

TABLE OF CONTENTS

	<i>Page</i>
Summary Sheet	<i>i-vi</i>
Main Report	
1. Outline of the Ex-Post Evaluation Study	1
1.1 Background and purpose of the study	1
1.2 Evaluation team and study period	2
1.3 Study scope and methodology	2
2. Overview of the Project	4
2.1 Background of the project	4
2.2 Project framework	5
3 Study Results	7
3-1 Sustainability	7
3.1.1 Institutional sustainability	7
3.1.2 Technical sustainability	11
3.1.3 Financial sustainability	13
3.1.4 Sustainability of project effects	14
3-2 Impact	16
3.2.1 Impact attained at the Overall Goal level	16
3.2.2 Impact not anticipated at project completion	19
3.3 Analysis of factors affecting impact and sustainability	20
3.3.1 Factors promoting sustainability	20
3.3.2 Factors promoting impact	21
3.3.3 Factors inhibiting impact and sustainability	21
3.4 Issues and Problems	22
3.5 Conclusion	22
4 Recommendations and Lessons Learned	23
4-1 Recommendations	23
4.2 Lessons Learned	24
Annexes	

LIST OF ANNEXES

Number	Title
1	Project Design Matrix for Evaluation
2	Equipment Inventory Sheet
3	Status of Project Counterparts

LIST OF TABLES

Number	Title
1	Study Methods Adopted in the Ex-post Evaluation
2	List of Ongoing Programs and Projects of BAP\C
3	Ways of Upgrading/Acquiring Skills by Project Counterparts
4	Summary of Annual Budget of BAPC, 2003-2005
5	Assessment of Sustainability of Project Effects
6	Rice Production Trend in Bohol Province, 1996-2004
7	Poverty Statistics for Bohol Province, 1997-2004

LIST OF FIGURES

Number	Title
1	Project Location
2	Map of Project Sub-site
3	BIAPP Project Framework
4	Stakeholders of the Project
5	Current BAPC Organizational Structure
6	Rice Production Trend in Bohol Province, 1996-2004

ACRONYMS & ABBREVIATIONS USED

AT	Agricultural Technician
ATI	Agricultural Training Institute
BAPC	Bohol Agriculture Promotion Center
BHIP-2	Bohol Irrigation Project-Stage 2
BIAPP	Bohol Integrated Agriculture Promotion Project
CapIS	Capayas Irrigation System
CENVIARC	Central Visayas Integrated Agricultural Research Center
DA	Department of Agriculture
DAR	Department of Agrarian Reform
GMA	Ginintuang Masaganang Ani
GOJ	Government of Japan
GOP	Government of the Philippines
HA	Hectare
HVCC	High Value Commercial Crop
IA	Irrigators association
ICTP	In-Country Training Program
IDO	Institutional Development Officer
ISF	Irrigation service fee
KPA	Key Production Area
LGU	Local Government Unit
MAO	Municipal Agriculturist Office
MOOE	Maintenance and Other Operating Expenses
MT	Metric Ton
NEDA	National Economic Development Authority
NIA	National Irrigation Administration
OPA	Office of the Provincial Agriculturist
PATCO	Provincial Agriculture Technology Coordination Office
PDMe	Project Design Matrix for Evaluation
PhilRice	Philippine Rice Research Institute
PPDO	Provincial Planning and Development Office
PTTC	Project Type Technical Cooperation
RBFS	Rice Based Farming Systems
RDE	Research Development and Extension
RFU	Regional Field Unit
R&D	Research and Development
RFU	Regional Field Unit
ROW	Right-of-Way

Ex-Post Evaluation Summary Sheet

1. Outline of the project	
Country: Philippines	Project Title: Bohol Integrated Agriculture Promotion Project (BIAPP)
Issue/sector: Agriculture	Cooperation scheme: Project Type Technical Cooperation (PTTC)
Division in charge:	Total cost: ----- Yen
Period of cooperation: (R/D): Nov 11, 1996-Nov 10, 2001 (Extension): 2001 – 2003	Partner Country's Implementing Organization: Bohol Agricultural Promotion Center (BAPC)-Department of Agriculture
	Supporting organization in Japan:
Related cooperation: PTTC, Bohol Agricultural Promotion Center (BAPC) Project, 1983-1988 (extended up to 1990)	
<p>1-1. Background of the project:</p> <p>In early 1990s, the Government of the Philippines (GoP) stepped up its efforts to ensure food security. In line with this, the Department of Agriculture (DA) embarked on the Key Production Area (KPA) approach aimed at increasing food production in selected areas of the country including Bohol province being the rice and corn production center of the whole Region VII (Central Visayas). With this KPA approach, the Bohol Agricultural Promotion Center (BAPC), which received a technical cooperation from Japan in 1983 through 1990, was expected to play a vital role in ensuring regional self-sufficiency in rice production. However, it was found out that in order for BAPC to effectively carry out its new role, there was a need to assist the BAPC in improving its institutional, physical and technical capabilities in such new fields as water management for irrigation systems, farm mechanization, technology transfer skills, and improvement of rice-based farming systems for location-specific requirements in the province and the whole Region VII. Considering this limitation and recognizing the immediate need for capacitating the BAPC, the GOP requested the Government of Japan (GOJ) in 1995 for an Aftercare program to the previously implemented PTTC on BAPC project. In response to the request, the GOJ through JICA dispatched several study teams in 1996 to determine the feasibility of the request and to examine the appropriateness of the After-care program.</p> <p>As a result of those investigations, JICA concluded that a new Project Type Technical Cooperation (PTTC) was more appropriate to respond to the request. Thus, the Records of Discussions (R/D) for a new PTTC on the Bohol Integrated Agricultural Promotion Project (BIAPP) was signed by both GOP and GOJ authorities in October 1996. The technical cooperation on BIAPP was implemented from November 1996 to November 2001. It was extended for two years from 2001 to 2003. A Terminal Evaluation study for the project was carried out by JICA in July 2001.</p> <p>This Ex-post evaluation study was conducted to determine impact and sustainability of the project as well as extract lessons from the project cooperation and formulate recommendations to improve planning and implementation of similar projects in the future.</p>	
<p>1-2. Project overview:</p> <p>The project cooperation was aimed at transferring necessary techniques to BAPC counterparts on integrated agricultural promotion.</p> <p>(1) Overall goal</p> <p>The agricultural production and income of farmers in Bohol are increased.</p> <p>(2) Project purpose</p> <p>Agricultural productivity is increased by improving management of farming activities in the Project sub-site.</p>	

(3) Outputs

- 1) Baseline survey and monitoring can be conducted by BAPC staff;
- 2) Improved location-specific technologies for rice-based farming systems are adopted in the project sub-site;
- 3) Effective management of IA activities are carried out in the project sub-site;
- 4) Technical capabilities of extension workers and key farmers in Bohol are enhanced; and
- 5) Agricultural promotion system is improved by enhanced collaborative linkages of BAPC with Local Government Units and concerned organizations.

