objectives

The objectives of the intensified Rice Production Program are to:

(1) produce an additional 600,000MT of palay by the end of June 1985; and,

(2) procure and maintain a government buffer stock equivalent to 400,000MT of rice.

3. Strategies

The following strategies are planned for implementation,

(1) Planting of two palay crops during the dry season in selected areas serviced by more efficient national, communal and pump irrigation system;

(2) Provision of adequate and timely financing support through direct government and private sector financing;

(3) Provision of full marketing assistance by the National Food Authority through buying price incentives; and

(4) Provision of full extension support to ensure efficient fertilizer and water management as well as effective control of pests and diseases.

4. Alternative Financing Schemes

Three alternative schemes are porposed to provide production loans to farmers who wish to participate in the Intensified Rice Production Program.

(1) NFA Assistance Scheme

NFA assists farmers, farmers group, and agricultural cooperatives through the supply of farm inputs, credit for employing farm labor and technical assistance utilizing the existing NFA netwerk.

(2) Trader-Miller/Input Supplier Assistnce Scheme

1) Trader-Miller Assistance Scheme

This is a two step loan from the Quedan Guarantee Fund Board to farmers through traders and millers. Repayment is usually made in kind.

2) Input Supplier Approach

The input supplier provides farm inputs on a loan basis and repayment is made either in cash or in kind.

(3) Banking System Assistance Scheme

This scheme is approximately same as Masagana 99.

5. Program Implementation

Twenty major rice producing provinces have been jointly identified by the Ministry of Agriculture and Food and the National Irrigation Administration. A total area of 150,000ha is targeted for immediate planting by 1984 and will be fully replanted by February and March of 1985. The area is divided into 80,700ha of communal irrigation system and 12,600ha of pump irrigation system.

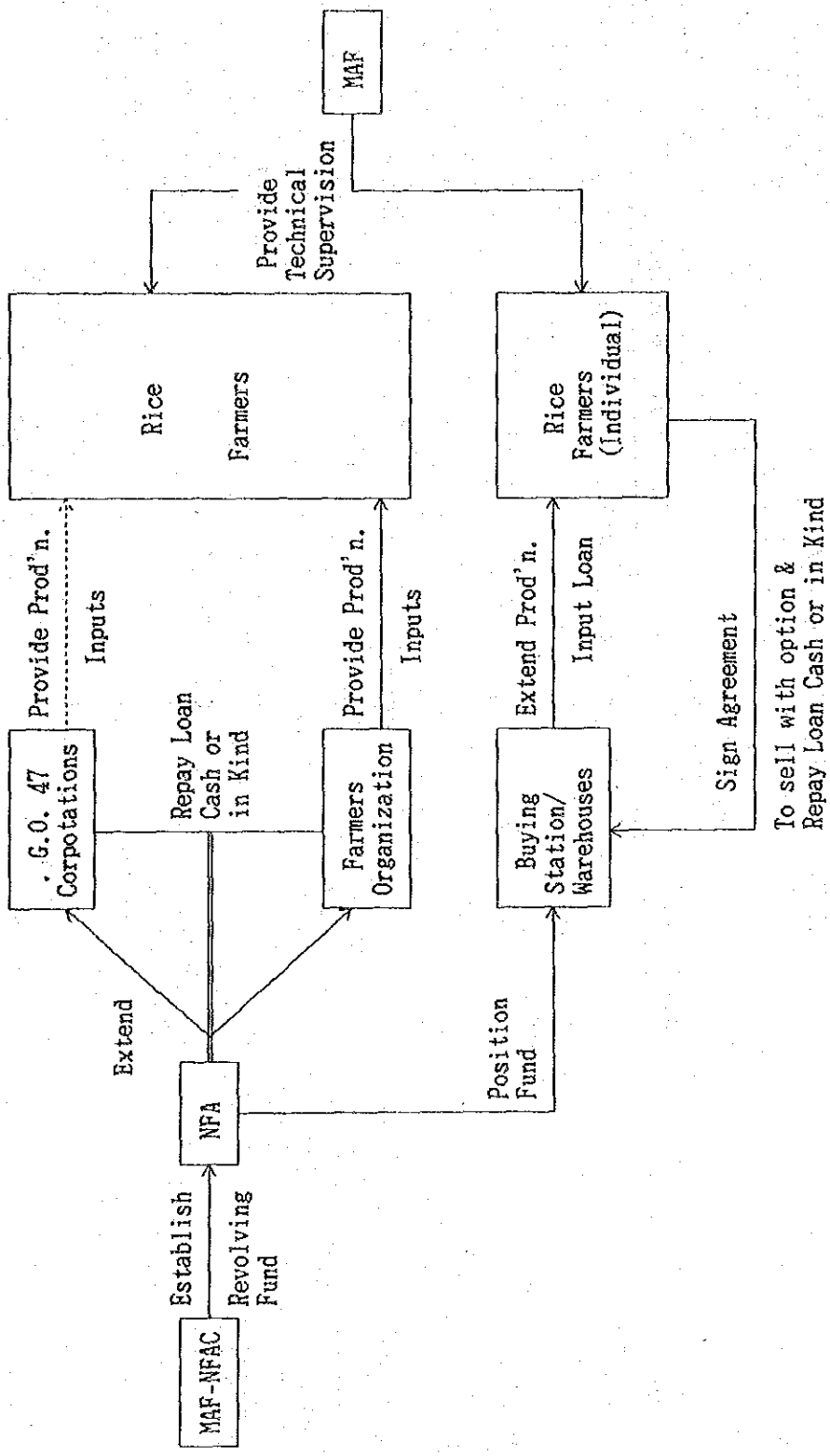
6. Financing

Financing amount varies upon farmers capability not exceeding ₱3,000/ha. One example is as follows:

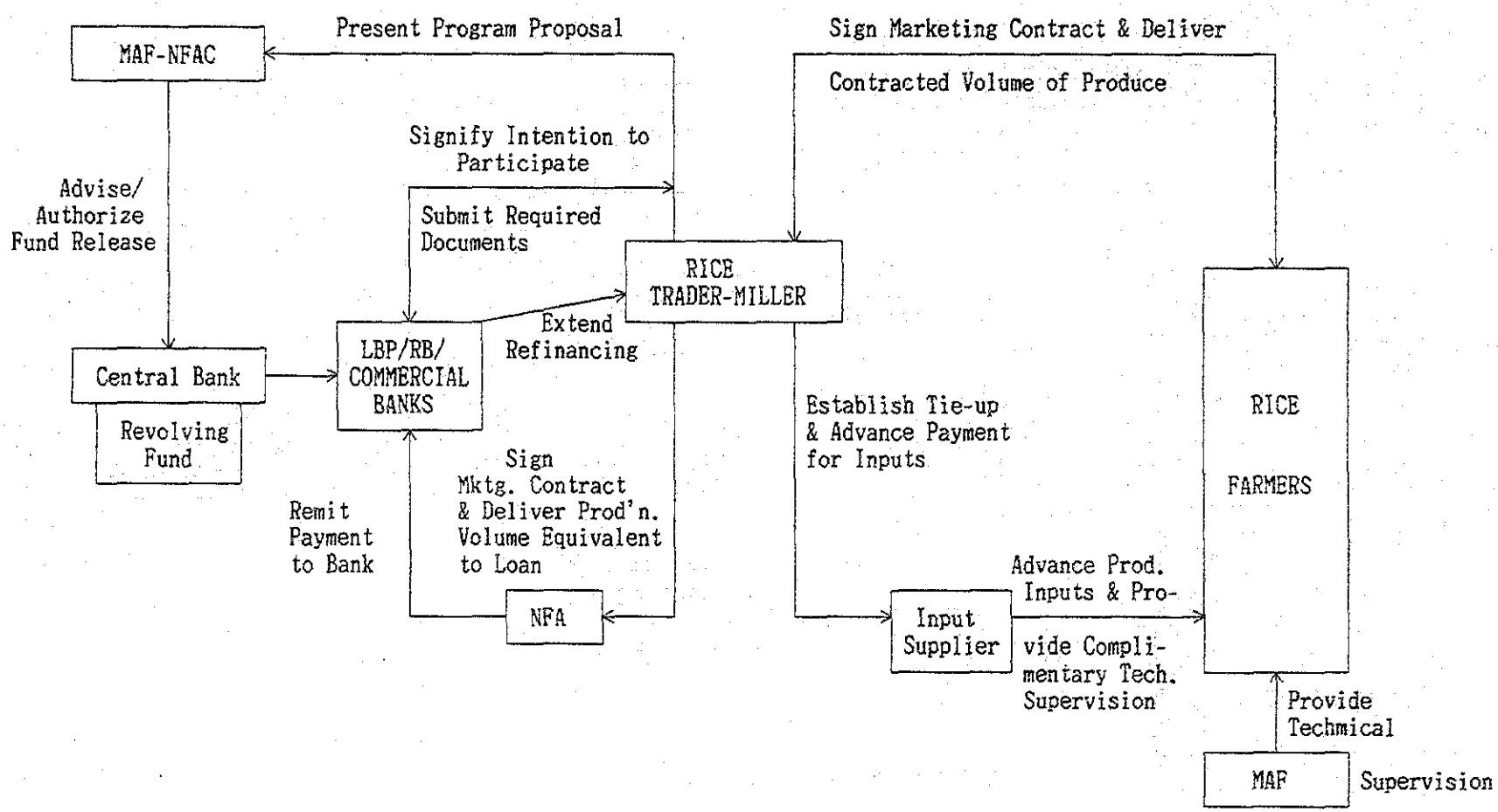
Seed	₱ 400
Fertilizer	₱1,675
Agro-chemicals	₱ 775
Crop Insurance	₱ 150
Total	₱3,000

