ANNEX III. PROJECT DOCUMENT

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REPUBLIC OF THE PHILIPPINES
THE PROJECT ON THE DEVELOPMENT AND PROMOTION OF
LOCATION-SPECIFIC INTEGRATED HIGH-YIELDING RICE AND
RICE-BASED TECHNOLOGIES

PROJECT DOCUMENT

1. INTRODUCTION

Rice is the most essential food in the Philippines for more than 80% of the population of the country, and the annual consumption per capita is more than that of Japan. However, from the viewpoint of possible shortage of rice by the increase of demand corresponding population increase in near future, necessity of variety improvement, mechanization as well as establishment of farming system has been required. To respond to such necessity, JICA has extended assistance for more than 10 years to the Philippine Rice Research Institute (PhilRice) which was established in 1985 by Executive Order through Grant-aid (1989 to 1991) and Technical Cooperation Projects, TCP1 (1992 to 1997) to improve research capability of PhilRice, and TCP2 (1997 to 2002) to develop farming technology mainly for the small scale rice farmers. As a result of TCP1 and TCP2, the technology on rice production in PhilRice has been remarkably improved. However, productivity in farm is still low at 3.19 ton/ha in national average (paddy). Under such circumstance, PhilRice is expected to develop and extend appropriate suitable input and location-specific technology packages in the field level which can correspond to various natural conditions (such as climate, soil and farming practice) and acceptable by farmers to utilize its advanced research capability to increase rice production in the Philippines.

To achieve such objective, TCP3 was proposed to the Government of Japan, especially in the aspects of the establishment of suitable input and location-specific technology packages to be introduced to farmers in different natural and agronomic conditions, and enhancement of technical support system to farmers. The request for TCP3 was made in 2002, followed by the dispatch of the First Preparatory Study Mission from JICA (September 2003) for the agreement of basic project concept with PhilRice, and the Second Preparatory Study Mission (February 2004) for finalization of project concept, formulation of Project Design Matrix (PDM) and confirmation of the project activities. This Project Document is made as the result of said preparatory activities.

This Project Document consists of the following chapters: Chapter 1 (introduction); Chapter 2 (general situation of general socio-economy, agricultural sector and national policy of the country); Chapter 3 (understandings and analysis are made for the problems to be addressed); Chapter 4 (general project strategy); Chapter 5 (evaluation of the project justification); and Chapter 6 (5 criteria of evaluation).

2. BACKGROUND OF THE PROJECT

2-1 General Socio-Economic Situation of the Philippines

The present Arroyo administration started in January 2001 defines poverty alleviation and increase of job opportunities as most prioritized issues, and announced Medium Term Philippine Development Plan, 1999-2004 revised with its new goal, sustainable development and growth with social equity. According to the Plan, by pursuing its original direction on the vitalization of market economy and free trade, emphasis are on the poverty reduction in rural area and fair distribution of wealth through the acceleration of rural development by the modernization of agriculture and fishery; delivery of basic social development services to the vulnerable and disadvantaged sectors of society such as education, health, welfare and housing; sustainable infrastructure development; competitiveness in international market; and ensuring macro-economic stability and reform of governance. In principle, social equity by poverty alleviation, achievement of sustainability in environment and ecology, empowerment of people and gender equity, accountability and transparency of the Government are also defined as priority.

While in social overview, peace and order situation has not yet been stabilized despite of Government's efforts on anti-terrorism operations, joint military exercise with U. S. Army as well as continuous peace talks with Muslim anti-government groups.

Population in the country was 76,498,735 in the National Census at 2000, and it is estimated 81.08 million in the year 2003. Annual population growth rate as 2.32% during the period from 1991 to 1995, and 2.36% during the period from 1995 to 2000.

Growth rate of GDP in 2002 was 9.5%, of which breakdown in sub-sectors was 7.91% in agriculture/fishery/forestry sector, 9.78% in industry sector, and 9.78% in service sector. Terrorism incidences in Metro Manila and major Cities in Mindanao, threatening movement of some military groups cause social unrest which is reflected in the weakness of Peso currency against U. S. Dollars.

Table 2-1.1 GDP and GNP of the Philippines, 1998-2002

	1998	1999	2000	2001	2002
GDP (Unit: Million Pesos)	2,665,060	2,976,905	3,354,727	3,673,687	4,022,694
GDP (Growth Rate, %)	10.07	11.70	12.69	9.51	9.50
Agriculture/fishery/forestry	451,645	510,494	528,868	548,739	592,141
Growth Rate (%)	-0.12	13.03	3.60	3.76	7.91
Industry Sector	838,367	911,074	108,2431	1,191,707	1,308,219
Growth Rate (%)	7.51	8.67	18.80	10.01	9.78
Service Sector	1,375,048	1,555,337	1,743,428	1,933,241	2,122,334
Growth Rate (%)	15.65	13.11	12.09	10.89	9.78
GNP (Unit: Million Pesos)	2,802,132	3,136,169	3,566,059	3,918,679	4,290,199
GNP Growth Rate (%)	11.07	11.92	13.71	9.89	9.48

Source: 2002 Philippine Statistical Yearbook, National Statistical Coordination Board

2-2 Situation of Agricultural Sector

2-2-1 Agricultural Production

The major agricultural products of the Philippines are categorized into two, i.e. 1) cereals for domestic consumption (rice, corn), and 2) cash crops for exportation (coconuts, sugarcane, banana and mango).

The consumption of rice in the Philippines has reached 120kg/year per capita. The total consumption volume in 2002 was approximately 9.55 million metric tons. As for production of rice, it recorded 8.63 million mt, equivalent to 90% of total consumption in 2002, showing recent recovery from 8.55 million mt in 1998 when damaged by El Niño phenomenon and series of typhoons. Import volume of rice decreased from 2.18 million mt during emergency import in 1998 to 0.61 million mt in 2001. However, it again increased to 0.75 million mt in 2001.

Production of corn once reached 4.8 million tons in 1993 as its largest volume as result of the national policy for production increase in 1970 – 80's, however in recent years its production fractured around 4.5 million tons. At the traditional corn planting areas such as in Mindanao, planted area of corn has been shifting to commercial crops with high profits due to the low profitability of corn.

Coconuts have been the most important product for exportation. Philippines has been well-known as the world biggest production of coconuts, and commonly said that 1/3 of the population of the Philippines are somehow concerned to coconuts-related industries. However, due to the price decrease of coconuts oil in international market, coconuts oil production started to shift its certain portion for the use as alternative for fossil fuels.

Sugarcane is mainly planted in large-scale plantation in Negros and Central Luzon, however, production amount has been decreased also due to the low selling price in international market. As result, sugarcane is presently concentrated in the export mainly to U.S. Banana production is concentrated also mainly in commercial plantations in Mindanao.

Table 2-2.1 Major Agricultural Production in the Philippines

	1998	1999	2000	2001
Rice (Palay) <in '000 mt>	8,554.8	11,786.6	12,389.4	12,954.9
Planted Area <in '000 ha>	3,170.0	3,999.8	4,038.1	4,065.4
Corn <in '000 mt>	3,823.2	4,584.6	4,511.1	4,525.0
Planted Area <in '000 ha>	2,354.2	2,642.2	2,510.3	2,486.6
Coconuts <in '000 mt>	12,806.4	12,504.0	12,499.1	13,207.8
Planted Area <in '000 ha>	3,134.4	3,115.8	3,118.8	3,119.6
Sugarcane <in '000 mt>	17,333.4	23,777.8	23,518.5	24,961.7
Planted Area <in '000 ha>	343.6	375.3	372.1	387.1
Banana <in '000 mt>	3,492.6	3,869.2	4,155.7	5,060.8
Planted Area <in '000 ha>	327.6	342.4	348.0	386.5

Source: 2002 Philippine Statistical Yearbook, National Statistical Coordination Board

2-2-2 Development Constraints in Agriculture

The following are considered as the constraints in the development of agricultural sector in the Philippines:

1) Continuation of Traditional Low-Yield Farming Practices

Due to the inefficient extension and trainings, inaccessibility to remote farming villages, and limitation in resources for public relation, many farmers has limited opportunities to be exposed to advanced farming technologies, As result, traditional low-yield farming practices are being continued.

2) Marginal Soil Condition

Among farmland of the country, approximately 9.3 million hectares are classified as marginal soils, one of the reasons of difficulties in stable and productive agricultural development. Such condition is attributed to (1) low fertility of soil, (2) farmland located in slope area, (3) lack of water, (4) lack of micronutrient, etc. However, problem in soil is caused by different factors in each area.

3) Stagnation of Irrigation Development

The construction of small scale communal irrigation systems which have beneficial areas of less than 1,000 hectares was mandated to Local Government Units (LGUs) by the enforcement of Local Government Code in 1991, however, due to the limited financial capability in the most of LGUs, new development of irrigation facilities has been stagnated in rural area. Also, deterioration continues on intake facilities and canals in the most of large scale national irrigation systems originally facilitated in 1960's, however minimum rehabilitation has been made due to the financial reasons.

4) Post-Harvest and Marketing

For rice, as major agricultural product of the country, percentage of post-harvest loss is still high due to the traditional old method of drying, milling, packing and transporting to market. Also, in many farmland located far from town and/or in mountainous areas, inefficient transportation of products to market causes high cost for transportation and burden to farm economy. Such condition also allows middlemen with means of transportation to control farm gate price of agricultural products.