(4) Inputs (1996-2001)

<Japanese side>

Long-term experts	- 12	Equipment	-
Short-term experts	- 15	Local cost	- 35,774 Yen
Trainees received in Japan	- 15	Others	-

<Philippine side>

Assignment of counterparts	- 36 (including 2 from NIA)	Land and facilities	-
Equipment	-	Local cost	- 41 million Pesos

2. Evaluation team

Members of evaluation team	JICA-Philippines office	
	Commissioned to local consultants from the Center for Local Development Studies (CLDS)	JICA In-house Consultants providing technical guidance and supervision to the study: Mr. Nick Baoy and Engr Rey Gerona
Period of evaluation	October 24, 2005 to December 22, 2005	Type of evaluation: Ex-Post Evaluation

3. Results of evaluation**3.1 Summary of evaluation results****(1) Impact**

The BIAPP was designed to contribute to the overall increase in agricultural production and income of farmers in Bohol Province. Towards this end, the project focused on the improvement of agricultural productivity in the Project sub-site at the Capayas Irrigation System (CapIs) located in the municipality of Ubay. At the Project sub-site level, the average rice yield increased from 2.8 mt per hectare in 1996 to 4.0 mt per hectare in 2001. This average yield was sustained during and after the follow-up cooperation period which ended in 2003. Rice productivity in the entire province likewise improved from 1.96 mt per hectare in 1996 to 2.39 mt per hectare in 2004. This yield improvement, however, was insufficient to generate significant impact on the Overall Goal considering that the total paddy production of 150,000 mt recorded in 2004 was still below the highest production of 162,000 mt attained in 1997 and far below the project target of 250,000 mt for the entire province. The delay in completion of Bohol Irrigation Project-Stage 2 (BHIP-2) which could have expanded the total irrigated area in the province and the severe drought brought about by the El Nino phenomenon in 1998 and 2004 were identified as key factors that inhibited the attainment of the Overall Goal. In addition, the total paddy production of 250,000 metric tons targeted by the project for Bohol province is deemed too high. Historical data for the last 10 years indicate that highest paddy production level achieved by the province was only 160,000 metric tons. In terms of increasing farmers' income, farmers who have adopted the rice-based farming system (RBFS) introduced by BIAPP revealed that their incomes improved as a result of increased farm productivity. Official income statistics at the provincial level, however, revealed that while annual per capita increased from 6,993 pesos in 1997 to 11,239 pesos in 2004, poverty incidence in the province likewise increased from 37.3 percent to 52.8 percent during the same period.

(2) Sustainability

Institutional

The institutional sustainability of the project is ensured by the integration of the BAPC in the network of research centers of DA Region VII (referred to as the Central Visayas Integrated Agricultural Research Center or CENVIARC) in 1999 with the primary task of promoting rice-based farming systems not only in Bohol Province but the entire Central Visayas Region. Moreover, in recognition of its important role in agricultural promotion, the BAPC was designated by the DA-Regional Field Unit (RFU) VII as the Provincial Agriculture Technology Coordination Office (PATCO) for Bohol province responsible for coordinating the agricultural programs and projects of the DA in the province. The institutional sustainability of project is further ensured by the fact that 36 out of 45 former project counterparts remain employed at the BAPC, all of whom have permanent employment status. On the other hand, 18 out of the 20 former project counterparts sent to Japan for training are still working with BAPC applying the knowledge and skills learned from training in their regular functions.

At the Project sub-site, the Municipal Agriculturist Office (MAO) of the Local Government Unit (LGU) of Ubay has assigned three of its seven staff to sustain the extension activities at the CapIS while the BHIP-2 Project Office of the National Irrigation Administration (NIA) has assumed the responsibility of providing institutional development support to the irrigators' associations (IAs). After the project ended in 2003, however, the organizational performance of the four IAs that were activated and strengthened under the project declined as a result of the suspension of irrigation service due to the water shortage in 2004 and the inability of NIA to assign a full-time Institutional Development Officer (IDO) in the area. Key informants at NIA, however, expect the revitalization of the IAs in the next two years as the institutional development component of BHIP-2 is fully implemented in CapIS.

The "farmer-to-farmer" extension approach whereby BIAPP technologies are promoted through the model farms operated by seven (7) key or model farmers was sustained after the project ended in 2003. Aside from the seven key farmers, 12 additional farmers have adopted the rice-based farming systems in the project sub-site at the time of evaluation. In view of its effectiveness in terms of cost and rate of technology adoption, the "farmer-to-farmer" extension strategy is currently being applied by BAPC in its technology promotion activities outside the project sub-site.

Technical

The technical sustainability aspect of the project is likewise secured. Former project counterparts continue to apply and practice the knowledge and skills they have acquired during the implementation of BIAPP in the ongoing rice-based farming systems promotion activities of BAPC. Moreover, the BAPC has been able to develop effective approaches in technology transfer and promotion not only for lowland rice-based farming systems but also for other types of farming systems. While BAPC staff had limited opportunities to attend trainings and seminars after 2003, the survey conducted among former project counterparts revealed that they were able to upgrade their skills through their active participation in BAPC program/project implementation, peer-to-peer sharing, reviewing scientific literature and pursuing graduate studies. At the Project sub-site, most farmers continue to practice the knowledge and skills acquired during the BIAPP implementation such as the use of recommended varieties and synchronous planting thereby sustaining the average yield of 4.0 mt achieved in 2003. The seven model farmers continue to share the knowledge and skills to other farmers with some of them introducing improvements to the technologies introduced during the project. While farmers had lesser opportunities for training after 2003, this was compensated by the continuous technical guidance by agricultural technicians assigned by the LGU of Ubay in the Project sub-site.