Aside from the items mentioned above, a cash portion up to ₱800 is acceptable for land preparation and farm labor. The interest rate is 15%/year, or 5%/120 days of one cropping season.

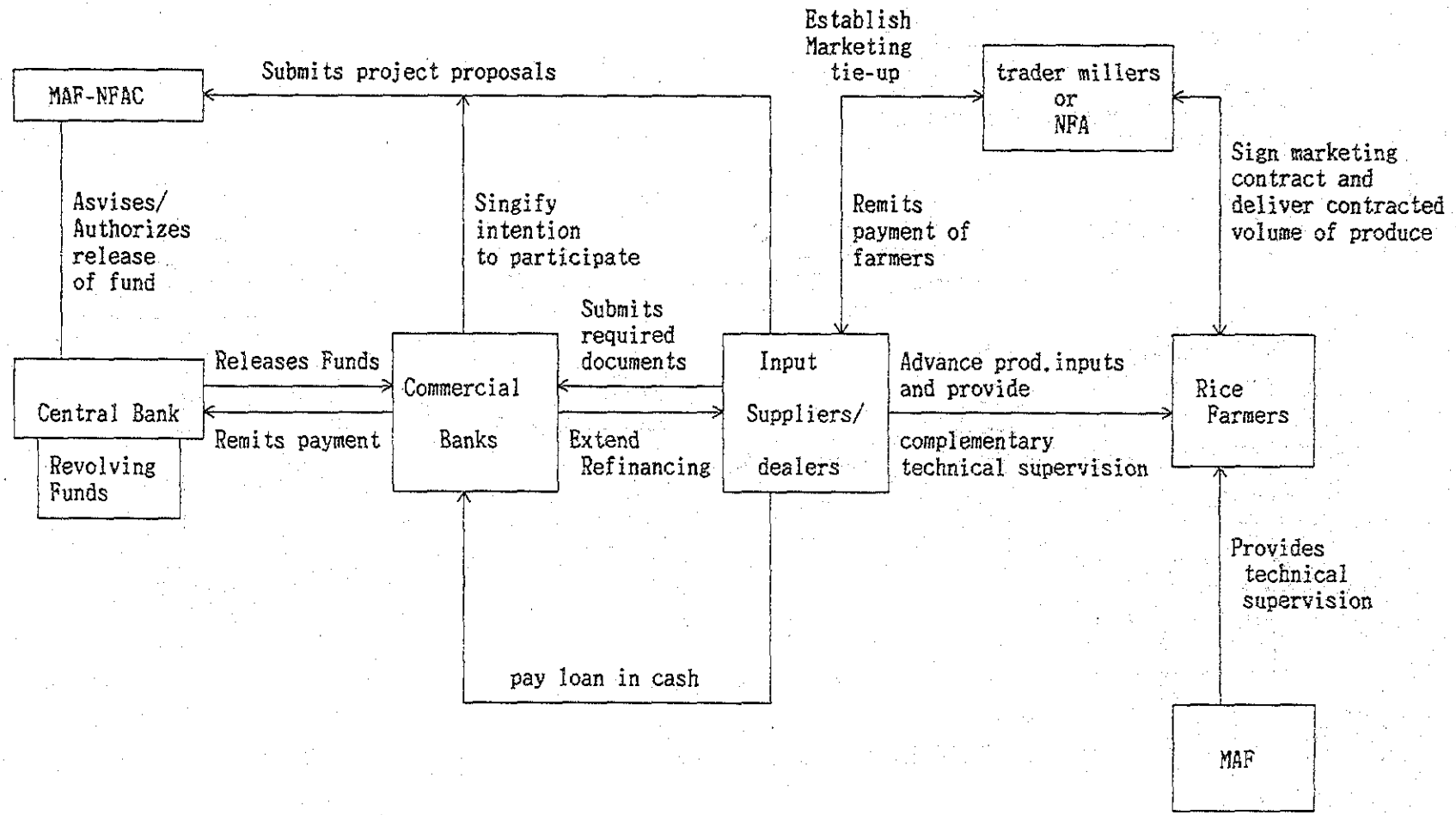
THE NFA ASSISTANCE SCHEME



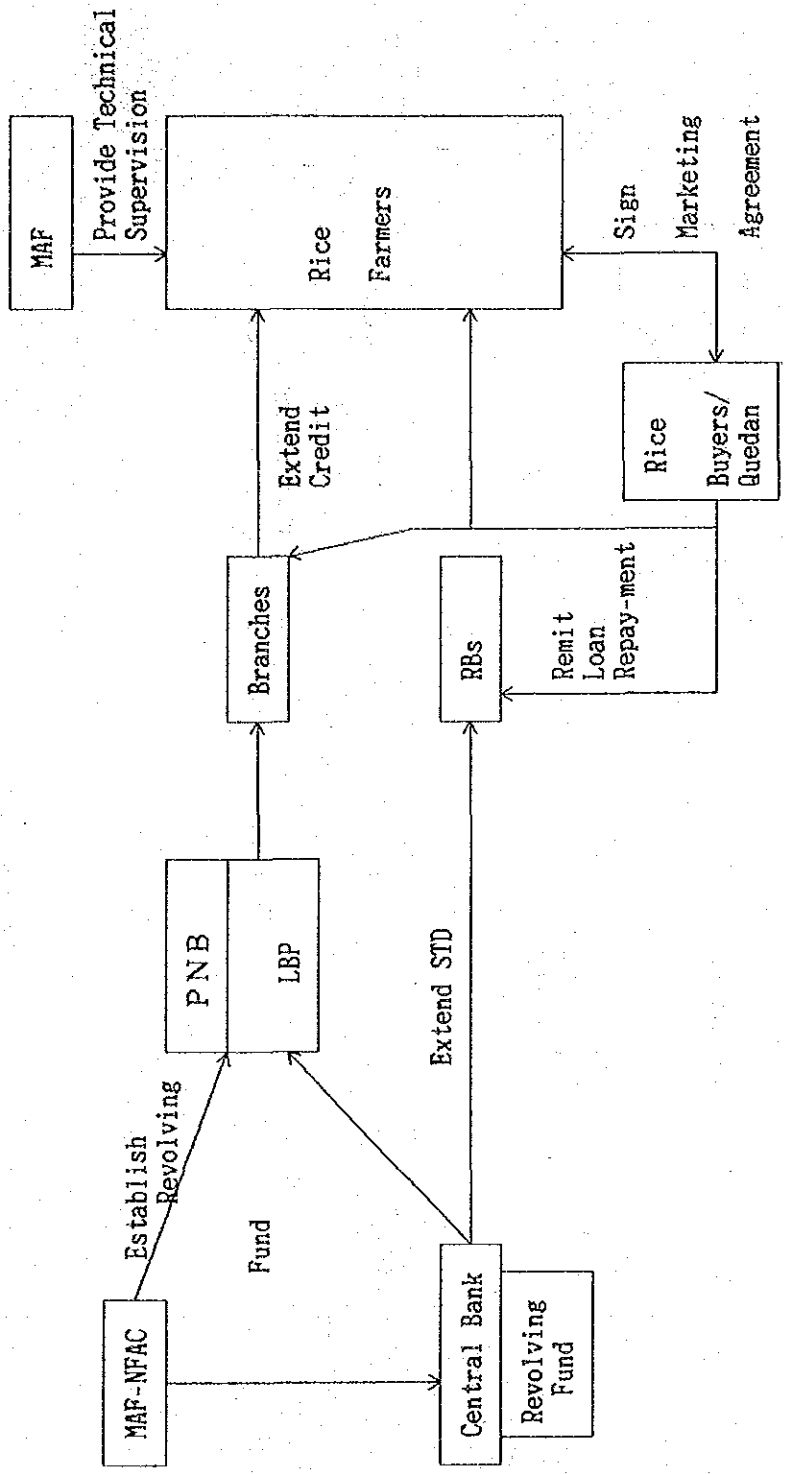
THE RICE TRADER-MILIER APPROACH



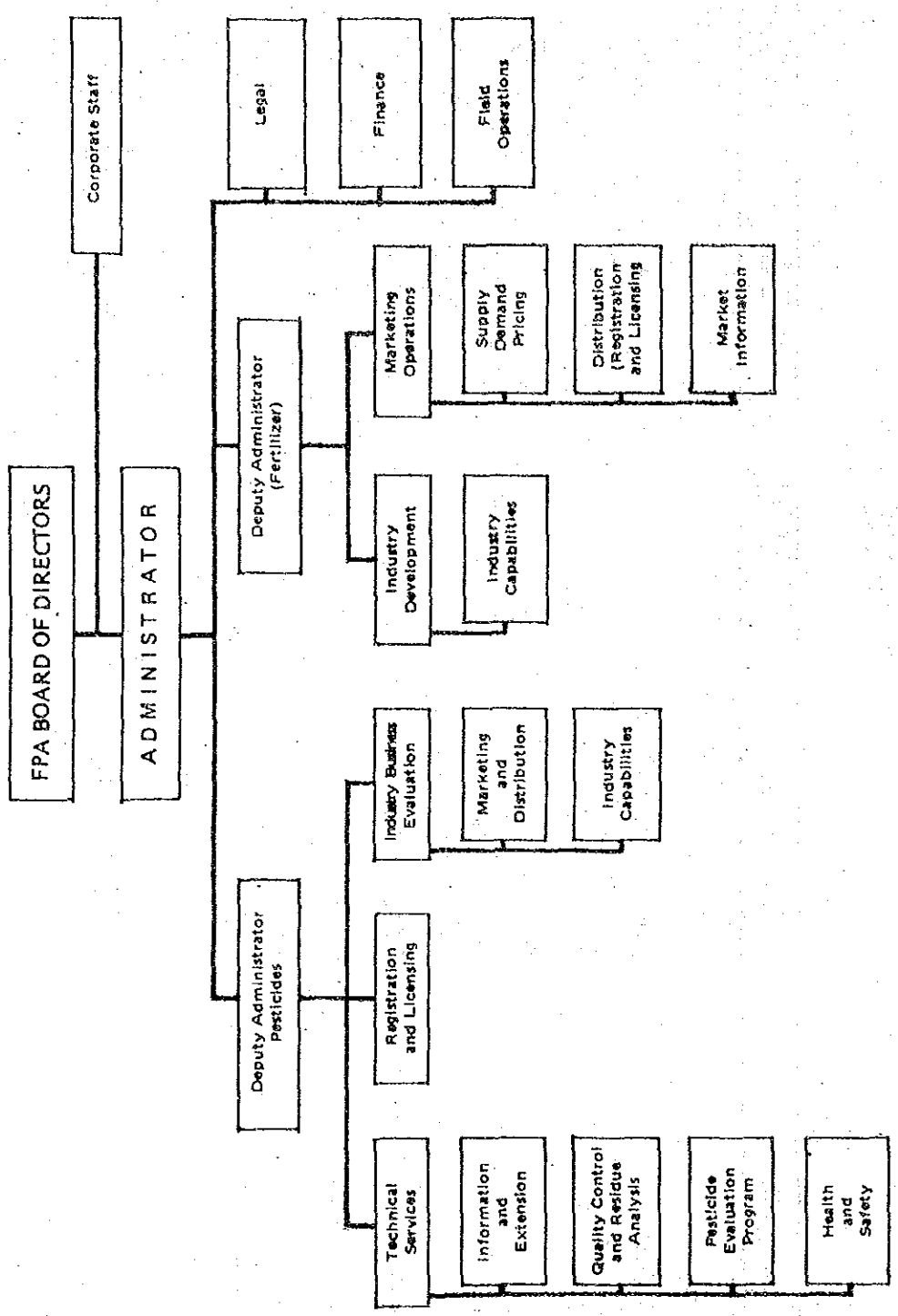
THE INPUT-SUPPLIER ASSISTANCE SCHEME



THE BANKING SYSTEN ASSISTANCE SCHEME



ORGANIZATION CHART OF THE FERTILIZER AND PESTICIDE AUTHORITY (FPA)



LIST OF RECOMMENDED INSECTICIDES FOR THE USE OF MASAGANA 99 PROGRAM 1983-84

COMMON NAME	BRAND NAME	FORMULATION % ACT. ING.	PACKING	CODE NUMBER
GRANULARS				
CARBOFURAN	FURADAN 3G	3.0 %	16.7 kg 3 kilos	P1
DIAZINON	BASUDIN 5G	5.0%	15 kg	P107
	DIANOL 5G	5.0%	10 kg	P4