2-2-3 Agricultural Extension

In 1991, the national government transferred the agriculture extension services to the Local Government Units (LGUs) for greater administrative efficiency and effectiveness in accordance with the enforcement of Local Government Code. Thus, the local chief executives of the Province, City, and Municipality became responsible in-charge of agricultural policy making in the local area as well as

Agricultural Officer in the local level took responsibility of the agricultural development including agricultural extension. However, in most cases LGUs can not technically and financially meet all the extension needs of farmers in the different kinds of conditions, due to its limitation such as difficulty in continuous assignments of well-trained agricultural technicians. Thus, various supports from other national agencies particularly on specialized technical services shall be made.

2-2-4 Socio-Economic Situation of Farmers

Among 2.77 million of labor forces in the Philippines, 10.4 million i.e. approximately 40% are related to agricultural sector (in 2001). The summary of socio-economic situation of average farmers in selected three Provinces (Ilocos Sur, Nueva Ecija and Agusan del Norte) which represent three target areas of the Project, Northern Luzon, Central Luzon and Northeastern Mindanao respectively, are shown below.

Table 2-2.2 Socio-Economic Situation of Farmers in Target Area

Target Area	Northern Luzon	Central Luzon	N-E Mindanao
Province	Ilocos Sur	Nueva Ecija	Agusan del Norte
Average farm household size	5	5	6
Ave. Income (rice farmer)	P 73,654	P 115,114	P 69,953
On-farm rice income	P 38,200	P 99,226	P 48,138
Off-farm rice income [1]	P 575	P 2,438	P 903
On-farm other income	P 11,054	P 783	P 6,277
Off-farm other income [1]	P 536	P 0	P 37
Non-agriculture income	P 23,290	P 12,667	P 14,599
Poverty Incidence [2]	30.6%	27.3%	39.9%
Net-profit cost ratio	0.47(Wet) 0.58(Dry)	0.72(Wet) 1.38(Dry)	0.97(Wet) 0.70(Dry)

1 Income earned by working outside of own farmland

2 Total no. of household / No. of household of which income below poverty threshold (P12,232) in 2000. (Note: 47.4% nationwide in 2000)

Source: Socio-Economic Research Division, PhilRice

2-3 Strategy of the Philippine Government

2-3-1 Medium-Term Philippine Development Plan (1999-2004)

The Philippine Government has set its development policy in agricultural sector in Medium Term Philippine Development Plan (1999-2004), as follows:

The attainment of sustainable rural development shall be pursued over the next six years. This shall be founded on a modernized agriculture and fisheries sector, and a diversified rural economy that is responsive to the needs of the population. In particular, a food security agenda consistent with the provisions of the AFMA shall be promoted to ensure adequate supplies of food. The modernization

process over the next six years shall enable the sector to be dynamic, market-driven, readily accessible to the improved technologies and internationally competitive. It will be guided by sound practices of resource use efficiency and sustainability and by the principles of social justice and equity and active private sector and civil society participation. Coordinated and continuing initiatives in these areas shall provide an effective means to reduce poverty.

In the context of the key elements of a modern agriculture, the following scenario is envisioned by 2004:

The transformation of sector stakeholders from subsistence producers to entrepreneurs would have begun. This process would instill and nurture a sense of awareness of the needs of the community and the market (which implies achieving certain levels of competitiveness), and of the need to manage the resource base to ensure sustainable production activity. As a result, these new breed of stakeholders are able to make informed decisions and choices with respect to the types of commodities to produce, the types of technology to use, and which markets to sell their outputs to obtain the highest returns. Cooperatives, corporations and other rural organizations shall emerge as potent driving forces for rural development. Alliances among the stakeholders, agribusiness firms, technology providers, and rural-based industries will contribute in laying the concrete foundations for agri-industrialization in the countryside.

Productivity in the rural sector shall be enhanced through increased access to modern technologies, competitively-priced inputs, and support services such as strategic infrastructure support, credit, and information and marketing support. Higher productivity shall translate to higher incomes, making farmers and other stakeholders better off, thereby contributing to a reduction in rural poverty. The long-term sustainability of increased productivity shall, in turn, be ensured through broader and more intensified management of natural resources, showcasing community-based approaches. All resource users shall start to pay the appropriate price for using natural resources through a system for proper resource pricing. This shall augment financial resources to sustain resource management efforts.

To realize this scenario, the following need to be accomplished:

1. Diversify the rural economy by developing alternative employment opportunities in farm and non-farm activities to sustain the increases in incomes and standard of living of farmers, fisherfolk, upland dwellers and indigenous people;
2. Increase sector productivity and production through modern, appropriate, and efficient technologies and sustainable farmer practices, timely and effective delivery of support services and utilization of idle and underutilized resources;
3. Promote and expand opportunities for gaining equitable access to productive assets (i.e. land through the agrarian reform program, and aquatic and other natural resources), through the application of agrarian reform principles in their disposition and utilization;

4. Empower all stakeholders and strengthen institutional structures in the sector through improved capacity building and extension programs;
5. Remove all remaining policy biases against the sector to achieve competitiveness;
6. Mobilize greater financial resources for sector development;
7. Enhance private sector participation in sector development by reducing the cost of doing business in rural areas through improved rural infrastructure, reducing uncertainties on land access, improving availability of financing and maintaining sound institutional and favorable business environments; and
8. Ensure sustainability of sector growth through environmentally-sound practices which maintain and enhance the productivity of the resource base that, in turn, leads to steady improvement in incomes and general quality of life.

2-3-2 GMA Rice Program

The Agrikulturang MakaMASA, a special program for the increase of major crops started in 1988 under previous administration, was renamed as Ginintuang Masaganang-Ani (GMA) in 2002 for the promotion of production increase and supporting schemes. The targets of rice component (commonly referred to as GMA Rice Program) of the year 2004 are as follows.

Goal : The GMA Rice Program 2003-2004 is envisioned to help increase rice yields and farmers' income, achieve greater food sufficiency in the country, an generate additional employment in the agricultural sector.

Objectives :
1) To attain a total Palay production of 14.20 M mt in CY 2003 and 14.98 to 15.48M mt in CY 2004 (note : attainment of 15.48M mt will be said as "*self-sufficiency*".)
2) To increase yield of Palay by 9% per year (2003 to 2004)
3) To increase farmers' income by at least 10% per year
4) To reduce post-harvest losses by at least 1%
5) To generate more jobs particularly in hybrid and inbred rice seed production and cultivation

2-4 Past and Present Undertakings by the Government and Related Organization in the Sector

Following are the major efforts being made by Government agencies on agricultural extension activities.

1) Agricultural Training Institute (ATI) is the lead coordinator of agriculture and fisheries that pro-actively responds to the agricultural extension and training needs in local communities. It trains agricultural extension workers and their clienteles, who are mostly farmers and other

agricultural workers; ensures that training programs address the real needs of the agricultural sector; and ensures that the research results are communicated to the farmers through the appropriate training and extension activities.

Their major extension activities are :
- LGU improvement activities
- Technology packaging
- Technology transfer
- Technology showcasing
- Information materials dissemination
- Monitoring and evaluation services
- Commissioning of private sector extension groups training services

2) Bureau of Post-harvest Research and Extension (BPRE) spearheads the development of the country's post-harvest industry through the development and promotion of post-harvest equipment and facilities

Their major extension activities are :
- BPRE Industrial Promotion Program
- Promotion and commercialization of grains post-harvest Technology
- Establishment of Post-harvest Technology Demonstration Centers

3) Governmental agencies for specific crops are also executing extension activities in their field of specialization, such as:

- National Tobacco Authority (NTA) – focuses on market-oriented tobacco production in accordance with the corresponding tobacco production technologies.
- Philippine Coconut Authority (PCA) – implementing provision of farm inputs, transfer of matured/commercializable technologies as well as farmer consultations.
- Sugar Regulatory Administration (SRA) – provides regulatory and extension services, as well as R&D technologies to stakeholders to ensure economic viability of sugar production and a stable, sufficient supply of quality sugar in the Philippines.
- PhilRice- develops and implements a national rice research and development program, improves rice productivity and helps attain self-sufficiency in rice production. Its R&D programs are focused on productivity, profitability, sustainability, and capacity enhancement.

3. PROBLEMS TO BE ADDRESSED, THE CURRENT SITUATION

3-1 Institutional Framework of the Sub-sector

3-1-1 Government's Effort on Agricultural Extension

As stated, enforcement of Local Government Code in 1991 agriculture extension services was transferred to the Local Government Units (LGUs). However in some LGUs, agricultural technicians can not technically and financially meet all the extension needs of farmers in different kinds of farming conditions in the area. Thus, LGUs require assistance and support from other agencies particularly on specialized technical services.

The promulgation of the Republic Act 8435, otherwise known as the Agriculture and Fisheries Modernization Act (AFMA) of 1997, was made to address this issue, gives priority to the revitalization and strengthening of the national extension system that will help accelerate the transformation of Philippine agriculture and fisheries from a resource-based to a technology-based industry. Under this act, Department of Agriculture (DA) is tasked to formulate a National Extension System for Agriculture and Fisheries (NESAF) composed of a national government system that directly complements the local government subsystems and the private sector subsystem.