Financial

The financial aspect of the project is fairly secured. BAPC, as the center for rice-based farming systems in Region VII, receives a regular budget of 9.9 million pesos every year from the national government through the DA-RFU VII. In addition, BAPC gets a supplemental budget for operations and maintenance from the national programs implemented by other government agencies such as the Philippine Rice Research Institute (PhilRice) and DA's Ginintuang Masaganang Ani (GMA) rice production program. The shift from the "farmers' training-oriented" to the "farmer-to-farmer" extension approach has reduced the cost of BAPC operations in view of the reduced emphasis on costly trainings. But considering that BAPC is tasked to promote rice-based farming systems not only in Bohol but also in the entire region, the current financial capacity of BAPC is certainly limited. At the local government level, the Municipal Agriculture Office (MAO) of the municipality of Ubay has an annual budget of 1.9 million, two-thirds of which is earmarked for the salaries of agricultural extension personnel. In view of its tight operating budget, the extension activities of the MAO have been limited to farm visits by its agricultural technicians. Technology demonstration, seed production and other extension-related activities are mostly subsidized by the national government.

3.2 Factors that have promoted the project

(1) Impact

The adoption of effective agricultural promotion strategy during the follow-up cooperation period, i.e., the "farmer-to-farmer" extension approach contributed to the wider adoption of improved farming technologies in the Project sub-site. Moreover, the efforts of BAPC to promote location-specific rice based farming technologies on a wider scale after the project ended in 2003 outside the Capayas area with the support of the Bohol provincial government are contributing to the achievement of the Overall Goal of increasing productivity and income of farmers in Bohol province.

(2) Sustainability

The high priority given to food security in national and local development plans has helped ensure the continuity of government support to the initiatives of BIAPP to develop location-specific rice based farming systems and effective approaches to agricultural promotion. This is evidenced by the continuous budgetary support to the activities of the BAPC by the national government. Moreover, the recognition of the important role of BAPC in rice-based farming technology promotion by the Bohol provincial government, DA and other national government agencies (e.g., Department of Agrarian Reform and PhilRice) has enabled the BAPC to sustain the project activities after the cooperation ended in 2003. Given its expanded role in CENVIARC and as PATCO for Bohol province, BAPC is placed in a better position to sustain the activities of the BIAPP and help alleviate agricultural productivity and farmers' poverty situation.

3.3 Factors that have inhibited the project

The two-year delay in the completion of the BHIP-2 due to right-of-way acquisition problems and budgetary constraints coupled with the long dry spell brought about by the El Nino phenomenon are two major factors that inhibited the attainment of impact and sustainability of the project. The completion of BHIP-2 could have expanded the irrigated area in Bohol by 5,000 hectares thereby increasing total paddy production in the province. Moreover, the timely operation of BHIP-2 could have minimized the effects of the El Nino phenomenon in 2004 in CapIS as BHIP-2 was designed to supplement the water of Capayas Dam. The long dry spell in 2004, on the other hand, did not only affect agricultural production but also the sustainability of IA activities. The water shortage in 2004 and early 2005 resulted in the decline in IA performance as evidenced by decrease in ISF collection and poor

participation in IA meetings and activities.

3.4 Conclusion

The BIAPP succeeded in demonstrating the potential of increasing agricultural productivity and farmers' income through the promotion of improved location specific rice-based farming technologies and adoption of effective agricultural promotion approaches. The current effort of BAPC to replicate the BIAPP experiences throughout Bohol province will eventually generate some impact on agricultural productivity and farmers' income. Increasing the total paddy production of Bohol in the near future, however, is largely dependent on the expansion of irrigated areas especially with the completion of BHIP-2 and the ability of BAPC to sustain the promotion of location-specific rice-based farming systems in the entire province particularly in farming communities served by irrigation.

3.5 Recommendations

For BAPC

(1) BAPC has to find ways to ensure that BIAPP experience is replicated in BHIP-2 considering that this irrigation project has a great potential of contributing to a significant increase in rice production in Bohol province. Strengthening the collaborative linkages between BAPC and the NIA-BHIP-2, the concerned IAs, and the LGUs in municipalities benefited by BHIP-2 is important in this regard.

(2) There is also need for BAPC to continue providing technical support to the extension activities of the municipal government of Ubay to protect the gains of the BIAPP in the Project sub-site. Considering that the CapIS was intended as a showcase of BIAPP, the BAPC should ensure that the positive effects of the project on farmers' productivity and income are sustained.

(3) Moreover, BAPC needs to increase its efforts in mobilizing external resources in order to accelerate the rice-based farming systems promotion activities in the province. The current efforts of mobilizing funds from PhilRice and DAR could be augmented by tapping the financial resources of local governments and donor organizations. A Program for External Resource Accessing (PERA) may be formulated for this purpose.

For NIA

(1) As the agency tasked to operate and maintain the CapIS, NIA should ensure the continuity to the institutional development program in the Project sub-site. Because of the budgetary constraints faced by the Philippine government, NIA may not be able to hire additional permanent Institutional Development Officers (IDOs) for the CapIS in the medium-term. However, the on-going process of "personnel rationalization" within the NIA bureaucracy provides an opportunity for the NIA sub-office in Bohol to advocate for the re-assignment of NIA regional staff to provide much needed institutional development support to priority projects like BHIP-2;

(2) There is also a need for NIA to provide a role for BAPC to replicate the BIAPP experience in BHIP-2. In particular, NIA may consider tapping the expertise of former project counterpart staff from BAPC in developing location-specific technologies for rice-based farming systems and supporting the IDO in improving the management capability of IAs to be benefited by the project.

For JICA

(1) To sustain the gains produced by the project, JICA may consider exploring the possibility of formulating an

In-country Training Program (ICTP) aimed at propagating the BIAPP experience among extension agents in the country. Albeit in limited scale, BAPC has started disseminating technologies in some farm areas in Siquijor and Iloilo provinces. These technology-dissemination activities will be further strengthened and enhanced if an ICTP would be implemented by BAPC.

(2) To maximize the knowledge and skills learned by BAPC counterparts, JICA may consider advocating for the adoption of the successful experiences of BIAPP in its ongoing and future technical cooperation projects in the agriculture sector. In this regard, BAPC former counterpart staff may be mobilized as lecturers or resource-persons to training, seminars and conferences organized by on-going technical cooperation projects. BAPC may also receive visiting farmers, agricultural technicians and extension workers of on-going or future technical cooperation projects that involve promotion of rice-based farming systems.

3.6 Lessons learned

(1) Proper recognition of the role and mandate of the implementing and cooperating agency at the project planning stage is key to project sustainability. In the case of BIAPP, there was a smooth transfer of responsibility for continuing the activities at the Project sub-site as the future roles of NIA and the LGU were determined at the outset.