	DIAGRAN 5G	5.0%	15 kg	P13
	DAZVIN 5G	5.0%	16.7 kg	P143
ENDOSULFAN	THIODAN 5G	5.0%	20.0 kg	P8
PHENTOATE + MIPC	CARBOPHEN 6G	3.0% + 3.0%	17 kg	P145
LIQUIDS				
AZINPHOS ETHYL	BIONEX	40.0%	8 oz 1 pt 1 qt	P137
	COTNION 40 EC	40.0%	1 liter 1,000 ml	P31
CARBARYL	SEVIN XL R	48.0%	500 ml 1 liter	P140

page 2

COMMON NAME	BRAND NAME	FORMULATION % ACT. ING.	PACKING	CODE NUMBER
LIQUIDS				
BPMC (BASSA)	HOPCIN 50 EC	50.0%	500 ml	P 53
			1 liter	
	BAYCARB	50.0%	500 ml	P 52
			1 liter	
	CARVIL 50 EC	50.0%	1 qt	P136
	VINDEX EC	50.0%	1 qt	P142
			1 pt	
BPMC + CHLORPYRIFOS	BRODAN EC	21.0% + 10.5%	8 oz	P 73
			1 pt	
			1 qt	
DIAZINON	BASUDIN 20 EC	20.0%	1 liter	P 20
ENDOSULFAN	THIODAN 35 EC	35.0%	500 ml	P 29
			1 liter	
	ENDOX 35 EC	35.0%	8 ounces	P144
			1 pint	
			1 qt	