Along with these initiatives, several RDE networks were organized on different commodities and disciplines such as for vegetable; engineering; biotechnology; research and development; livestock and poultry; crop protection; irrigation and drainage; coconut; root crops; post-harvest; food science and nutrition; fisheries; and soil and water to further strengthen the research and extension interface. The Bureau of Agricultural Research (BAR) coordinates these networks.

3-1-2 Mandate and Mission of PhilRice

Philippine Rice Research Institute (PhilRice) was established in 1986 as per Executive Order (EO) 1061 (November 1985) and EO 60 (November 1986) in the purpose of research and development of rice as well as technical promotion.

Mandates of PhilRice at the time of establishment are as follows:

- Sustain and expand the gains made in rice production;
- Increase the income of small Filipino rice farmers;
- Expand employment opportunities and stimulate economic growth in the rural areas through rice farming; and
- Promote the general welfare of the people through self-sufficiency in rice production
- To organize and develop strong training program for rice scientists, research managers and extension workers

In 2002, PhilRice was transferred from Department of Agriculture to Office of the President as per EO 76 (March 2002) to respond to the initiatives of Government's Hybrid Rice Commercialization Program (HRCP). At that time, in addition to the mandate of PhilRice stated in the EO 1061 and 60 above, PhilRice was mandated to be the primary government agency responsible for the HRCP and the promotion of the utilization of hybrid rice technology.

In June 2003, the EO 219 was signed directing the transfer of PhilRice from the Office of the President to the Department of Agriculture, in response to the transfer of initiative on HRCP from the Office of the President to the Department of Agriculture.

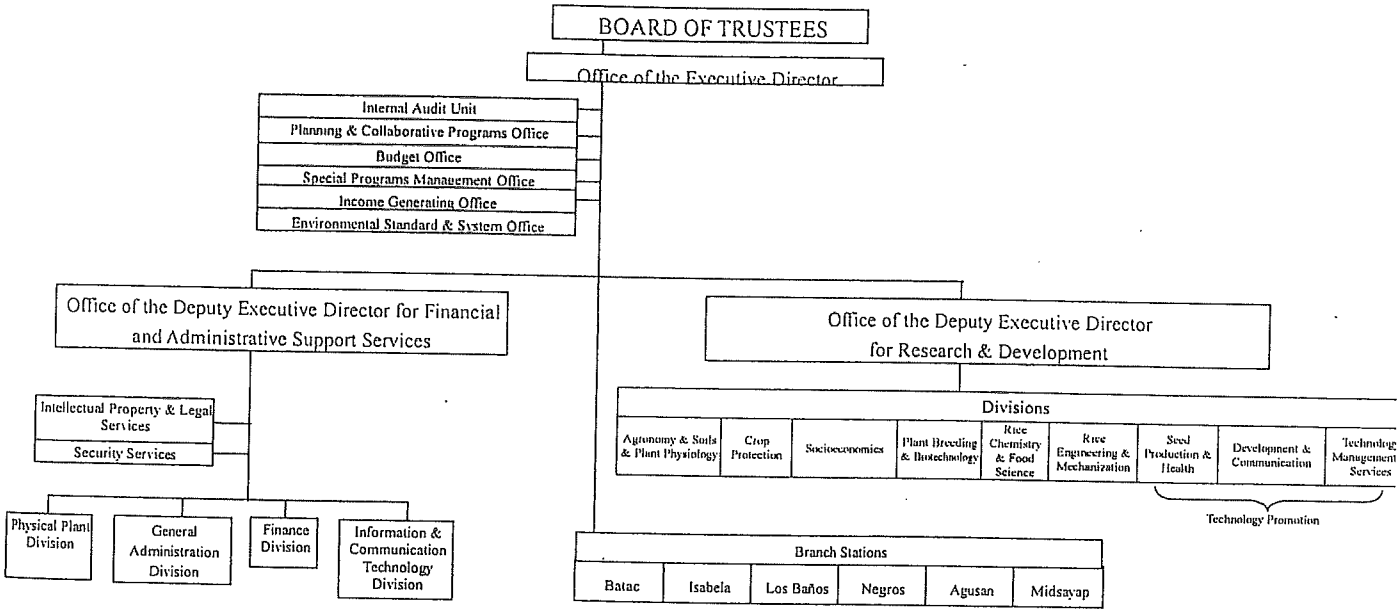
Since then, there has been no action/plan made to modify present mandates, status and organizational set-up of PhilRice.

3-1-3 Organization and Staff of PhilRice

PhilRice has its main functions in Central Experiment Station (CES) in Muñoz, Nueva Ecija Province located approximately 140 km north of Manila, and maintains six (6) Branch Stations namely Batac, Isabela, Los Baños, Negros, Agusan, Midsayap. Total number of staff is 589 in CES while 306 in 6 Stations.

The Organization Chart of PhilRice is shown in Figure 3-1.1 in next page.

Figure 3-1.1 Organization of PhilRice (Major Division)



Composition of the Staff of PhilRice is shown as follows

Table 3-1.1.Composition of PhilRice Staff.As of Dec. 2003.

	CES	Branch (Total)	TOTAL
Research	163	56	219
Administration	89	53	142
Others (laborer, etc.)	34	15	49

3-1-4 Activities of PhilRice

The major activities under the Research and Development of PhilRice are as follows.

1) Improvement of Direct Seeded Irrigated Lowland Rice

To synthesize indigenous and modern direct seeding technologies and practices that will attain and sustain target quality yields of 9-10 t/ha in year 2005

- Development and integration new and indigenous crop management technologies and practices (varieties, crop management techniques and decision-support systems for direct seeding, village-level modeling and integration)

2) Improvement of Transplanted Irrigated Lowland Rice

To develop farming technologies that will improve sustain yield of transplanted irrigated lowland rice

and attain an average of 6t/ha in on-farm national testing by 2005.

- Development of yield enhancing, cost reducing and resource use efficient technologies for transplanted irrigated lowland rice areas (inbred rice varieties, crop-nutrient water management protocol, IPM for major pests and diseases)
- Development of site-specific technologies for irrigated lowland

3) Development of Hybrid Rice

To develop and use hybrid rice technology as a means for increasing average rice yield by 15% or higher, thus promoting farmers' productivity and competitiveness and the attainment of rice self-sufficiency over the long term.

- Improvement of hybrid rice germplasm (breeding of three-line and two-line hybrids and parental lines, transfer of pests resistance genes to parental lines, purity enhancement of public hybrids and their parental lines)
- Improvement of production and postproduction technologies for hybrids (for F1 hybrids, and cultivation of selected public hybrids, machines and implements)

4) Rice-Based Farming Systems for Fragile Environments

To develop and promote domain specific farming technologies to transform rice-based rainfed lowland, upland, cool-elevated, saline-prone and multinutrient deficient areas into economically productive, competitive, and sustainable diversified farming systems.

- Integration of rice-based farming systems for the rainfed lowlands
- Diversifying land-use in upland rice areas
- Development of appropriate rice based farming systems for the saline-prone areas
- Integration of rice-based farming systems for cool elevated ecosystems

5) Increase Value of Rice and Rice-Based Products

To help increase the productivity and profitability of rice farming systems through the development/ improvement and promotion of high quality and value-added products and related technologies

3-1-5 Relation with Other Organizations/Agencies

PhilRice is the lead agency of Rice R&D Network consists of 57 participating organizations, and leading member of Rice Seed Network of 95 member organizations, as well as Hybrid Rice Seed Industry Council. PhilRice has been undertaking joint collaboration projects/studies with various

government/non-government organizations. In recent 5 years, major tie-up organizations are summarized as below:

- Government: Department of Agriculture, DA Regional Field Units (DA-RFUs), Bureau of Agricultural Statistics (BAS), Bureau of Agricultural Research (BAR), Bureau of Plant Industry (BPI), National Irrigation Administration (NIA), Department of Labor and Employment (DOLE), Department of Science and Technology (DOST), etc.
- State Universities and colleges
- Non-government organizations
- Private organizations and companies

3-1-6 Relation with Other Programs under Japan's ODA

Among programs in the Philippines under Japan's ODA, the followings are in agricultural sector. (as of March 2004)

1) Project Type Technical Cooperation.Dispatch of Long-Term Experts
   - Environment and Productivity Management of Marginal Soils
   - Improvement of Farmer's Income through the Strengthening of Agricultural Cooperatives
   - The National Water Buffalo and Beef Cattle Production Project
   - Dispatch of Long-term Experts.1 in DA, 1 in DAR, 2 in NIA.

2) Development Survey
   (no on-going program at this period)

3) Grant-Aid
   The Project for Rehabilitation of Cagayan Irrigation Facilities

4) Loan (Yen Credit)
   - Help for Catubig Agricultural Advancement Project
   - Mindanao Sustainable Settlement Area Development Project
   - Agrarian Reform Infrastructure Support Project (Phase II)

Among above, the Project is closely related to the Project Type Technical Cooperation "Environment and Productivity Management of Marginal Soils" to which the Project shall be related. In this Program, Overall Goal is set as the development of soil and water management technology for the sustainable agricultural production in Pilot Marginal Land in large basin (where 3 Techno-Demo Farms located), and Project Purpose is set as the development of soil and water management for the

Techno-Demo Farms in small basin. These two programs share the same direction and already have mutual exchange of research data, however focus is on the soil and water management in this program, while on the extension of high-yield farming technology from the viewpoint of variety in the Project.