(2) Timing of project implementation is critical in realizing higher project objectives. In this project, the attainment of Overall Goal was largely dependent on the expansion of irrigated area through the BHIP-2. The contribution of the Project Purpose to the achievement of the Overall Goal would have been more significant if the BHIP-2 was completed as scheduled or when the technical cooperation was about to end.

(3) Formulating realistic target indicators is essential in project designing. In this project, the indicators set at the Overall Goal level were too high considering that up until 1996, the total annual paddy production in Bohol never reached 160,000 metric tons and the highest record achieved in poverty reduction at the national level never reached 10 percent. Monitoring key assumptions is, therefore, essential for adjusting project targets during project implementation.

EX-POST EVALUATION STUDY OF THE BOHOL INTEGRATED AGRICULTURE PROMOTION PROJECT

1. Outline of the Ex-post Evaluation Study

1.1 Background and Purpose of the Study

Based on the request of the Government of the Philippines (GOP) in 1995, the JICA and the Bohol Agriculture Promotion Center (BAPC) of the Department of Agriculture Regional Field Unit VII (DA-RFU VII) implemented the Project Type Technical Cooperation for the Bohol Integrated Agriculture Promotion Project (BIAPP) from November 1996 to November 2001. The BIAPP Terminal Evaluation Study Team dispatched in July 2001 concluded that the Project Purpose could not be attained within the project cooperation period. Thus, following the recommendations of the Study Team, the PTTC was extended for two more years from 2001 to 2003. Two years after the project ended, JICA selected BIAPP from among the completed technical cooperation projects to be subjected to ex-post evaluation study for the Japanese Fiscal Year (JFY) 2005.

With a view towards improving the quality and ensuring the transparency of JICA-assisted projects, this ex-post evaluation study seeks to determine and impact and sustainability of BIAPP. The study also aims to extract lessons from the project cooperation and formulate recommendations to improve the planning and implementation of similar projects in the future.



Figure1. Project location

1.2 Evaluation Team and Study Period

In order to ensure objectivity of the evaluation, JICA commissioned the Center for Local Development Studies (CLDS), a local consulting firm, to undertake the ex-post evaluation study from October 24, 2005 to December 22, 2005. The CLDS assigned Mr. Edgar Kintanar and Mr. Victor Lorenzo to carry out the study as Team Leader and Survey Assistant, respectively.

The JICA Philippines Office through its In-house Consultants, Engr. Nick Baoy and Engr. Rey Gerona provided technical guidance and supervision to the Study Team.

1.3 Study scope and methodology

The study was conducted in Bohol province where the project was implemented and in Cebu City where the DA-RFU VII is located. In conducting the study, the evaluation team focused on the impact and sustainability criteria defined by DAC-OECD as follows:

Impact – the foreseen or unforeseen, favorable or adverse effect of the project on the target groups or persons possibly affected by the project. The study team examined the impact attained at the Overall Goal level of the project and those not anticipated at project completion.

Sustainability – the extent to which the positive effects, as a result of the project, will still continue after the external assistance is concluded. The evaluation team examined the institutional, financial, technical sustainability aspects of the project as well as the sustainability of project effects.



The study methods used in the ex-post evaluation are enumerated below:

Table 1. Study Methods Adopted in the Ex-post Evaluation

Stakeholders	Respondents	Methods
Implementing Agency		
BAPC	Project Manager (1) Chief, R&D Unit (1) Chief, Technology Support and Promotion Unit (1) Chief, Planning & Monitoring Unit (1) Key Project Counterparts (20)	Interview Questionnaire Group Discussion Document collection
Responsible Agency		
DA-RFU VII	Regional Director (1) Chief, Planning Division (1) Chief, Research Division (1)	Interview
Beneficiaries – direct		
Counterparts from cooperating agencies	MAO, LGU Ubay (1) ATs, LGU Ubay (4) IDO, NIA-BHIP-2 (1)	Interview Group Discussion
Beneficiaries at the Project sub-site	Model Farmers (7) Extension Farmers (5) Farmer-Members of Beneficiary IAs (20)	Interview Group Discussion Questionnaire
Beneficiaries – indirect		
Other cooperating agencies	Provincial Agriculturist (1) OPA staff (3) ATI Bohol staff (2)	Interview Group Discussion
Other farmers outside the project communities	Rainfed rice farmers outside Capayas IS (15)	Interview Group Discussion

Note: Numbers in () denote number of respondents.



Focus group discussion with the MAO and extension personnel of LGU of Ubsy



Focus group discussion with IA members of Lateral C1 in Bgy. Casate, Ubay,

2. Overview of the Project

2.1 Background of the Project

In the early 1990s, the GOP stepped up its efforts to attain food security. In line with this, the DA embarked on the Key Production Area (KPA) approach aimed at increasing food production in selected areas of the country including Bohol province being the the rice and corn production center of the whole Region VII (Central Visayas). With the KPA approach, the Bohol Agriculture Promotion Center (BAPC), which came into existence as a result of a PTTC assistance from Japan from 1983 to 1990, was expected to play a vital role in ensuring rice self-sufficiency in Central Visayas. However, it was found out that in order for the BAPC to effectively carry out its new role, there was a need to assist the BAPC in improving its institutional, physical and technical capabilities in such new fields as water management for irrigation systems, farm mechanization, technology transfer, and improvement of rice-based farming systems for location-specific requirements in the province and in the whole of Region VII. Considering this limitation and recognizing the urgent need for capacitating the BAPC, the GOP requested the GOJ in 1995 for an aftercare program to the BAPC Project. In response to the request, the GOJ through JICA dispatched an Aftercare Study Team in January 1996. Based on discussions with GOP authorities, the Study Team found out that the request was not suited for an aftercare but for a new project assistance by the GOJ. Thus, in May 1996 and subsequently in August 1996, JICA dispatched Study Teams to assist the GOP in the formulation of new technical cooperation.

Thus, in October 1996, the GOP and the GOJ signed the Records of Discussions for a new PTTC on the Bohol Integrated Agriculture Promotion Project (BIAPP). The technical cooperation on BIAPP was implemented from November 1996 to November 2001 with the BAPC of DA-RFU VII as the counterpart agency. The BIAPP Terminal Evaluation Study Team dispatched in July 2001, however, concluded that the Project Purpose of BIAPP could not be attained within the project cooperation period. Based on the

recommendations of the Study Team, the PTTC was extended for another two years from November 2001 to November 2003.