COMMON NAME	BRAND NAME	FORMULATION % ACT. ING.	PACKING	CODE NO.
LIQUIDS				
MONOCROTOPHOS	AZODRIN 202 R	30.0%	1 liter	P 57
			.360 liter	
	NUVACRON 300 SCW	30.0%	1 liter	P146
PHOSPHAMIDON	DIMECRON SC	50.0%	1 liter	P 28
TRIAZOPHOS	HOSTATHION 40 EC	40.0%	500 ml	P 27
			1 liter	
MIMC	TSUMACIDE 30 EC	30.0	1 liter	P 66
WETTABLE POWDER				
CARBARYL	SEVIN 85 S	85.0%	500 grams	P 69
	TENCYL	85.0%	500 grams	P138
MIPC	ETROFOLAN WP	50.0%	500 grams	P 63
			1 kg	
	HYTOX WP	50.0%	500 grams	P 64
	MIPCIN WP	50.0%	500 grams	P 65
MINC (Propoxur)	TSUMACIDE 50 WP	50.0%	500 grams	P 66
ACEPHATE	ORTHENE SP 75	75.0%	50 gr. tin	P116
BPMC	SHELLCARB WP 40	40.0%	250 grams	P134
			500 grams	

LIST OF RECOMMENDED HERBICIDES FOR THE USE OF MASAGANA 99 RICE PROGRAM
1983-84

COMMON NAME	BRAND NAME	FORMULATION % ACT. ING.	PACKING	CODE NO.
GRANULARS				
BUTACHLOR				
	Lambast 5 G	5.0%	20 kg	H_{71}
2,4-D ETHYL ESTER	Weedtrol 5 G	3.2%	25 kg	H_4
2,4-D ISOPROYL ESTER	Hedonal	3.2%	25 kg	H_6
2,4-D ISOBUTYL ESTER	Hoechst 2,4-D	3.2%	25 kg	H_7
	Planters 2,4-D	3.2%	25 kg	H_8
	Shell 2,4-D	3.2%	25 kg	H_{10}
	Atlas 2,4-D	3.2%	25 kg	H_{43}
ISOOCTYL ESTER IBE	Plantguard			
	2,4-D IBE	3.2%	25 kg	H_9
	Agroxone G	3.2%	25 kg	H_{11}
THIOBENCARB	Saturn 5% G	5%	20 kg	
THIOBENCARB +2,4-D	Saturn D	4.0% + 2.0%	20 kg	H_{13}
PIPEROPHOS + 2,4-D	Rilof H 4.2	4.0% + 2.0%	15 kg	H_{67}
TRIFLURALIN + 2,4-D	Treflan R	1.67% + 2.13%	20 kg	H_{14}

COMMON NAME	BRAND NAME	FORMULATION % ACT. ING.	PACKING	CODE NO.
LIQUIDS				
2,4-D AMINE EC	2,4,-D Amine Hoecsht	50.0%	500 ml	H_{18}
			1 liter	
	Weedtrol 2,4-D EC	3.31% + 40.0%	1 liter	H_{20}
	2,4-D Amine 400 Planters	3.31% + 40.0%	8 oz	H_{21}
			1 pt	H_{21}
			1 qt	
	2,4-D Amine WB	4.0% + 40.0%	8 fl. oz.	
			16 fl. oz.	H_{22}
			32 fl. oz	
	2,4-D Amine Agchem	3.34% + 40.0%	1 liter	H_{31}
	Hedonal	3.34 + 40.0%	500 ml	H_{17}
2,4-D IBE	Weedtrol 2,4-D EC	3.34% + 40.0%	1 pt	H_{59}
	2,4-D IBE UCPI	3.34% + 40.0%	500 ml	H_{24}
	2,4-D Shell	3.34% + 40.0%	1 liter	H_{44}
	—		.360 liter	
	2,4-D IBE Hoechst	3.34% + 40.0%	500 ml	H_{29}
			1 liter	
	2,4-D IBE Planters	3.34% + 40.0%	8 Oz	H_{32}
			1 pt	
			1 qt	

Recommended Herbicides for 1983-84 page 3

COMMON NAME	BRAND NAME	FORMULATION % ACT. ING	PACKING	CODE NO.
LIQUIDS (cont.)				
MCPA, EC	Agroxone S	3.34% + 40.0	16 fl. oz	H_{37}
			32 fl. oz	
			8 fl	
BUTACHLOR	Lambast EC		8 oz	H_{72}
			1 pt	
			1 liter	
PIPEROPHOS + 2,4-D	Rilof H EC	70.0%	500 ml	H_{67}
			1 liter	
THIOBENCARB	Saturn 60 EC	60.0%	1 liter	H_{69}
THIOBENCARB + 2,4-D	Saturn D EC	50.0%	500 ml	H_{57}
			1 liter	
BENTAZON	Basagran	50.0%	500 ml	H_{63}
			1 liter	

/cbb*

LIST OF RECOMMENDED FUNGICIDES FOR THE USE OF MASAGANA 99 RICE PROGRAM 1983-84

COMMON NAME	BRAND NAME	FORMULATION % ACT. ING.	PACKING	CODE NO.
BENOMYL	Benlate WP	50%	100 grams	F_{14}
THIOPHANATE METHYL	Fungitox	70%	120 grams	F_{13}

LIST OF RECOMMENDED RODENTICIDES FOR THE USE OF MASAGANA 99 RICE PROGRAM 1983-84

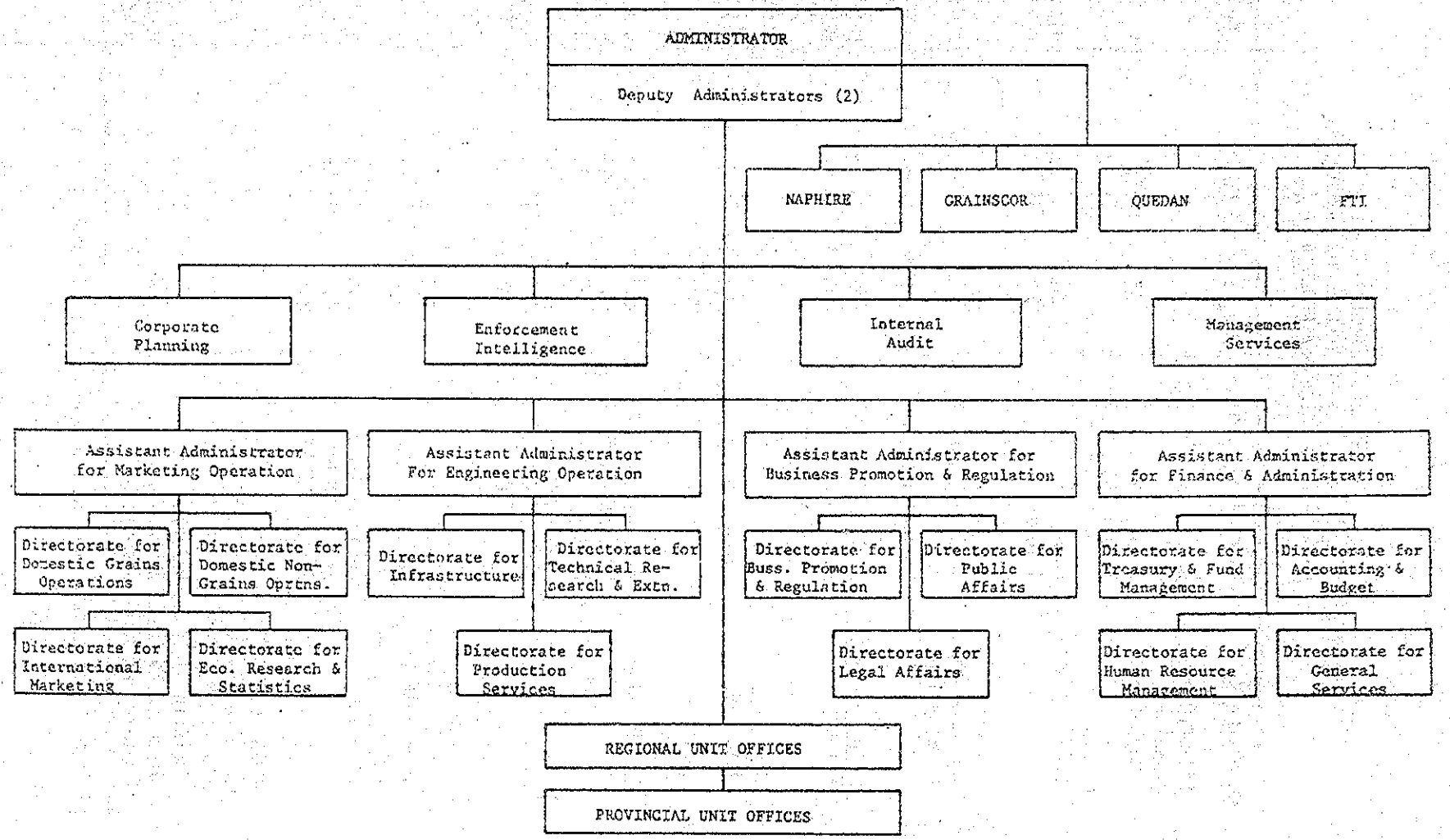
COMMON NAME	BRAND NAME	FORMULATION % ACT. ING.	PACKING	CODE NO.
WARFARIN	Ratoxin		1 kg	R_3
COUMACHLOR	Racumin 0.75		1 kg	R_9
			500 grams	
	Tomorin 1.10		500 grams	R_5
CHLOROPHACINONE (CHLORADIONE LM 91 RAVIAC)	Liphadione		50 cc	R_1
			200 cc	
			1 liter	
DIPHACINONE	Diphacin 110		1 kg	R_4
	Racinon		250 grams	R_7