3-2 Problems to be Addressed

3-2-1 Central Luzon

In the Central Luzon where PhilRice CES is located, rice double cropping is conducted widely. The rice seasons are divided into two seasons, i.e. one in wet season from July to December and the other in dry season from January to June. The rice planting area is 331,000 ha in wet season and 203,000 ha in dry season. In the dry season, irrigated water is available in most of the area, thus, the area is commonly called as "rice bowl in the Philippines". The average yields are 3.9 t/ha in wet season and 4.4 t/ha in dry season. Since solar radiation is more in dry season, the yield is obviously higher in dry season. In dry season, direct (wet land) seeding is conducted widely instead of transplanting, and few problems constraining rice farming. On the other hand, in wet season, the direct seeding is not easy because of the low seedling establishment caused by the rainy weather. In addition, bacterial leaf blight often outbreaks and causes serious damage for the susceptible varieties such as hybrid rice.

In the yield trials in the station, the yield is more than 7.0 t/ha in dry season, 5.0 t/ha in wet season. Present leading variety is IR64, and then, more high yielding varieties such as PJ17 are developed. In addition, high yielding hybrid rice is now increasing. With the high yielding varieties and improved cultivation method, it is possible to increase the yield in farmers field to 5.0-5.5 t/ha that is 1.0 t/ha higher than the present yield.

3-2-2 Northwestern Luzon

The climate of Northwestern Luzon is characterized in long dry season from November to May while rainfall period is extremely short. Since the monthly rainfall is less than 20 mm from December to April, the rice cultivation is possible only in five months from June to October. The rice planting area in the wet season is 284,000 ha and only 70,000 ha (25%) in the dry season. The percentage of rice planting area in dry season is extremely lower than other area, such as 61 % in Central Luzon. The average farm area per household is also small (only 0.5 ha), so intensive farming by using the land effectively especially in dry season is very important to increase the income. Crop production in dry season, so called rice-based farming, is carried out using ground water or reserved water in ponds, but the water is not enough. On the other hand, farmers are also introducing fish and livestock since their motivation to improve the living condition are very high. In such condition, it is obvious that limiting factors in the area are the small land area per farm household and the shortage of water in long dry season. Therefore, there is a profound need

to increase the yield of rice in wet season and the yields of the other crop in dry season.

The average rice yield in the area is 3.4 t/ha. The low yield seem to be attributed to early maturing varieties which yield is unstable, and dry seeding which seedling establishment is unstable. In the yield trials in PhilRice Batac station, the yields are more than 5.0 t/ha In addition, early maturing high yielding varieties such as PJ7 are selected. With the varieties and improved cultivation method, it is possible to increase the yield in farmers field to 4.5 t/ha that is 1.0 t/ha higher than present yield.

3-2-3 Northeastern Mindanao

Northeastern Mindanao is part of tropical rainforest where there is high cloud cover and rainfall throughout the year resulting in low solar radiation for the rice crop. The rice is usually planted twice a year. The planting area is 69,000 ha in the first season from January to June and 49,000 ha in the next second season from July to December. Since the rice is planted throughout the year, outbreaks of pests and diseases are likely to increase and continue. In fact, there are serious pests problems such as white stem borer and rice black bug, and diseases such as bacterial leaf blight and tungro. It is possible to control the pests by chemicals but it has a cost problem. There are also soil nutrient deficiencies such as potassium and zinc deficiency. Therefore, the rice yield is quite unstable and the average yield is 2.7 t/ha in the first season and 2.8 t/ha in the second season.

In such adverse condition, there is a sound need to develop and select varieties suitable to the area. One such variety was selected, named as "Angelica" recently. However, Angelica is not resistant to these pests and diseases, and the eating quality should be improved more. On the other hand, a pest forecasting model for white stem borer is developed. Using the model, chemicals will be used effectively. If new better varieties derived from Angelica will be developed and improved cultivation method will be used , it will be possible to increase the yield in farmers field to 4.0 t/ha that is 1.0 t/ha higher than present yield.

4. PROJECT STRATEGY

The Project aims to execute cooperation to PhilRice in the field of technology promotion for actual implementation based on the fruit of past cooperation by the Government of Japan for more than 15 years. Upon cooperation, emphasis will be made on the development of suitable input and location-specific technology packages which can be adopted by rice farmers in poverty, and the technology shall be verified in actual rice field of farmers with cooperation of local officials such as agricultural technicians (Local Government Units).

Under such circumstance, the following approaches shall be taken under the Project:

1) Evaluation and Selection of Varieties for Technology Package (in Agusan Branch Station only)

Among three target areas of the Project, development of rice variety with resistance to pests and diseases has not yet been established at PhilRice Agusan branch station in northeastern Mindanao. Considering also that the methodology on the protection against other pests and diseases has not yet been established, it is necessary to implement evaluation and selection of varieties at the experimental farm of the station. This activity is expected to complete in three years including packaging technologies, since existing variety "Angelica" can be utilized with added resistance to pests and diseases.

2) Development of Suitable Input and Location-Specific Technology Package and its Verification/Trainings at Rice Fields of Farmers

Demonstration activities will be implemented at the Technology Demonstration Farms initiated by PhilRice at the beginning of the Project in CES and Batac, while these shall be started 3 years after the commencement of the Project in Agusan Branch when above mentioned variety development will be reached to demonstration level. When the issues which may affect project activities would be arisen during the verification in field level, they shall be feed-backed to research sections of PhilRice immediately for the improvement of technology package. Simultaneously with demonstration activities in field, technology transfer shall be made to the officials of concerned agencies (such as agricultural technicians) and farmers. Especially, agricultural technicians of Local Government Units shall be given trainings on technical know-how and operation/management for the purpose of expected implementation of demonstration farms by themselves.

3) Dissemination of Methodologies on Technology Packaging and Extension to Other Related Agencies/Other Areas

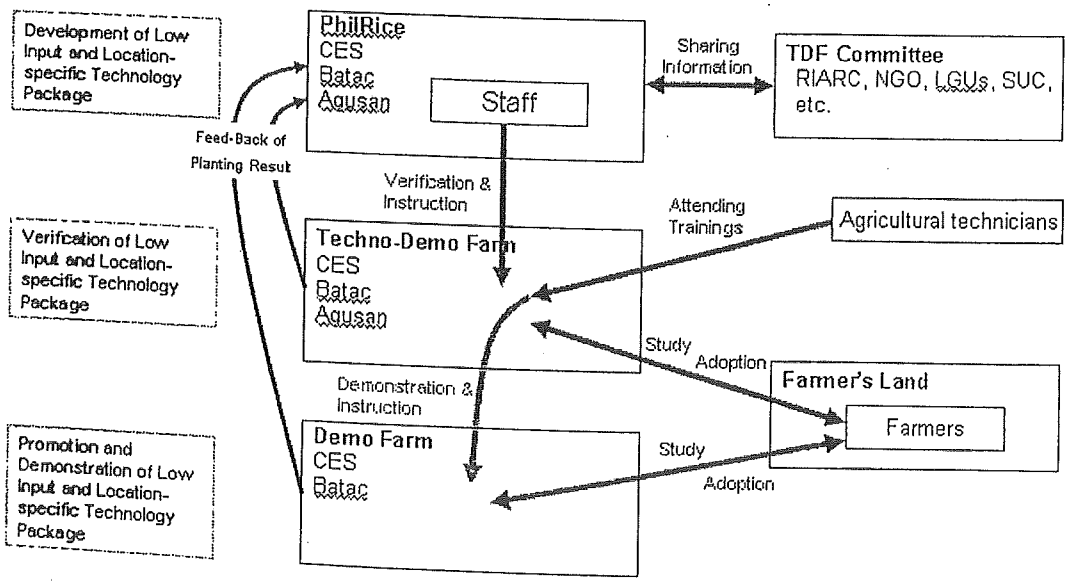
For the smooth operation of Technology Demonstration Farm established, TDF Committee shall be established at each Municipality where TDF is located. This Committee will be chaired by the Municipal Agricultural Officer of the Municipality, and consists of the representatives of DA-RFU, RIARCs, Provincial Government, State Universities and Collages. In this Committee, achievement of Technology Demonstration Farm will be shared by member organizations. Furthermore, such packaging/extension methodologies will be expected to be spread to other Provinces by adopting into training programs of ATI.

4) Establishment of Demonstration Farms by LGUs

During the Project period, LGUs will establish demonstration farms by their own resources, through (1) utilization of suitable input and location-specific technology packages developed at Technical Demonstration Farms, and (2) utilization of the knowledge and skills obtained through technology transfer for their agricultural technicians (LGUs) and cooperating farmers. (details are described at 5-4 "Strategy of Project Activities".)

Approaches of the Project stated above are conceptually visualized in Figure 4.1-1.

Figure 4.1-1 Conceptual Diagram of the Project



5. PROJECT DESIGN

5-1 Long-term Goal and Overall Goal

Long-Term Goal (or "Super Goal) is the ultimate target of the project in the long run and expected to be achieved after certain longer period from the achievement of Overall Goal. In this Project, Long-Term Goal is set as "Self-sufficiency of rice is achieved in the Philippines", in consideration that the self-sufficiency is set as the goal of the present agricultural policy of the Government (especially in GMA Rice Program).