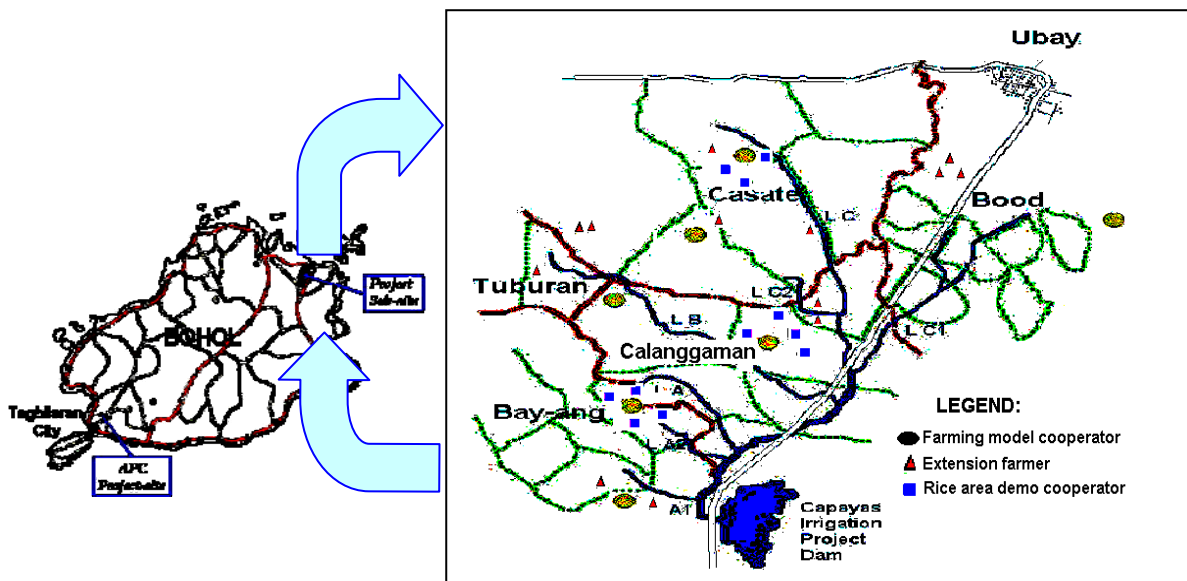


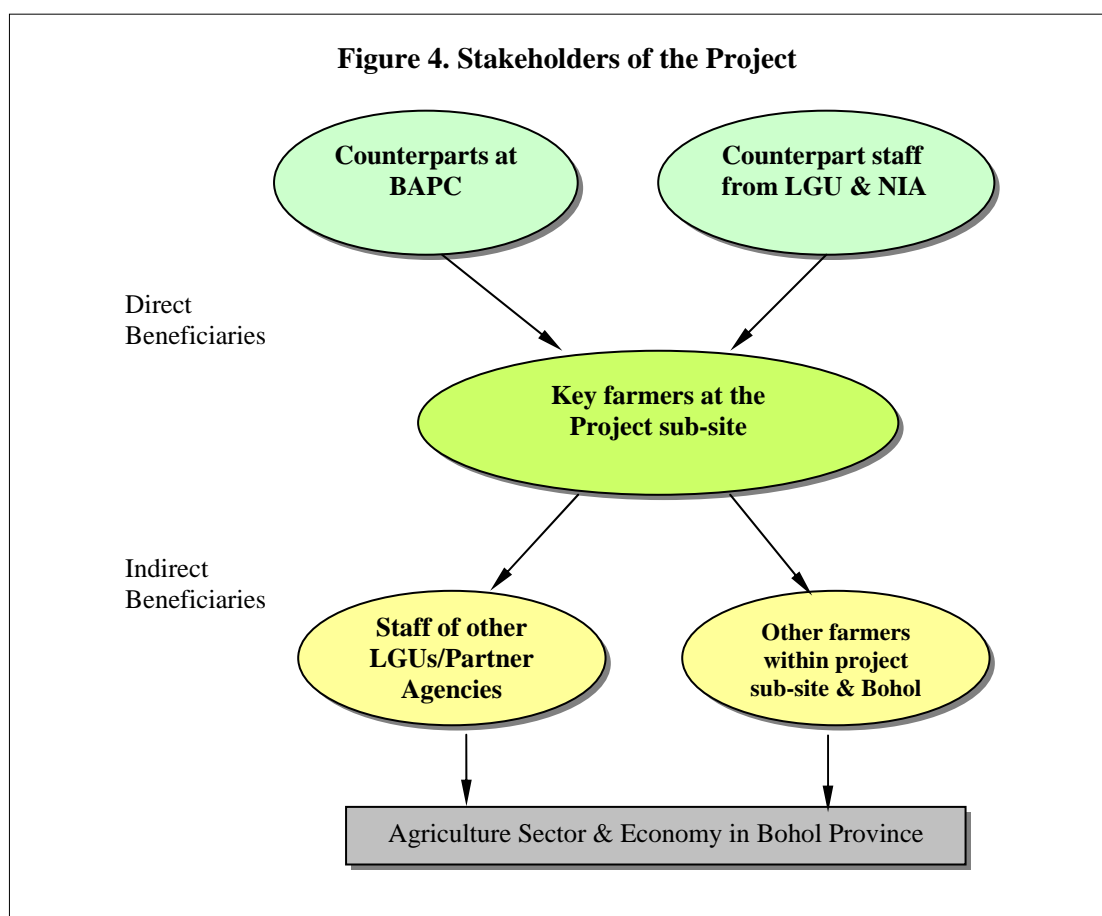
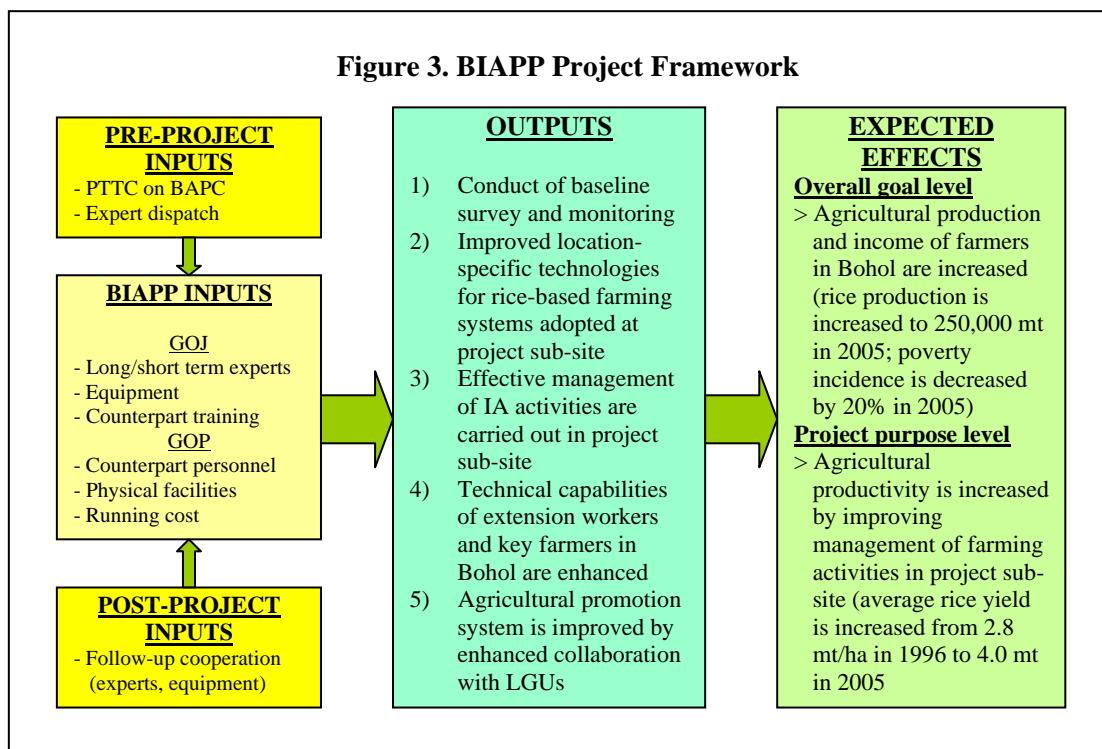
Figure 2. Map of Project sub-site