UPDATED LIST OF RECOMMENDED PESTICEDES FOR THE USE IN THE EXPANDED YELLOW CORN PRODUCTION ASSISTANCE & MAISAGANA PROGRAM 1985

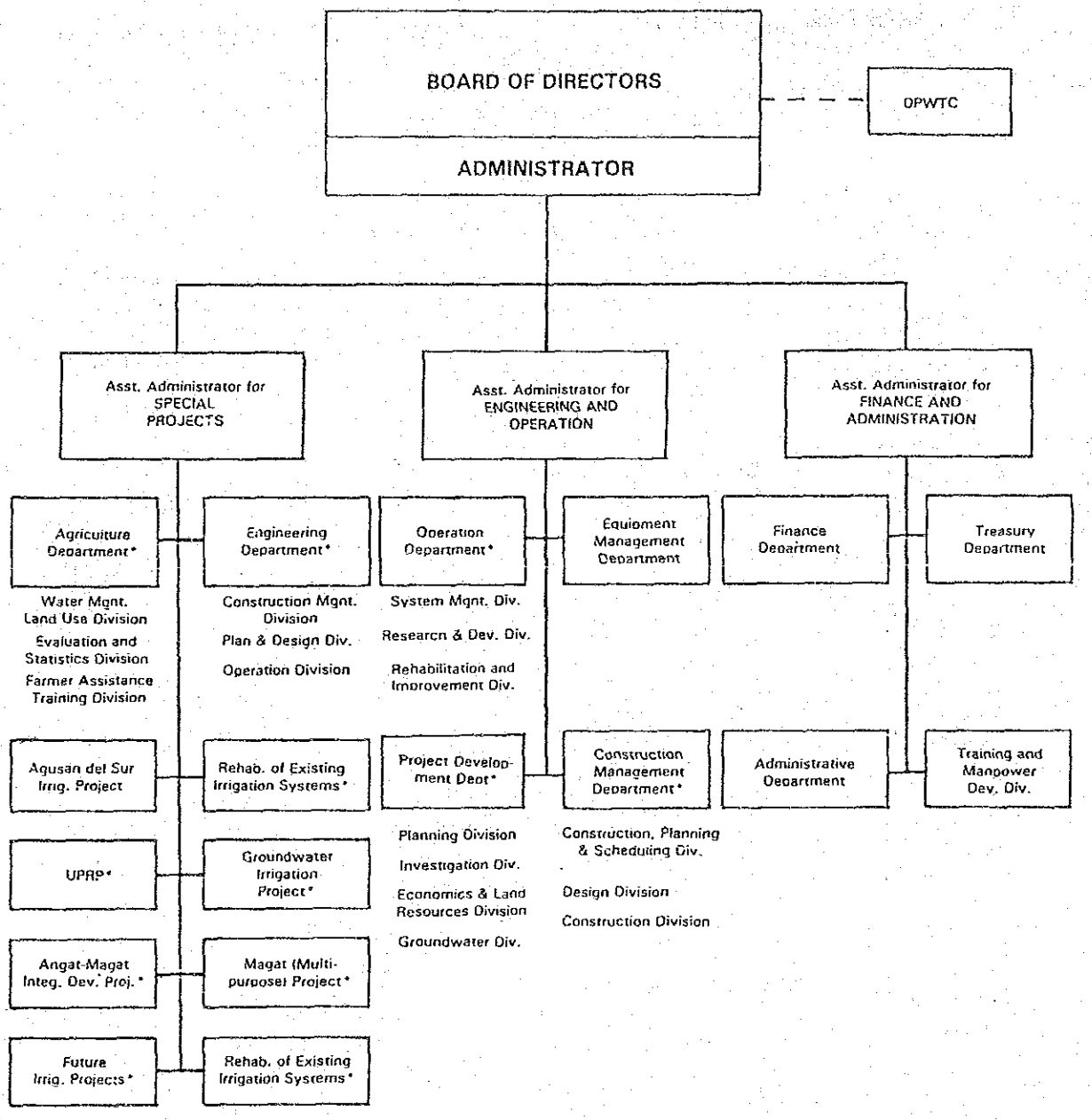
COMMON NAME	BRAND/FORMULATION	% a. i.	PACKING	CODE
A. INSECTICIDE:				
Granular				
Carbofuran	Furadan 3G	3%	16.7kg	P 1
-	Thimet 10G	-	1 kg	-
Liquid				
Endosulfan	Endox 35EC	35%	1 qt	P144
	Thiodan 35EC	35%	1 lt	P 29
	WB Endosulfan	35%	not available	P103
Methomyl	Lannate L	20%	1 lt	P 79
Monocrotophos	Azodrin 202-R	30%	1 lt	P 57
Chlorpyrifos +BPMC	Brodan 31.5 EC	21%+10.5%	1 qt	P 73
Wettable Powder				
Carbaryl	Sevin 85S	85%	1 kg	P 59
	Vetox 50 WP	50%	500 g	P 20
B. FUNGICIDE:				
Metalaxyl	Apron 35SD 1/	35%	1 kg	F 28
C. HERBICIDES:				
Liquid				
2,4-D Amine	Hedonal 400S	40%	1 lt	H 17
	Hoechst 2,4-D	50%	1 lt	H 18
	Miracle 2,4-D	40%	1 lt	H 31
	Planters 2,4-D	40%	1 qt	H 21
	Shell 2,4-D	40%	1 qt	H 74
	WB 2,4-D	40%	1 qt	H 22
MCPA (Methyl-chlorophenoxy Acetic Acid)	Agroxone S	40%	1 qt	H 37
Pendimethalin	Herbadox 330E	31.7%	1 qt	H 73
Wettable Powder				
Atrazine	Gesaprin 80 WP	80%	1 kg	H 49
	Premox 80 WP	80%	1 kg	H 50
	Atranex 80 WP	80%	1 kg	H 76
D. RODENTICIDES:				
Anticoagulant (Chronic Type)				
Warfarin	Ratoxin	1%	1 kg	R 3
Diphacinone	Racinon	2%	250 g	R 4
Coumatetralyl	Racumin	0.75%	1 kg	R 9

1/ Seed Treatment to provide protection against downy milldew.