There shall be lot of assumptions expected to achieve this Long-Term Goal, more than the assumptions for the achievement of Overall Goal. The total production of rice in the country for 2002 was 8.62 Million metric tons while consumption was 9.55M mt nationwide, thus, efficiency rate of rice in the country in 2002 was approximately 90% (other agricultural statistics indicates 92%). Simplified computation (without considering population growth and other conditions) shows that 0.93M mt of insufficient volume can be covered by increasing yield in 0.23 ton/ha in national average. However, there shall be more conditions shall be taken into consideration, such as socio-economic situation in population growth (increase/decrease of rice farmers), natural and climatological condition, pests and diseases of rice, increase/decrease of irrigated areas due to construction/deterioration of irrigation systems, as well as relation between import amount and buying price of rice in international market.

Overall Goal is the development effect of the project expected to be achieved after a certain period from the achievement of Project Purpose. In this Project, verification of technology package shall be made at farmers' field with cooperation of personnel such as Agricultural Technicians (LGUs) for the actual implementation of the result of past cooperation by the Government of Japan as technology adoptable by farmers. Then, improvement of productivity will be made as next step through adoption of suitable input and location-specific technology package by farmers by training on demonstration farms implemented by Agricultural Technicians by themselves. Thus, Overall Goals were set as "Productivity of rice in the target areas is increased", and "Agricultural income of farmers in the target areas is increased" with setting indicators of productivity and farmers' income in the Province of 1 Province in Central Luzon, 3 Provinces in Northern Luzon, 2 Provinces in Northeastern Mindanao where CES, Batac Station and Agusan Station are located respectively.

5-2 Project Purpose

As stated, emphasis is made under the Project on the development of suitable input and location-specific technology packages that are low cost and adoptable by rice farmers in poverty, through the verification activities in farmers' land. Thus, Project Purpose of the Project is set as "Rice productivity of participating farmers is improved". Participating farmers are hereby defined as the farmers who offer their farm for the verification activities of the Project.

5-3 Outputs and Activities

5-3-1 Output No.1 and Activities (Development of suitable input and location-specific technology packages at CES and Branch Stations)

In PhilRice CES, Technology Demonstration Farms (TDFs) based on the intensive cultivation technologies are implemented. In the TDFs, high yielding varieties, improved cultivation methods such as low cost direct seeding and farming machines are packaged. As the result, package of intensive cultivation technologies for irrigated lowland areas will be established in each TDFs.

In PhilRice Batac, TDFs based on the integrated crop management for rainfed areas are implemented. In the TDFs, appropriate varieties, cropping patterns, nutrient management, pests and disease management, water harvesting and conservation techniques, and farm tools will be packaged. After the rice is planted, the paddy field will be used for vegetables with ground water or reserved water in ponds. As the results, package for integrated crop management for rainfed areas will be established in each TDFs.

In PhilRice Agusan, at first new varieties are evaluated and selected with emphasis on tolerance to low solar radiation and resistance to pests and diseases. In the varietal development, germplasm evaluation, handling of segregation population, observation nursery and performance tests are conducted. At the same time a TDF is established using present varieties in a field of PhilRice Agusan Station. After that, TDFs will be set up using newly developed varieties or lines, nutrient management based on MOET (Minus-one Element Technique) and LCC (Leaf Color Chart) and pest and disease management. In addition, a pest forecasting model will be validated for white stem borer. As the result, package for improved cultivation technologies for low solar radiation areas will be established in each TDFs.

5-3-2 Output No.2 and Activities (Establishment of technical support systems focused on rice technology)

Through the activities in TDFs, learning materials and rice cultivation manuals such as rice cultivation calendar will be prepared, updated and used by agricultural technicians in each area. Training of agricultural technicians will be conducted as well. As the result, new setting up of demonstration farms by the LGU will be expected. New learning materials by the LGU will be expected as well. As results, new technologies developed by PhilRice will be expected to be extended to farmers.

5-4 Strategy of Project Activities

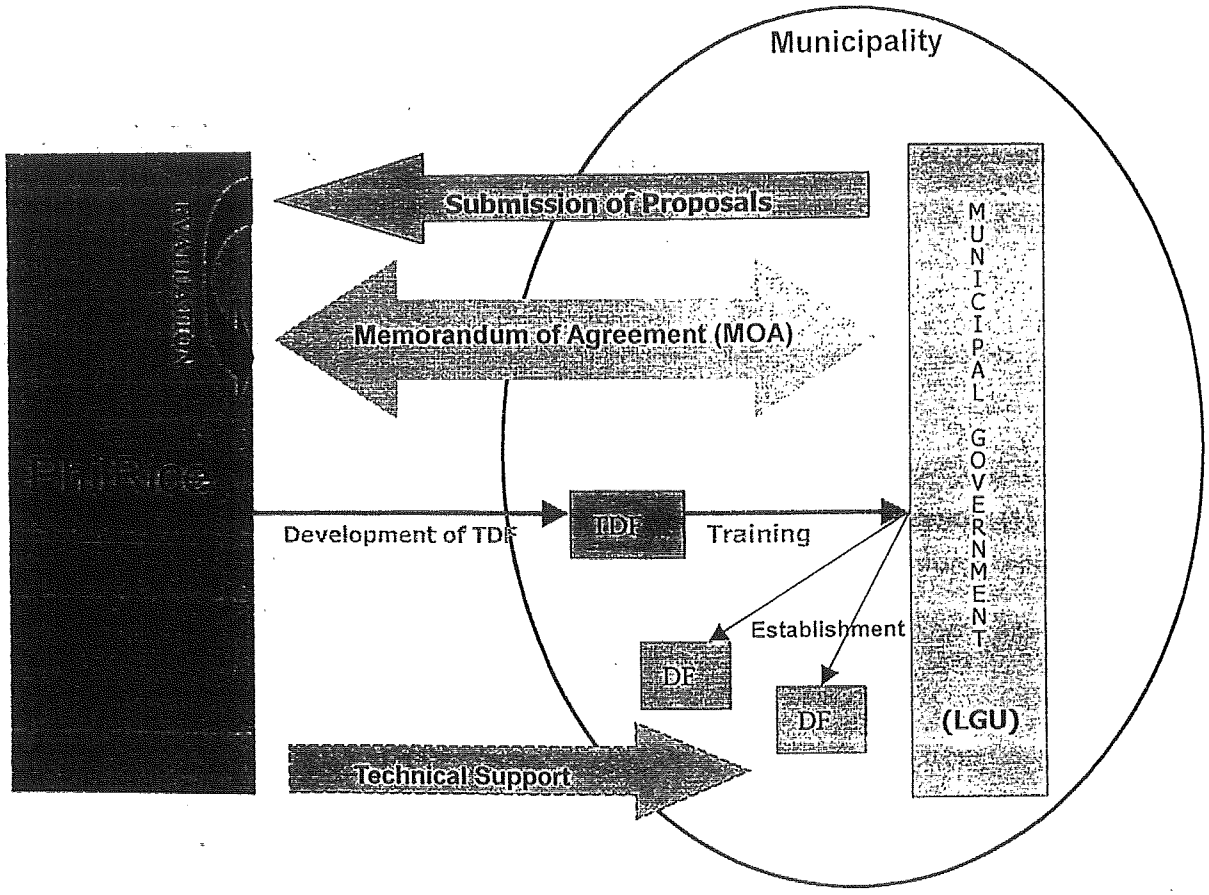
As stated, Outputs of the Project are set as "Suitable input and location-specific technology packages are developed in each target area" and "Technical support systems focused on rice technology are established in 3 target areas", as well as Project Purpose to be achieved within the Project period is set as "Rice productivity of participating farmers is improved".

As for the necessary steps to be taken as strategy on the activities of the Project from the Outputs till achievement of Overall Goal, especially on the dissemination process from TDF to demonstration farms by LGUs, the following was discussed and agreed during the Second Preparatory Study Mission in Feb.-Mar. 2004. (Note: in Agusan Branch Station, up to the following step No.5 shall be implemented as Project activities, and step No. 6 and 7 are not included in the Project.)

1) Preliminary selection of TDF sites will be based on the results of the baseline survey that will be conducted by the Project.
2) The selected LGUs (Municipalities) shall submit to the PhilRice their proposals indicating their commitment to participate in the Project (indicating provision for counterpart budget and staff assignment) and to establish the demonstration farms by themselves within the duration of the Project. This shall serve as the basis in evaluating the capability of the selected municipalities and in assessing the sustainability of the project in the target sites.
3) A Memorandum of Agreement will be signed by PhilRice and the selected municipality
4) The Project will establish and manage the TDFs for the developed suitable input and location-specific technology packages.
5) The Project will implement necessary trainings and provide advice to the agricultural technicians and concerned officials of LGUs.
6) Implementation of at least two demonstration farms will be made within the selected municipality of TDF by using their own resources.
7) The Project will periodically monitor the activities of LGUs on the demonstration farms, and provide technical assistance for the smooth management of demonstration farms by LGUs.

The strategy of project activities on the establishment of Technology Demonstration Farms and demonstration farms as stated above is visually indicated in Figure 5.4.