2.2 Project framework

In line with the Overall Goal of increasing the agricultural production and income of farmers in Bohol province, the BIAPP aimed at increasing agricultural productivity in the Project sub-site by improving the management of farming activities (Please refer to Annex 1 for the Project Design Matrix). Towards this end, BIAPP was designed to accomplish the following outputs:

- (a) Conduct of baseline survey and monitoring by BAPC staff
- (b) Development and adoption of improved location specific technologies for rice-based farming systems in the project sub-site;
- (c) Improvement of management capability of IAs in the project sub-site;
- (d) Enhancement of the technical capabilities of extension workers and key farmers in Bohol; and
- (e) Improvement of agricultural promotion system by enhancing collaborative linkage of APC with LGU and concerned organizations.

The overall framework and stakeholders of the Project is described in Figures 3 and 4 below.



3. Study Results

3.1 Sustainability

3.1.1 Institutional sustainability

Implementing agency

The institutional sustainability of the BAPC, the implementing agency of BIAPP, is secured by its formal integration in the CENVIARC in 2003, an integrated network of RDE centers in Central Visayas under the DA-RFU VII, with the primary mandate of promoting rice-based farming systems not only in Bohol Province but in the entire region. In addition, the BAPC was also designated by the DA RFU VII as the Provincial Agriculture Technology Coordinating Office (PATCO) responsible for coordinating the agricultural programs and projects of DA in Bohol Province.

In order to effectively fulfill its role as the RDE center for rice-based farming systems, the BAPC was re-organized in 2003 with two main divisions: Research and Development Division (RDD) and Technology Support and Promotion Division (TSPD). (see Figure 6). The RDD is primarily involved in applied R&D of rice-based farming systems including varietal screening and selection, crop production practices improvement, farming systems improvement and technology demonstration. The TSPD, on the other hand, provides extension support, education and training services to BAPC clients including LGU extension workers, farmers and other government agencies (see Table 2 for list of BAPC programs and projects). All projects and activities of both divisions are aimed at agricultural promotion in Bohol province with emphasis on developing and disseminating rice-based farming systems in the province.

In addition, the ownership issue on the land being occupied by the BAPC has been resolved with the issuance of a Presidential proclamation transferring the ownership of the land from the military to the DA.

Status of Former Project Counterparts

Of the 45 personnel who served as project counterparts during the implementation of BIAPP, 36 still remain employed with the BAPC. Of the nine personnel who left BAPC, seven were transferred to other units within DA-RFU VII or went back to their mother unit while two have retired from government service. Seven of the remaining 36 personnel are currently on study leave completing their masters or doctoral studies.

Eighteen out of the 20 former project counterparts sent to Japan for training during the project period remain with BAPC, four of whom are pursuing higher studies abroad. Those who have remained with the BAPC are actively involved in research and extension activities related to rice-based farming systems. Meanwhile, project counterparts who did not receive training in Japan but participated in the implementation of the BIAPP or attended local trainings and seminars conducted through the project remain employed at BAPC.

All former project counterparts have permanent employment status. It was gathered from the survey, however, that almost half of the BAPC technical personnel occupy positions with salaries that are of the same level or even lower than those received by LGU extension workers causing some demoralization among the staff.