NATIONAL FOOD AUTHORITY
1982 ORGANIZATION STRUCTURE



NATIONAL IRRIGATION ADMINISTRATION



ANNEX-B

TECHNICAL SPECIFICATION

1. FERTILIZER
2. AGROCHEMICALS
3. AGRICULTURAL MACHINARY

FERTILIZER

Specifications

Name of Commodity	Packing	Quantity (MT)
1. Urea (45% Nitrogen)	50kg PP woven bag with one ply PE inner bag	7,000
2. Mixed Fertilizer (14-14-14)	- do -	7,300
3. Conpound Fertilizer (16-20-0)	- do -	3,000
4. Ammonium Chloride 25% Nitrogen	- do -	6,000

AGRO-CHEMICALS (1)

Specifications

Name of Commodity	Minimum Purity (%)	Packing	Quantity (kg)
1. 2-Isoprophyl-phenyl-N Methyl carbamate	98	130kg net in iron drum	40,040
2. 2-Sec-Butryl phenyl-N - Nethylcarbamate	98	130kg net in iron drum	20,000
3. 0.0-Diethyl - 0(2-isoproil 6-methyl-4-pyrimidinyl) phesphorothioate	96	200kg net in iron drum	50,000
4. Fenitrothien Technical Grade 0.0 Dementhyl 0-4 Nitro-M-Tolyl Phosphorothioate	95	250kg net in iron drum	30,000
5. Fenvalerate Technical (RS)-Alpha-cyano-3 Phenoxybenzyl, (RS)-2-(4-Chlorophenyl)-3-Methylbutyrate	92	200kg net in iron drum	3,000kg
6. Phenthoate Technical Grade 0.0-Dimenthyl, S-(X-(ethoxy carbonyl benzyl)) Phosphorothiologhionate	92%	200kg net in iron drum	50,000
7. Dimethyl (2.2.2-trichloro -1-hydroxyethyl) phosphate	95%	50kg/bag	2,300
8. O-Ethyl-S,S-diphenyl phospolodithioate	50 EC (Formulated)	200ℓ/Drum	4,000
9. S-(4-cholorobenzyl)-N, N-diethylthiolcarbanate	93	220kg net in iron drum	59,400

AGRO-CHEMICALS (2)

Specifications

Name of Commodity	Minimum Purity (%)	Packing	Quantity (kg)
10. Sodium Monochloroacetate	98	20kg net in Inner lined PP woven bag	30,000
11. 4-Hydroxy-3-1,2,3,4-Tetrahydro-1-Napthyl) Coumarin	10 (Pre-mixed)	50-kilo-drum	1,000
12. 4-Hydroxy-3-(1,2,3,4-Tetrahydro-1-Napthyl) Coumarin	0.75 AI (formulated)	50-kilo-drum	10,000

NIA-1

Item No. 1 BACKHOE: WHEEL TRACTOR

Quantity Required: 32 units

Specifications

Description

Four wheel drive type, rubber tyred loader equipped with heavy duty general purpose type front bucket with changeable teeth and rear backhoe attachment, driven by a diesel engine

Performance

1. Loader capacity:
   SAE heaped 0.5cm^3 or more
2. Loader lift load max. height:
   not less than 1,600kg
3. Loader dumping clearance, max. height and 45 deg. dump angle:
   not less than 800mm
4. Loader reach at max. height and 45 deg. dump angle:
   not less than 800mm
5. Operating weight:
   not less than 5,000kg
6. Static tipping load:
   not less than 2,500kg at full turn
7. Breakout force:
   not less than 3,500kg
8. Turning radius:
   not more than 4,500mm
   (outside corner of bucket)

Backhoe

1. Bucket capacity:
   SAE heaped 0.13m^3 or more
2. Max. digging depth:
   not less than 3,00mm
3. Max. reach from pivot point not less than 4,000mm
4. Max. dump clearance:
   not less than 2,300mm
5. Swing arc:
   not less than 180deg.

Specifications

Engine

1. Type:
   Water cooled, 4-cycle, fuel direct injection type diesel engine
2. No. of cylinders:
   4 cylinders
3. Displacement:
   not less than 2,900cc
4. SAE flywheel horsepower:
   not less than 50HP at rated RPM
5. Max. torque:
   not less than 18kg-m at rated RPM
6. Fuel tank capacity:
   not less than 60 lit.
7. Lubrication system:
   Lubrication oil filter:
   Full-flow repreaceable paper element filter
   Crankcase oil capacity:
   Approx. 7 lit.
8. Cooling system:
   Forced circulation by centrifugal water pump with suction or exhaust type fan
9. Air cleaner:
   Dry type
10. Starting method:
    24V, electric starting
11. Alternator:
    24V, not less than 20A
12. Battery:
    24V, not less than 65Ah

Torque converter

Three-element, single-stage, single or 2 phase type

Specifications

Transmission

Power shift with torque converter,
all wheel drive type.
At least 3 forward and 1 reverse
speed.
Driving speed:
not less the 30.0km/h at top gear

Tranamission gear

1. Differential gear type
   Straight bevel gear type
2. Final reduction gear:
   Planetary gear type

Axles

Drive system:
Four wheel drive type

Wheels

1. Service brake:
   Hydraulic type onn 4 wheels,
   wet disc type
2. Parking brake:
   Mechanical internal or dic type
   on dirve shaft

Steering

Frame articulating full hydraulic
power steering

Hydraulic system

1. Type:
   Gear pump
2. Capacity:
   not less than 70 lit./min. at
   rated RPM
3. Relief valuve opening pressure:
   not less than 170kg/cm^2

Hydraulic control loader

Control position:
Boom: raise, hold, lower and
float

Specifications

Canopy and Seat

Canopy:
sun and rain protection
seat:
Adjustable, with back rest and arm rests

Others

Shall be equipped with necessary accessories

Spare parts

Manufacturer's recommended spare pats of 10% of total machinery cost

NIA-1

Item No. 2 TRACTOR DOZER, 56-85HP

Quantity Required: 6 units

Specifications

Description

Power shift crawler type tractor driven by not less than 56 flywheel horse power diesel-engine, equipped with hydraulic straight or angle tilting dozer and hydraulic control unit

Performance

Max. travel speed
Forward: not less than 6.5km/hr
Reverse: not less than 7.0km/hr
Max. drawbar pull:
not less than 8.5 ton at lowest gear used
Operating weight:
not less than 6 ton (with dozer and complete accessories)

Engine

1. Type:
   Water cooled, 4-cycle, direct injection type, diesel engine
2. Dieplacement:
   Not less 4,300cc
3. No. of cylinders:
   Not less than 4
4. SAE flywheel horsepower:
   Not less than 56HP at raed RPM
5. Max. torque:
   Not less than 25kg.m at rated PRM
6. Fuel tank capacity:
   Not less than 110 lit.
7. Lubrication system:
   Gear pump, forced lubrication, full-flow filter type
   Crankcase oil capacity;
   Not less than 12 lit.
8. Cooling system:
   Forced suction or exhaust fan type Coolant capacity;
   Not less than 20 lit.

Specifications

9. Air cleaner:
   Dry type
10 Starting method:
   12V or 24V electric starting motor
11. Alternator:
   12V ro 24V, Not less than 25A
   12V or 24V, Not less than 120Ah

Transmission

Torque converter or damper with power sift type with 3 forward and 3 reverse speeds

Steering system

Steering clutch:
hydraulically actuated, multiple disc type
Steering brake:
wet, contracting bank type

Final drive

Spur gear, single reduction type

Under carriage

Suspension:
oscillation or rigid type
Carrier roller:
1 pcs on each side
Track gauge:
not less than 1,800mm
shoe type:
assembled, single grouser
Shoe width:
not less than 300mm
Lubrication:
sealed and lubricated track

Hydaulic control system

Pump capacity:
not less than 55 litres/min. at rated RPM
Relief valve opening pressure:
not less than 170kg/cm^2
Hydraulic oil tank capacty:
not less than 50 lit.

Specifications

Dozer

Type:
hydraulic controlled, hydraulic angling and tilting, reversible cutting edge end bits, straight or angle type
Dinmension:
Width: not less than 2,400mm
Hight: not less than 740mm
Max. lift above ground:
not less than 860mm
Max. digging below ground:
not less than 370mm
Max. tilt adjustment:
not less than 350mm

Canopy and Seat

Canopy:
sun and rain protection seat:
adjustable, with back rest and arm rest

Others

Shall be equipped with necessary accessories

Spare parts

Mafacturer's recommended spare parts of 10% total machinery cost

NIA-1

Item No. 3 GRADER 60-75HP

Quantity Required: 10 units

Specifications

Description
Articulated motor grader with six wheels, scarifier, leaning front wheels and mouldboard.