Figure 5.4 Strategy of Project Activities (TDF and DF)



5-5 Commitments from PhilRice and Philippine Government

For the implementation of this Project, organizational set-up of concerned agencies such as PhilRice has counterpart agency, Department of Agriculture (DA), Agricultural Training Institute (ATI), DA-Regional Field Unit (DA-RFU), Regional Integrated Agriculture Research Center (RIARC) and Local Government Units (LGUs) will be established as agreed on the Minutes of the Meeting upon Second Preparatory Study. In addition, Joint Coordinating Committee (JCC) will be set-up for the Project, to formulate the Annual Work Plan under the framework of the Project, review the overall progress and annual expenditures of the Project as well as the achievement of the Annual Work Plan. JCC will be chaired by the Secretary of Agriculture, with members from PhilRice, DA, National Economic Development Authority (NEDA) and other concerned agencies from the Philippine side, and JICA Experts, Resident Representative of JICA Philippine Office and other concerned officials from the Japanese side, such as Embassy of Japan as an observer. (refer to 5-8)

As for the assignment of counterpart personnel, it was confirmed on Second Preparatory Study and indicated in the Minutes of the Meeting that PhilRice will assign 26 staff (including 4 with Ph.D Degree and 19 with M.S. Degree) in CES, 7 staff (including 1 with Ph.D and 5 with M.S.) in Batac and 13 staff (including 5 with Ph.D and 6 with M.S.) in Augsan as the counterpart personnel for this Project.

It was also confirmed during the Second Preparatory Study that the counterpart budget of the Project for its first year has been already allocated under PhilRice's 2004 budget. (See attached 2004 PhilRice Budget)

5-6 Inputs

5-6-1 Inputs from the Japanese Side

As the inputs from the Japanese side for the implementation of the Project, (1) dispatch of Long-Term Experts, (2) dispatch of Short-Term Experts, (3) equipment supply, (4) share of operation cost , and (5) training of counterpart personnel in Japan are programmed.

(1) Dispatch of Long-Term Experts

Dispatch of four (4) Experts, namely Chief Advisor cum Demonstration/Extension, Coordinator, Evaluation/Selection, and Demonstration/Extension are scheduled, as follows:

- Chief Advisor cum Demonstration/Extension
  - To represent the Project Team with overall responsibility of the Project as well as to provide technical assistance on the development of suitable input and location-specific technology package. For the establishment of technical support sytem, farming situation of farmers, capability of the agencies concerned as well as present extension efforts in the field level shall be taken into consideration.
  - Considering the various related agencies such as LGUs to the Project, establishment of efficient linkage among these agencies shall be included in his task.
- Coordinator
  - To assist Chief Advisor and to take overall responsibility on the logistic aspect of the Project including proper management of the input of cost to materials and activities.
- Evaluation/Selection
  - To be assigned at CES for the evaluation and selection of varieties with tolerance to low solar radiation and resistance to pests and diseases to be adopted at Agusan Branch Station for the first half of the Project period (3 years.)

- Demonstration/Extension
  - To be assigned at Batac Branch Station to provide technical assistance on the implementation of Technology Demonstration Farm. After completion of the activities in Batac in the first 3 years, expected to be re-assigned at Agusan Branch Station for the technical assistance on TDF. However, in case the activities in Batac will not be completed in 3 years, dispatch of one more Japanese Expert for Demonstration/Extension in Agusan may possible, simultaneously with Batac. The expert shall, however, not be stationed in Agusan due to security aspect

(2) Dispatch of Short-Term Experts

In the field of activities of Long-Term Experts above, dispatch of Short-Term Experts will be made when need arises for the inputs of particular expertise. Detailed fields of expertise will be agreed after the commencement of the Project when insufficient inputs of Experts will be necessary during the implementation. As for the number, 3 persons x 3 months a year is anticipated.

(3) Equipment Supply

Necessary equipment will be provided in extents of direct need required by the activities of Long and Short-Term Experts.

(4) Share of Operation Cost

Project operation cost on the cooperation activities of Long and Short-Term Experts will be shouldered within the budget limitation.

(5) Training of Counterpart Personnel in Japan

Counterpart personnel to whom training in Japan is considered effective will be dispatched to Japan for the training. Training program may include establishment of technology packages to be disseminated to farmers, establishment of efficient and effective agricultural extension methodology, etc.

5-6-2 Inputs from the Philippine Side

For the inputs from the Philippine side for the implementation of the Project, 1) assignment of counterpart personnel, 2) buildings, facilities and equipment, and 3)share of operation are programmed.

(1) Assignment of counterpart personnel

For this Project, 26 permanent staff, 7 permanent staff and 13 permanent staff will be assigned as counterpart staff at CES, Batac and Agusan respectively.

(2) Buildings, facilities and equipment

Buildings, facilities and equipment such as office space, etc. will be provided.

(3) Share of operation cost

Cost necessary for the Project operation will be shouldered.

5-7 Important Assumptions

For the achievement of Long-Term Goal, Overall Goal, Project Purpose as well as Outputs of the Project, the following important assumptions shall be satisfied, as listed in Table 5-7.1 below.

Table 5.7-1 List of Important Assumptions of the Project

Purpose/Achievement	Important Assumptions
Long-Term Goal	1) No unusual climate condition occurs 2) No unusual pest and disease occurs 3) Priority of the Philippine Government on rice self-sufficiency is unchanged 4) Budget for rice self-sufficiency is remain secured 5) International price of rice (import price) does not drop rapidly 6) Development of infrastructures for agricultural production is continuously made 7) Number of rice growing farmers does not decrease 8) Result at the target areas is strategically disseminated to other areas by the organization concerned
Overall Goal	1) No unusual climate condition occurs 2) No unusual pest and disease occurs 3) Priority of the Philippine Government on self-sufficiency is unchanged
Project Purpose	1) No unusual climate condition occurs 2) No unusual pest and disease occurs 3) Social and economic conditions of participating farmers do not drastically change
Outputs	1) Budget for this Project is continuously secured by PhilRice 2) Peace and order situation in target areas are not worsen 3) Number of LGU's agricultural technician is maintained and continuously assigned 4) Cooperating farmers continue rice production
Pre-Condition Activities.	1) Present policy of the Philippine Government on rice production continues 2) Philippine Government allocates budget for PhilRice properly without any major delay 3) Related institutions continue to participate and support the Project

Among such list indicated above, some important assumptions of which conditions to their satisfaction are closely related to Project activities are analyzed as follows:

1) Continuation of the Government's Policy and Financial Arrangement Toward Increase of Rice Production

As previously stated, rice is the major food of the country, and stable production of rice is one of the most important policies of the Philippine Government. In the past administrations, increase of the agricultural production has been prioritized and special programs for rice production has been continuously implemented from the past, given different names in each administration. Also, GMA Rice Program budget in 2004 under present administration has been already approved, and it is also expected to be allocated to the Project in its first year as well as the continuous budgetary arrangement may be possibly made due to its political importance. In consideration of such views together with its possible political continuity, this assumption may be satisfied in high possibility.

2) Continuation of Policy, Budget and Organization for Agricultural Extension

The Project aims on extension of suitable input and location-specific technology packages through the establishment of demonstration farms by LGUs themselves through the establishment of suitable input and location-specific farming technology and improvement of extension methodology by agricultural technicians, therefore, continuous prioritization of agricultural extension in LGU's policy as well as stable budget arrangement on extension activities and continuous assignment of trained agricultural technicians are required. The importance of increasing farmers' income by the improvement of productivity is well recognized in each LGUs since majority of labor forces in the country are engaged in agricultural sector, however, efforts to secure constant budgetary allocation for the extension activities shall be made for Municipality especially depends on Internal Revenue Allotment from the central through Province which is likely concentrated in the investments to physical development such as construction of infrastructure facilities. Though it can be said that organization and budgetary allocation of LGUs at the initial stage of the Project are assured since PhilRice will evaluate LGU's commitments on manpower and cost prior to the signing on Memorandum of Agreement with LGUs which shows their intention to develop their demonstration farms. However, for the assurance of Project sustainability, it shall be always taken into consideration that usual communication with LGUs to give motivation for their understanding on the importance of agricultural extension, so as no shift of policy, budgetary cancellation and restructuring of agricultural technicians to occur.

3) Participation and Support from Related Institutions

PhilRice is the leading institution of the National Rice R & D Network, as well as the leading institution of the another RDE national network stipulated in Agricultural and Fishery Modernization Act. As stated, the Project will be implemented with organizational linkages

with DA, ATI, DA-RFU, RIARCs and LGU. Considering that the on-going programs of PhilRice have already made foundation of systems with these institutions, participation and support of such related institution for the Project will possibly be assured. It shall be noted that PhilRice has been conducting lots of joint undertakings in cooperation with Central Luzon State Collage (CLSU) near PhilRice CES as well as University of the Philippines in Los Baños near PhilRice Los Baños Branch Station. It is assured that support from such academic institutions can be constantly obtained. (The President of CLSU is the member of PhilRice's Board of Trustee.)

5-8 Implementation Structure

It is necessary for the achievement of the Project Purpose and Overall Goal, to disseminate achievement in PhilRice's TDFs to other areas with cooperation of Municipalities and related agencies. For this purpose, TDF Committees shall be established to share the technology packages and extension methodologies of the TDF to be disseminated in other areas of the Provinces where LGUs are located.

Furthermore, Joint Coordinating Committee (JCC) will be set-up as the coordinating body of the Project in national level.

Functions of JCC:

(1) Confirmation of the Annual Work Plan under the framework of the Project;
(2) Confirmation of the overall progress and annual expenditures of the Project as well as the achievement of the Annual Work Plan mentioned above; and
(3) Review and exchange views on the major issues arising from or in connection with the Project.