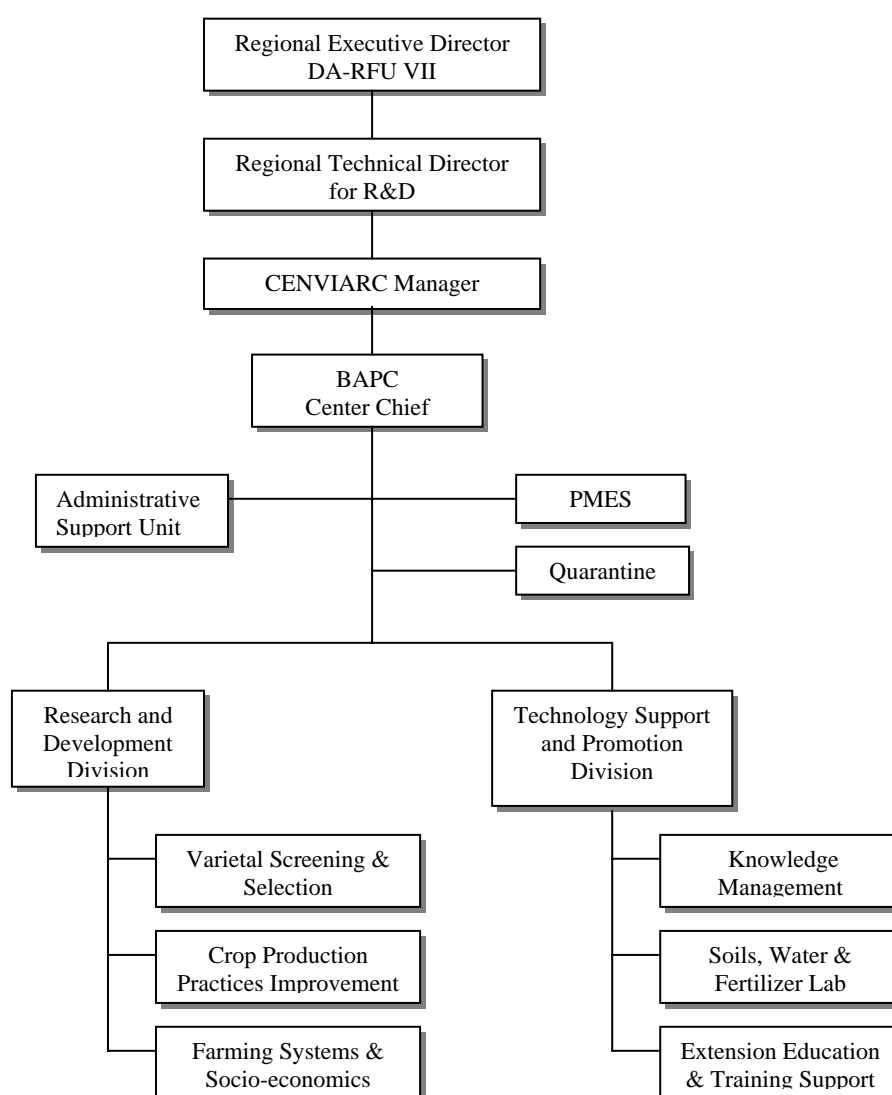
Table 2. List of Ongoing Programs and Projects of Bohol APC

Program	Projects/Activities
Research and development	a) Varietal screening and selection b) Crop production practices improvement c) Farming systems improvement d) Technology demonstration
Production support services	a) Collection and monitoring of agromet data b) Soil and laboratory services
Extension support, education and training	a) Staff development b) Training of farmers and key leaders c) Promotion of BIAPP Rice-based Farming System Model

	d) Enhancing productivity of rice farmers through diversified and integrated farming systems (Palayamanan Model) e) Promotion of hybrid rice utilization in the Bohol Province
Policy formulation, planning and advocacy services	a) Facility operation and maintenance b) Planning, monitoring and evaluation c) Continued support on GMA programs (GMA Rice, GMA HVCC, etc)

Source: BAPC

Figure 5. Current BAPC Organizational Structure



Source: BAPC

Cooperating agencies

The LGU of Ubay and the NIA-BHIP-2 Project Office served as the cooperating agencies during the implementation of BIAPP. At the end of the project in 2003, the provision of extension services in the Project sub-site was turned over to the LGU of Ubay while the provision of institutional development support services to the IAs was transferred to the NIA-BHIP-2 Project Office. This arrangement ensures institutional sustainability considering that the functions turned over to these agencies are consistent with their mandates. After the project, the MAO of LGU Ubay assigned three of its seven agricultural extension workers to sustain extension support services to farmers in the Project sub-site. For its part, the NIA has designated an Institutional Development Officer (IDO) to provide technical advice and monitor the activities of the four IAs in the Capayas Irrigation System (CapIS). After 2003, however, the IDO was changed twice affecting the continuity of institutional development support to the IAs.

Irrigators' Associations

The BIAPP was instrumental in activating and strengthening of the four IAs being served by the CapIS. After the project ended in 2003, however, the management of IA activities has deteriorated as shown by poor attendance in IA meetings, decline in ISF collection, and poor O&M of canals. As gathered from the field survey, this situation was brought about by the severe water shortage in 2004 and early 2005 which resulted in suspension of irrigation service in more than half of the irrigation service area and the inability of NIA to assign a full-time IDO in the CapIS.

Key informants at NIA expect the revitalization of the IAs in the near term as they strive to improve the irrigation service and intensify their institutional development activities in the area. The implementation of the institutional development component of the BHIP-2 over the next two years which covers the four IAs in the Project Sub-site will be the key to the sustainability of these organizations.

Key Farmers

During the follow-up cooperation period, the project adopted the “farmer-to-farmer” extension strategy whereby BIAPP technologies were promoted through model farms operated by model or key farmers. Out of some 557 farmers comprising the four IAs in the project sub-site, seven (7) were selected to serve as model farming cooperators or key farmers.

As a key farmer, he/she should be: (a) an active and respected member of one of the four IAs in the Capayas area; (b) willing to offer his/her farm as technology demonstration site; (c) willing to adopt and apply the BIAPP technologies in his/her farm; (d) willing to provide the labor requirements of the rice-based farming system model to be implemented by the project in his/her farm; (e) capable of sustaining the model farm after the project; and (f) willing to share his/her knowledge and skills to other farmers within the project sub-site.

After the project ended in 2003, the key farmers were able to sustain their model farms and continued to share their knowledge and skills to other farmers in the area. Recognizing its effectiveness, this extension approach was sustained by BAPC in its technology promotion activities outside the project sub-site wherein key farmers and their farms serve as channels for disseminating rice-based farming systems technologies.

3.1.2 Technical sustainability

The technical sustainability of the project is ensured by the continuous application by the former project counterparts of the knowledge and skills they have acquired during the implementation of BIAPP in the programs and projects of BAPC. Using the BIAPP experience, the BAPC has been able to develop effective approaches in technology transfer and promotion not only for lowland rice-based farming systems but also for other types of farming systems. Currently, the BAPC is utilizing the “farmer-to-farmer” extension approach in propagating rice-based farming systems in project expansion sites within Bohol province. Developed during the follow-up cooperation period of

BIAPP, the “farmer-to-farmer” technology promotion strategy was found to be more effective and less costly than the conventional extension approaches. As claimed by BAPC informants, the “farmer-to-farmer” strategy improved the technology adoption rate by farmers and reduced the cost of technology promotion as extension work was focused on few key farmers while the model farms became the venue for learning new farming techniques by other farmers.

While BAPC staff had limited opportunities to attend trainings or seminars after the project, the survey conducted among 18 former project counterparts revealed that they are able to upgrade their skills through “active involvement in implementation of BAPC programs and projects”, “learning from colleagues”, “reviewing literatures” and “pursuing graduate studies.”