Performance
Speed: Maximum travel speed not less than 30km/h
Turning radius: less than 9m Max.
drawbar pull: not less than 4,200kg
Operating weight:
not less than 7,400kg
Front wheel loading:
not less than 2,200kg
Rear wheel loading:
not less than 5,200kg
Gradeability:
not less than 20deg.

Engine
1. Type:
   Water cooled, 4-cycle, direct direct fuel injection, diesel engine
2. No. of cylinders:
   not les than 4
3. Flywehhl horse power:
   approx. 75HP at rated RPM
4. Max. torque:
   not less than 25kg.m at rated RMP
5. Total pision displacement:
   approx. 4,400cc
6. Fuel tank capacity:
   not less than 90 lit.
7. Lubrication system:
   Lubrication method:
   Gear pum forced lubrication
   Crank oil capacity:
   approx. 15 lit.
8. Cooling system:
   Forced circulation by water pump with suction or exhaust fan type

Specifications

9. Air cleaner:
   Dry type
10. Starting method:
   24V electric starting motor
11. Alternator:
   24V, not less than 30A
12. Battery:
   24V, not less than 100Ah

Transmission

Not less than 4 forward and 4 reserve speeds, 1st or 2nd constant mesh and the others synchromesh

Cluch

Dry, double disc type

Steering

Full hydraulic power

Final drive

Spiral level gear
Tandem, roller chain drive

Brake

Service:
Hydraulically actuated on rear wheels, internal expanding type

Parking:
Mechanical, internal expanding type, actuated on transmission output shaft

Mouldboard

Hydroaulic controlled, box-section, reinforced, reversible cutting edge type
Blade dimension:
   Length: approx. 3,000mm
   Height: approx. 500mm
   Thickness: not less than 12mm
Lift above ground:
not less than 320mm

Specifications

Lift above ground:
not less than 320mm
Drop below ground:
not less than 270mm
Max. shoulder reach:
Left: not less than 1,100mm
Right: not less than 1,100mm
Turning angle: 360 dog.

Scarifer

Hydraulic controlled
No. of teeth: not less than 6
Digging width: not less than 950mm
Max. digging depth: not less than 200mm
Max. lift above ground: not less than 240mm

Hydraulic system

Gear type pump
Pump capacity: not less than 80 lit.
Relief valve opening pressure:
not less than 100kg/cm

Frame

Box-section, steel plate welded construction frame shall be designed to withstand the stress or ordinary operations

Tyres

To be pneumatic lug type tread with tubes
Size and ply rating:
Front: 9.00-20-10PR (min.)
Rear: 10.00-20-10PR (min.)

Axles

Front:
Hydraulic leaning
Max. leaning angle:
not less than 18 deg. left or right
Center ground clearance:
not less than 420mm

Specifications

Canopy and Seat

Canopy:
sun and rain protection, safety glass windhsield with wipers

Seat:
adjustable foam rubber seat with back rest and arm rests

Others

Shall be equipped with necessary accessories

Spare parts

Manufacturer's recommended spare part of 10% of total machinery cost

NFA-1

Item No. A-1	PORTABLE PRE-CLEANER
Quantity Required:	18 units

1. Type:
   Mobile paddy cleaner driven by diesel generator, with destoner.

2. Function:
   To remove inpurities such as straw threads, unmatured rice, stones, sands, clay, dust and others from paddy havested.

3. Capacity:
   Total capacity:
   more than 1 ton long rice paddy per hour at 26% of moisture content.

4. Construction:
   1) It shall be mainly steel construction for long durability
   2) It shall consist of grid remover for large size impurities, bucket elevator, aspirator, vibrating sieve, destoner, 5.5kW 3-phase diesel generator with more than 9.5HP diesel engine, base with 3 pneumatic tired wheels for all equipment mounted and blower for light impurities.
   3) All equipment shall be driven by 5.5kW diesel generator.
   4) Light impurities removed shall be discharged by blower to a distance of 10m or more.
   5) Impurities removed by sieve shall be discharged automatically from impurity outlet.

6) Stone and sand removed by destoner shall be discharged from stone outlet.

7) Diesel generator shall be removable and driven by more than 9.5HP diesel engine.

8) Base for all equipment shall have more than 3 pneumatic tired wheels which shall be steered by drawbar.

9) Overall dimension except drawbar shall not be more than 3.5m in height, 2.0m in width and 3.7m in length.

10) Drawbar shall be joined to 4 wheel tractor or other tracting vehicle.

11) Spare parts
Manufacturer's recommended spare parts of 10% of total machinery cost

NFA-1

Item No. A-2	PORTABLE DRYER
Quantity Required:	18 units

1. Type:
   Recirculation vertical box type with kerosene furnace and air blow fan.

2. Function:
   To dry wet paddy evenly from 26% to 14% of paddy moisture content within 8 hours with minimum breakage.

3. Capacity:
   Total capacity:
   More than 2 tons holding of long rice paddy with 26% moisture content per batch.

4. Construction

   1) It shall be mainly steel construction for long durability.

   2) It shall consist of mainly tempering portion, drying portion, intermittent paddy discharge devices for recirculating and unloading, recirculating devices, hot air generating furnace, air blow and exhaust fan with dust duct, necessary electric operating control system and fire extinguisher.

   3) It shall be utilized for paddy with maximum 30% of moisture content.

   4) Construction assemblage/disassemblage shall be carried out with minimal effort and without sophisticated tools and machinery.

5) Fuel supply devices shall be controled to adjust the flow rate of kerosene, and shall not fuel automatically when accidents such as sudden fire ignition, extinction, abnormal temperature rise, earthquakes etc. occur.

6) Heated air temperature shall be control manually or automatically at desired position.

7) Drying period shall be set at desired position with drying operation to stop automatically when drying period has been completed.

8) Bucket for bucket elevator shall be nylon.

9) Screw for screw conveyor, if existing, shall be reinforced on the face, and easily exchangable.

10) Inside of the dryer shall be cleaned easily without disassemblage.

11) All part of dryer shall be driven by electric motor(s) of 3 phase 220V.

12) Spare parts
Manufacturer's recommended spare parts of 10% of total machinery cost

NFA-1

Item No. A-3	PORTABLE RICE-MILL
Quantity Required:	9 units

1. Type:
Portable one pass friction type rice-mill

2. Function:
To hull husk of dried paddy and whiten brown rice.

3. Capacity:
More than 1 ton of dried long rice paddy per hour.

4. Construction:
   1) It shall be mainly steel construction for long durability.
   2) It shall be composed of recieving devices with grid impurity remover and magnetic ilon collecter, one pass type friction ricemill(s) with rubber roll huller(s), and more than 18HP diesel engine and machine base with removable wheel.
   3) Recieving devices shall be bucket elevator to load dried paddy to rice-mill set(s), shall have grid impurity remover and magnetic ilon collecter on the bucket elevator hopper or rice-mill hopper. Bucket shall be nylon.
   4) One pass rice-mill shall be one or two set(s) of friction type coupled with more than 3 inches of rubber roll huller(s).
   5) Husk blowing fan of huller shall have a capacity to blow off husk to a distance of 5m or more with ducting from the huller.

6) Rubber roll of huller shall be hard type for long rice and easily exchangable.

7) The clearance of rubber roll and pressure of milling chamber shall be adjusted by manual control.

8) Milling chamber shall be colled by air injection to remove bran easily.

9) Rice bran shall be discharged from bran outlet and be collected in bags directly.

10) All components shall be driven by one unit of more than 19HP diesel engine.

11) All components shall be mounted on the mono-construction base which has a draw bar and 4 removable pneumatic tired wheels able to be transferred from site to site.