Composition of JCC:

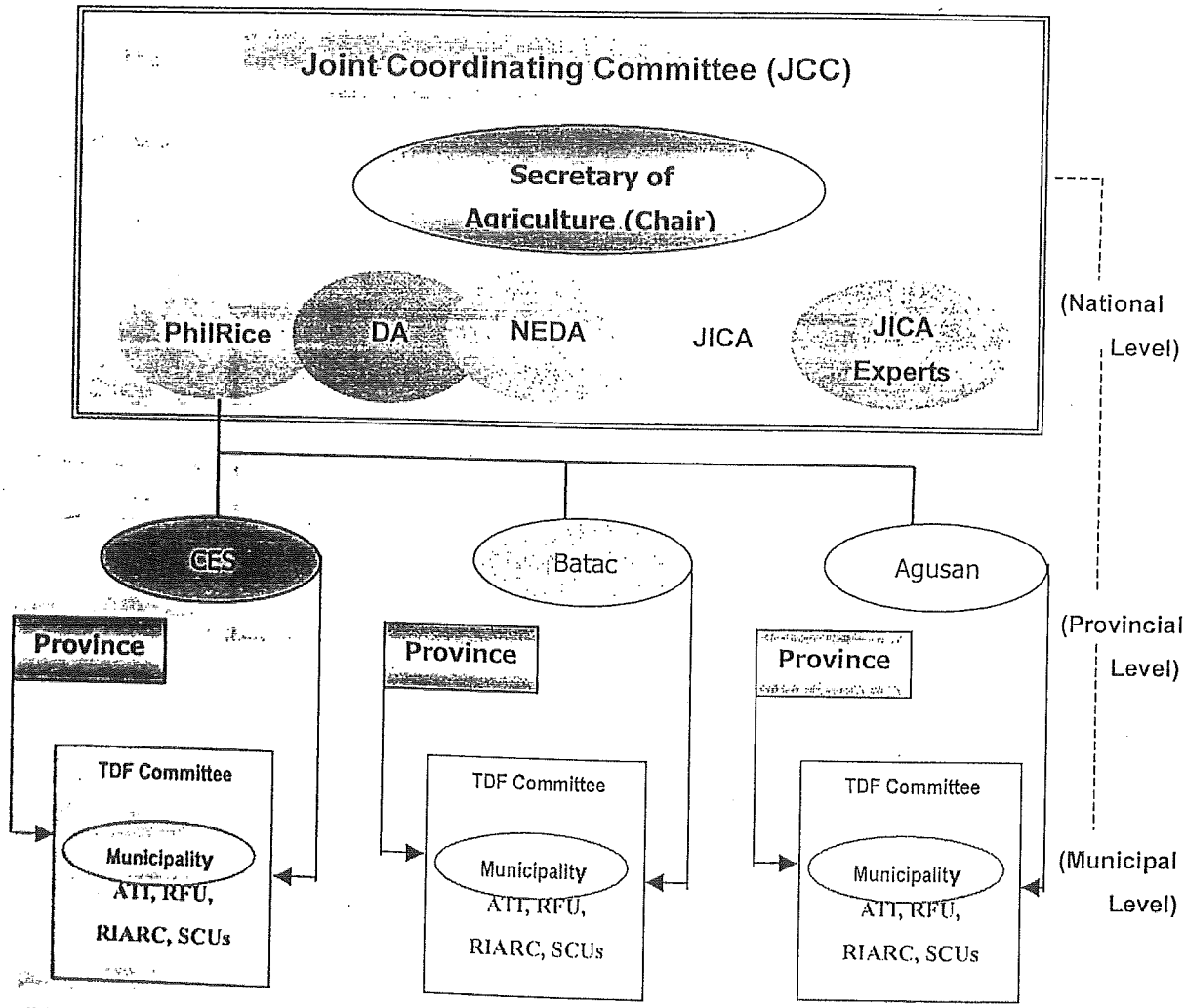
(1) Chair Person: Secretary of Agriculture
(2) Members from Philippine side
- Project Director, Deputy Project Directors and Project Managers
- Representative, Department of Agriculture (DA)
- Representative, National Economic and Development Authority (NEDA)
- Personnel concerned to be decided by the Philippine side

(3) Members from Japanese side
- JICA Experts
- Resident Representative, JICA Philippine Office
- Personnel concerned to be decided by the Japanese side

(Officials of the Embassy of Japan may attend JCC meeting as observers)

The Concept of JCC in the national level and TDF Implementation Committee in the field level (Province, Municipality) are indicated in Figure 5.8-1.

Figure 5-8.1 Committees related to the Project



For the implementation and operation of the Project, PhilRice (CES and Branch Stations) designates the following personnel in-charge of the Project.

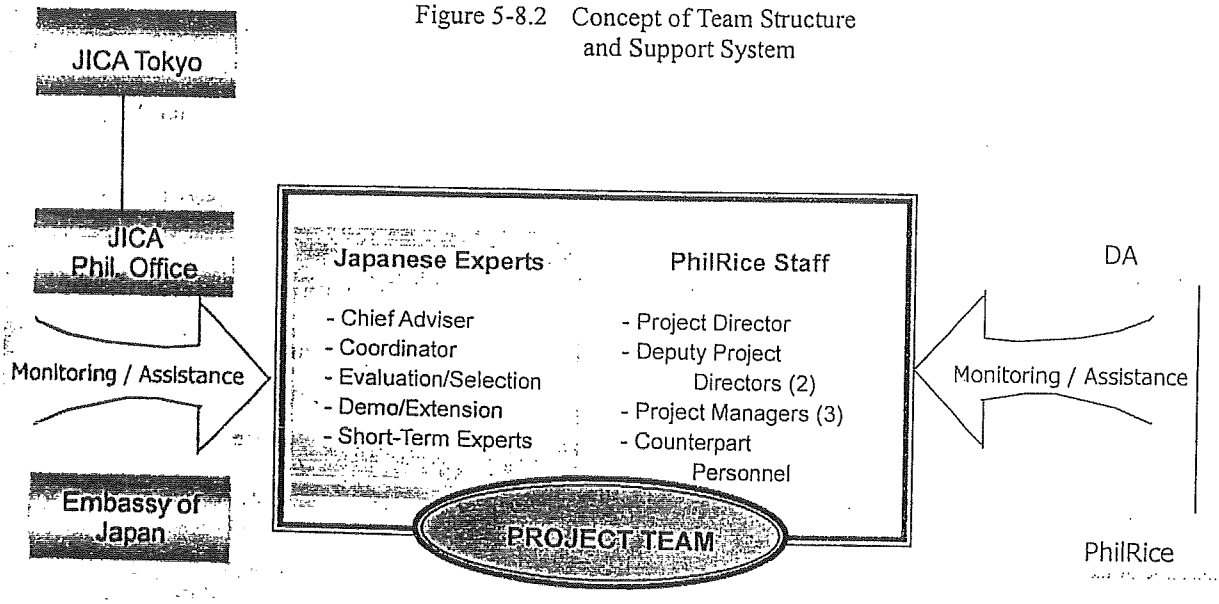
1) The PhilRice Executive Director will be the Project Director responsible for the overall administration of and implementation of the Project.
2) The Project Director will be assisted by PhilRice Deputy Executive Directors who will act as Deputy Project Directors.
3) The Branch Managers of the selected PhilRice branch stations will be the Project Manager responsible for the overall management in their respective sites.

The designated personnel above (Project Director, Deputy Project Directors, Project Managers as well as counterpart personnel) will form the Project Team together with four (4) Japanese Long-Term Experts and Short-Term Experts. The Team will be supported and monitored by the related agencies of both

Governments, such as JICA Philippine Office (Embassy of Japan, if necessary) from the Japanese side, and PhilRice and Department of Agriculture, as supervisory body of PhilRice, from the Philippine side.

The concept of team structure of the Project and its support system are indicated in Figiure5-8.2.

Figure 5-8.2 Concept of Team Structure and Support System



5-9 Prior Obligations and Pre-Conditions

As stated in "5-7-1 Important Assumptions", the pre-conditions of the Project, i. e. 1)Present policy of Philippine Government on rice production continues, 2)Philippine Government secure budget for PhilRice properly without any major delay, and 3)Related institutions participate and support the Project, will be the prior obligations and pre-conditions of the Project. Among these, it is highly possible to satisfy the condition on the continuation of present policy of the Government on rice production, since rice is the major food of the country as well as the previous administrations have continuously emphasized high prioritization of rice production in their national policy. As for the securing budget of PhilRice, there is no major conditions expected for its satisfaction considering that PhilRice budget are allocated in approved 2004 budget as well as continuous importance of the mission of PhilRice. For the participation and support from the related institutions, appropriate participation/support will be highly possible in consideration of the on-going various efforts on technology promotions in CES, Batac and Agusan with their active participation.

6. PROJECT JUSTIFICATION

6-1 Evaluation by 5 Criteria

Based on the project design so far described, evaluation on the justification of the Project is hereby made from the viewpoints of 5 criteria, namely 1) Relevance, 2) Effectiveness, 3) Efficiency, 4) Impacts and 5) Sustainability.

6-1-1 Relevance

(1) Relevance with the Present Policy on the Government

As previously stated, the achievement of self-sufficiency of rice is one of the major objectives of the Government's policy in agricultural sector. The Project, which aims to improve rice productivity, shows high relevance with the achievement of such objectiveAlso, increase of rice and other major crops production has been financially supported by the various special programs in any recent administrations. Also under the present administration, financial commitments has been already made under Gunintuang Masaganang-Ani.commonly referred to as "GMA"..