12) Spare parts
Manufacturer's recommended spare parts of 10% of total machinery cost

NFA-1

Item No. A-4	STATIONARY RICE-MILL
Quantity Required:	9 units

1. Type:
   Able to be disassembled stationary dual pass type friction and/or abrasive rice-mill unit.

2. Function:
   To produce higher quality milled rice from dried long rice paddy.

3. Capactiy:
   More than 1 ton dried long rice paddy per hour.

4. Construction:
   1) It shall be mainly steel construction for long durability.
   2) It shall be composed of receiving bucket elevator(s), recleaner with destoner, paddy huller with paddy separator, dual pass rice mill of the combination of one friction with one abrasive or both friction, rice bran collecting system, fine broken rice separator, counter shaft for driving all component and machine base(s).
   3) Bucket for bucket elevator shall be nylon.
   4) Precleaner shall consist of aspiration and vibrating sieve, The impurities aspirated shall be discharged 10m distance or more with duct.
      The impurities separated by sieve shall be discharged automatically from impurity outlet.

5) Destoner shall be coupled with precleaner. Stone and sand shall be separated by perforated tray with aeration of destoner, and discharged automatically from stone outlet.

6) Paddy huller with paddy separator shall be more than 4 inches of rubber roll, mounted type, The clearance of rubber rolls, inclination of separating trays and partition plates shall be adjusted manually automatically. Rice husk aspirated shall be discharged through ducting of 10m or more. Brown rice separated shall be loaded to rice-mill hopper automatically.

7) Rice-mill shall be dual pass type of the combination of one friction with one abrasive or both friction polishes. Both stages of mill shall be air injected to cool milling chamber. Pressure of milling chamber shall be adjusted manually. Rice bran shall be collected through a rice bran hopper and then passed through to fine broken rice separator.

8) Fine broken rice separator shall be located between rice bran hopper of rice polisher and rice bran suction fan. Fine broken rice shall be separated by method of trapping the air flow for rice bran suction fan, and be discharged automatically from broken rice outlet.

9) Rice collecting system shall be composed of rice bran suction fan and cyclon.

10) Rice bran suction fan shall be located between fine broken rice separator and cyclon, with all parts duarable and easily exchangable.

11) The cyclon shall be made of steel with stand for easy bagging of bran.

12) All components shall be driven by counter shaft operated by diesel engine or electric motor provided by user.

13) All components shall be mounted or steel made base of mono or separated construction.

14) All components shall be dismountable for transfering from site to site without any canibalizing of each component.

15) Spare parts
Manufacturer's recommended spare parts of 10% of total machinery cost

NFA-1

Item No. A-5	PORTABLE GRAIN WAREHOUSE
Quantity Required:	18 units

1. Type:
   Gable or semi-circle roof type steel warehouse.

2. Function:
   To store dried paddy in sacks for maximum 6 months period without moisture damage.

3. Capactiy:
   250MT of dried paddy in sacks with less than 45% of loading ratio.

4. Construction:

   1) It shall be erected dismantled/erected with minimal skill and labor required. minimum tools, and without serious damage to parts.

   2) It shall be composed of sectional intermediate units and gable wall units for both ends.

   3) The intermediate unit shall be composed of at maximum, 4 main parts of two pieces each of roof and wall.

   4) The gable wall units shall be composed of at maximum, 5 main parts of two pieces each for roof and wall, and a gable wall with two hanging slide doors.

   5) Each main roof unit, wall and door shall be galvanized, panel, prepainted and ribbed steel sheet on the frame of lipped light gauge steel.

6) Each part of each unit shall not be more than 160kg in weight, and not be larger than 5m x 2m x 0.5m in length; width and thickness.

7) Each unit shall be jointed by minimum number of galvanized bolts and nuts with other necessary connectors.

8) Ribbed steel shall be fixed to the frame in a manner that the rib-line runs in the direction from ridge to floor.

9) Ribbed steel shall be overlapped at least one rib on the joint part of unit frame.

10) One half of intermediate unit shall have approximately $1m^2$ of skylite and steel louver with vermin-proof wire grid.

11) More than 4 units of ridge ventilator which shall be operated under natural wind power, shall be installed.
The diameter shall be more than 40cm.

12) Slide doors shall be locked at closing time.

13) The letters "PR-JAPAN FOOD INCREASING PROJECT" shall be written in blue color on both sides of wall, Each letter shall be larger than 70cm x 70cm in size.

The building shall be designed under the following conditions.

a) Wind pressure: 146.3kg/m^2 (Min.)

b) Seismic Coefficient: K=0.1

c) Structural calculation:

Design Standard For Steel

Structure of Japan.

14) Lipped light gauge steel for frame shall be as follows.

a) All primary lipped light gauge steel shall be shop prefabricated. It shall meet JIS G 3101 SS41 and/or JIS G 3350 SSC 41.
Mild steel bolts and nuts for jointing shall be in accordance with JIS B1180.

b) Shop-painting:
Surface preparation shall be done by hand tool cleaning to JASS General Treatment Class-4. Cone coat of zinc chromate red primer shall be applied to all lipped light gauge steel. One coat of oil type finishing paint in cream white color shall be shop applied to all lipped light gauge steel.

15) Ribbed steel sheets shall be thicker than 0.5mm, and be galvanized in minimum 275g zinc and shall be prepainted to meet to JIS G3312, SCG2AB. The exterior surface shall be coated with one layer each of baked epoxyester undercoat and baked silicon polyester paint. The depth of rib shall be deeper than 37mm at higher ridge and 4.5mm at lower ridge.

16) The material for skylight shall be glass or transparent plastic able to resist tropical weather conditions.

17) The hanger slide doors on the gable walls shall be treated the same as other main unit panels, comprising 2 pieces on both sides. The size of each door shall be approximately 3.6m x 1.8m.

18) Tripod with 2 pulleyes
Function:
To hang up units for warehouse installation
Construction:
Steel pipes with 2 pulleyes and ropes
Hight:
1.5m heigher than ridge of warehouse

20) Spare Bolts and Nuts
1 full set of spare bolts and nuts which are used for erection of warehouse

NFA-1

Item No. B-1	LABORATORY TESTING HUSKER
Quantity Required:	38 units

Specifications

Description

Equipped with aspirator and cyclone for separating and collecting husked rice, husks and immature paddy, rubber roll type, laboratory model husker

Husking capacity

Approx. 50kg/h (on paddy)

Dimensions

Overall length: approx. 720mm
Overall width: approx. 320mm
Overall height: approx. 730mm

Rubber roll size

Approx. dia. 100mm x 40mm

Motor

250W or more AC 220V, 1ph

NFA-1

Item No. B-2	LABORATORY TESTING MILL
Quantity Required:	38 units

Specifications

Description

Equipped with milled rice collecting box, bran collecting box, abrasive roller for popular rice variety in Philippine and time switch for control of Whitening time, laboratory model mill

Input Capacity

Not less than 150kg/one time

Dimentions

Overall length: approx. 560mm
Overall width: approx. 360mm
Overall height: approx. 400mm

Motor

400W, AC 220V, 1ph
Equipped with changeable revolution speed by pulley or gear

NFA-1

Item No. B-3	DOUBLE BEAM BALANCE
Quantity Required:	45 units

Specifications

Description

Equipped with single top pan,
double beam carrying type balance

Performance

Weighing capacity: 200g
Measuring accuracy: 50mg

Dimentions

Overall length: approx. 400mm
Overall width: approx. 130mm
Overall height: approx. 200mm

NFA-1

Item No. B-4	TEICHNESS GRADER
Quantity Required:	38 units

Specifications

Description

Equipped with hexagonal screen for popular rice variety in Philippine, thichness grader

Input Capacity

600g/one time

Dimentions

Overall length: approx. 470mm
Overall width: approx. 390mm
Overall height: approx. 700mm

Motor

100W, AC 220V, 1ph

NFA-1

Item No. B-5	INFRARED MOISTURE METER
Quantity Required:	3 units

Specifications

Description

Equipped with measuring moisture content of rice and other grains, consists of a balance and an infrared lamp, moisture meter

Performance

Measuring range: 0 to 100%
Accuracy: ± 0.1%
Scale range: 0 to 20%
Graduation: 0.2%
Sample weight: 5g

Dimentions

Overall length: approx. 240mm
Overall width: approx. 120mm
Overall height: approx. dia. 330mm
10mm depth

Infrared lamp

185W, AC 220V, 1ph

Accessories

Rice crasher and necesary accessories

JICA