(2) Relevance with Japan's ODA Policy

Also as previously stated, improvement of production system to be able to respond to the various climatological conditions is regarded as urgent issues in agricultural development sector under the policy of Japan's assistance to the Philippines, as well as importance on the research and promotion on extension in the purpose of the improvement of agricultural productivity. The approach of the Project shows high relevance with this ODA policy. At the same time, the Project is expected to contribute to "Priority issues in assistance - alleviating poverty" which was prioritized in the Country Study of Philippines by JICA

(3) Advantage of Inputs by Japanese Technology

The Project will utilize research result of the Japan's past cooperation of Grant-Aid and Project Type Cooperationfor more than 10 years and also programmed to spread its result to other areas, which will lead to the benefit for not only counterpart personnel but also for farmers.

6-1-2 Effectiveness

(1) Possibility of the achievement of Project Purpose

PhilRice, the executing agency of the Project, has been achieving fruitful result in research and development, however, still required tasks on the research and development of production technology which will satisfy needs of farmers. By the development of suitable input and location-specific technology package and implementation of verification activities in cooperation with agricultural technicians (LGUs) utilizing farmers' land, Project Purpose can be expected to be achieved.

(2) Logicality and Clearness of the Project Purpose

Beneficiaries of the Project which consists of cooperating farmers to Technical Demonstration Farms, agricultural technicians of LGUs, participating farmers to demonstration farms, covers stakeholders in the process of extension of advanced rice farming technology of PhilRice to farmers through the implementation of farming system. Considering also the clear Verifiable Indicates are set for the Purpose, it can be concluded that the definition of Project Purpose is logical and clear.

6-1-3 Efficiency

(1) Utilization of the Result of Japan's Past Cooperation

The project shows high efficiency in terms of inputs since the result of basic/advanced research under the past cooperation by Japanese Government as well as equipment supplied during the past cooperation will be utilized in the Project which can minimize new inputs.

(2) Utilization of Human Resources

Efficient utilization of human resources can be achieved by direct trainings of research institute for agricultural technicians (LGUs) through the increase of abilities of agricultural technicians and staff of concerned agencies in agricultural technology transfer.

(3) Efficiency of the Inputs

As for inputs for the establishment of the suitable input and location-specific technology package as one of the Achievements of the Project, assignment of Expert for Demonstration/Extension in Batac Station is efficient in terms of shifting his task to demonstration/extension activities in Agusan Station when the verification activities are considered to be completed in Batac as well as activities of evaluation/selection in Agusan are shifted to verification activities.

6-1-4 Impact

(1) Possibility of the Achievement of Overall Goal

The Overall Goals of the Project, "Productivity of rice is increased in target areas", and "Agricultural income of farmers is increased in target areas", are considered as adequate goal to be achieved in high possibility, taking into consideration that farmers can increase their income though suitable input and location-specific technology package to be disseminated to farmers surrounding participating farmers of the demonstration farms by LGUs, as well as the improvement on the capability of agricultural technicians through farming systems established by the Project which also to be expanded to other LGUs and related agencies.

(2) Impact by the Implementation of the Project

(a) Political Impact

Agricultural extension in national policy are expected to be more prioritized through the understanding of its importance by the increase of agricultural productivity of target areas, as the result of achievement of Project Purpose as well as overall goal of the Project.

(b) Institutional Impact

The functional linkage among agencies concerned are expected to be strengthened through the implementation of the Project by sharing methodology which includes dissemination of the technology packaging and extension method to ATI and other agencies in agricultural sector through TDF Implementation Committees and JCC.

(c) Social and Cultural Impact

The Project will give social and cultural Impact to farmers, in terms of shifting their low-productive traditional farming practices to new high-productive technology.

(d) Environmental Impact

The development of variety resistance to pest and diseases as well as establishment of pest forecasting model in Agusan Branch Station will directly contribute to the environmental conservation of the area through the control on the overuse of chemical inputs by farmers.

(3) Dissemination of Project Result to other Areas

The result of the Project will be utilized in other Stations of PhilRice as well as to be shared with other concerned agricultural agencies through Technology Demonstration Farm Implementation Committees for the adoption at farmers' trainings in other areas. By such, the result can be expected to be spread nationwide.

(4) Negative Impact

There is no major negative impact anticipated by the implementation of the Project, however, differences may be expected between the areas where productivity will be increased through the extension of technology packages by the Project and other areas.

6-1-5 Sustainability

(1) Sustainability in Political Aspect

Stable production of rice as country's major food is one of the most important policies of the Philippine Government. In the past administrations, increase of the agricultural production has been prioritized and special programs on rice production has been continued from the past, given different names in each administration. Considering such continuity in policy, Project's sustainability in political aspect can be said to be assured.

(2) Sustainability in Organizational Aspects

Considering also the continuity of the mandates, activities and budget release of PhilRice as leading research institute on rice production, no major changes (institutional, functional and budgetary) in PhilRice itself are expected. Also, continuous and stable release of said GMA Rice Program budget to PhilRice shows priority of PhilRice within the Philippine Government, as well as the importance in organizational set-up and budget for the agricultural development in Local Government Units where agriculture is major industry, which also lead to the establishment of LGUs' own agricultural support policy by urging relation between research institutions and agricultural technicians.

(3) Sustainability in Financial Aspect

The result of the Project are expected to be extended to other areas after the completion of the Project due to the assurance of the budgetary arrangement from DA to PhilRice to be utilized in this purpose.

6-2 Overall Project Justification

By the evaluation on the project justification in five criteria described above, the Project shows high relevance for the implementation.

The Project contains high relevance in terms of its directions corresponds to prioritized national policy toward self-sufficiency of rice - country's major food, as well as its target on the improvement of

productivity for increasing incomes of families in agricultural sector as majority of population of the country. The effectiveness of the Project is assured through the Project's step-by-step implementation on its logical flow from activities, outputs and project purpose on the process from establishment of high-yield farming system as suitable input and local-specific technology packages to its extension to farming villages in the target areas. The Project also expects high efficiency of inputs by the combination of the utilization of research results, equipment supplied by the Japanese cooperation for more than 15 years with newly considered inputs for technology promotion activities. The Project is expected to bring impacts to agricultural technicians through trainings for the improvement of their extension capability on established farming sytem, while impacts to living condition in farming villages through increase of their income as the result of the improvement of productivity. No negative impacts are expected to occur in target group by the implementation of the Project. The sustainability of the Project may be concluded also as assured, since increase of rice will be continuously prioritized as country's major food, as well as the Project will establish the mechanism for the extension methodology to be disseminated in other areas by cooperating agencies, and also improvement of agricultural production as one of the key issues of the development in the country.

However, it shall be taken into consideration that the possibility of the changes on LGU's political prioritization of agricultural extension as well as budget allocation in the sector which is essential to the achievement of Project Purpose and Overall Goal in the viewpoint of sustainability of the Project, can not be eliminated in terms of LGU's financial exhaustion and/or possible change of administration by election, etc. In this means, it is necessary for the Project and PhilRice to make continuous efforts on the promotion and strengthening of linkage with LGUs to attain the sustainability of the Project.

AMENDMENT TO THE RECORD OF DISCUSSIONS

BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY
AND AUTHORITIES CONCERNED OF THE GOVERNMENT
OF THE REPUBLIC OF THE PHILIPPINES
ON JAPANESE TECHNICAL COOPERATION
FOR THE PROJECT ON THE DEVELOPMENT AND PROMOTION
OF LOCATION-SPECIFIC INTEGRATED HIGH-YIELDING RICE
AND RICE-BASED TECHNOLOGIES

In response to an official request from the Philippine Rice Research Institute of the Department of Agriculture in the Republic of the Philippines (hereinafter referred to as "PhilRice" and "DA"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") had a series of discussions, through its Resident Representative in the Republic of the Philippines, with the Philippine authorities concerned on measures to be taken by both Governments for the successful implementation of the Project on the Development and Promotion of Location-Specific Integrated High-Yielding Rice and Rice-Based Technologies.

The original Record of Discussions (R/D) has been agreed upon and signed by JICA, PhilRice, and DA officials on October 18, 2004.

Whereas, for the smooth and safe implementation of the Project, amendment of the R/D has been agreed upon among JICA, PhilRice, and DA.

Manila, Philippines
November 22, 2004

SHOZO MATSUURA
Resident Representative in the Philippines
Japan International Cooperation Agency

LEOCADIO S. SEBASTIAN
Excecutive Director
Philippine Rice Research Institute
Republic of the Philippines

ARTHUR C. YAP
Secretary
Department of Agriculture
Republic of the Philippines

The revisions are itemized as follows:

VII. MUTUAL CONSULTATION

In addition to the original descriptions, the following matters have been agreed upon among JICA, PhilRice, and DA:

1. PhilRice regularly conducts monitoring and information collection for the safe implementation of the Project, especially in the Agusan provinces in Mindanao. PhilRice assigns some of its permanent guards for the Project Team during its stay in the Agusan area and other activity sites, if necessary.

IX. TERMS OF COOPERATION

The duration of the technical cooperation for the Project is amended as:

From November 15, 2004 to November 14, 2009.