Table 3. Ways of Acquiring/Upgrading Skills by Project Counterparts

Ways of Acquiring/ Upgrading Skills	Frequency Of responses	% of total respondents
a. Active participation in program/project implementation	16	90
b. Learn from colleagues	15	71
c. Literature review (books, internet, etc)	13	67
d. Take graduate studies	6	38
e. Attend seminars/workshops	4	5

Note: Total respondents: 18; most respondents had multiple responses.

The survey conducted at the Project sub-site revealed that most farmers still practice the knowledge and skills they have acquired during the implementation of BIAPP such as use of recommended varieties, synchronous planting, among others. It was also learned that the seven model farmers continue to share their knowledge and skills to their neighboring farmers. Some model farmers have even modified the technologies introduced by the projects such as the method of planting watermelon, incorporation of lime and use of organic fertilizer to improve soil fertility, among others.

Due to BAPC’s budgetary constraints, it was observed that follow-up trainings given to farmer-beneficiaries after 2003 were very limited except for a few orientation seminars on hybrid rice production for farmer-leaders conducted by the DA. The lack of follow-up trainings among farmer-beneficiaries in the

project sub-site, however, is compensated by the continuous technical guidance by the LGU extension workers assigned in the area thereby ensuring the project's technical sustainability.

Utilization and Maintenance of Equipment Provided under the Project

Generally, the facilities and equipment provided by the project to the BAPC are in good condition and have been very useful in the replication of BIAPP experiences in areas outside the project sub-site except for some computer hardware and LCD slide projector which were found to be not working at the time of the survey (see Annex 2 for Status of Equipment). Because of fast-changing technology, some of the equipment (e.g. computers and audio-visual equipment) have become obsolete. Through the supplemental budget provided by PhilRice, BAPC was able to acquire a new LCD projector in the early part of 2005. Equipment provided by the project to the model farmers, on the other hand, are being frequently utilized and well maintained.

3.1.3 Financial sustainability

As the RDE center for rice-based farming systems in Central Visayas, BAPC receives a regular budgetary allocation from the national budget coursed through the DA. Since 2002, BAPC annual budget remained at the level of PhP 9.9 million with about two-thirds allocated to MOOE (see Table 4). Because of recent financial difficulties of the national government, the actual MOOE budget releases to BAPC were smaller than the allocated amount. In some cases, budget releases were delayed thereby affecting the ongoing projects and activities of the Center. The BAPC gets supplemental MOOE funds from national programs and/or agencies (e.g., GMA Rice Program and PhilRice) but these are obligated for special projects like the technology demonstrations on hybrid rice and orientation seminars for farmers and extension workers.

Despite its limited operating budget, the BAPC is still able to perform its RDE functions in rice-based farming systems through collaborative projects with PhilRice, DAR and other agencies. Moreover, the shift from the "farmers'

training-oriented” to the “farmer-to-farmer” extension approach has reduced the cost of BAPC’s operations in view of the reduced emphasis on costly trainings. But considering that BAPC is tasked to promote rice-based farming systems not only Bohol but also in the entire region, the current financial resources are certainly limited.

Table 4. Summary of annual budget of BAPC, 2002-2005, in million Php

Year	PS	MOOE	GMA Fund	Total
2002	3.376	6.544	0.650	10.570
2003	3.376	6.544	-	9.920
2004	3.376	6.544	0.021	9.941
2005	3.376	6.376	0.300	10.220

* Proposed budget; PS – personal services; MOOE – maintenance & other operating expenses
Source: BAPC

At the LGU level, budget allocation to the Municipal Agriculturist’s Office (MAO) amounts to Php 1.9 million annually, however, about two-thirds of this budget goes to salaries of agricultural extension personnel. Given its tight operating budget, the extension activities of the MAO at the Project sub-site are currently limited to farm visits. A few ongoing extension projects like technology demonstration and rice seed distribution are subsidized by the national government. In 2006, the MAO proposed a budget of Php 2.4 million but even if the proposed amount is approved, it is still limited considering that the municipality of Ubay is composed of more than 20 agricultural barangays.

3.1.4 Sustainability of project effects

In order to attain the Project Purpose of increasing agricultural productivity in the project sub-site, the BIAPP aimed at accomplishing the following Outputs: (a) conduct of baseline survey and monitoring; (b) adoption of improved location-specific technologies for rice-based farming systems in the project sub-site; (c) effective management of IA activities in the project sub-site; (d) enhancement of the technical capabilities of extension workers and key farmers in Bohol; (e) improvement of agricultural promotion system by enhancing collaboration linkage of APC with LGUs and concerned organizations.

The field survey revealed that the achievement of project Outputs was sustained after the project was completed in 2003 except for Output (c) wherein a significant deterioration in the management of IA activities at the Project sub-site was noted. Nevertheless, the target average production of 4.0 metric tons per hectare was sustained in the Project sub-site. Key informants revealed that the average yield could have been higher if not for the long dry spell in 2003.

Moreover, the survey conducted among model and non-model farmers at the Project sub-site revealed that the increase in farm production brought about by the adoption of improved farming technologies resulted in significant increase in farm incomes. Majority of the farmer-respondents, however, perceive that the escalating price of farm inputs is gradually eating up on their net incomes. For instance, the price of fertilizers almost tripled from P400 per bag of urea in 2003 to Php 1,150 per bag in 2005. The long dry spell in 2004 and early 2005 resulted in crop losses for some farmers or no income at all for those who were unable to plant due to the water shortage.

Findings on the sustainability of project effects after the project are summarized Table 5 below.

Table 5. Assessment of Sustainability of Project Effects

Output	Assessment	Remarks
(a) Baseline survey and monitoring can be conducted by BAPC staff	Sustained	Skills acquired by APC staff on conduct of baseline survey and monitoring were applied in expansion sites within Bohol where rice-based farming systems were propagated.
(b) Improved location-specific technologies for rice-based farming systems are adopted in the Project sub-site	Sustained	Aside from the 7 model farmer-cooperators, 12 additional farmers have adopted the rice-based farming system introduced by the project. Moreover, technologies promoted by BIAPP in the Project sub-site on use of recommended varieties, pest control, synchronous planting, fertilizer application, water management, among others, are being applied by majority of farmers in the Project sub-site.

(c) Effective management of IA activities are carried out in the Project sub-site	Fairly sustained	A decline in ISF collection rate and poor attendance of members in IA meetings after 2003 were observed. Rate of ISF collection rate went down mainly due to the water shortage resulting from the long dry spell in 2004. Informants from NIA opine that IA performance will improve with the normalization of irrigation service in 2005 wet season.
(d) Technical capabilities of extension workers and key farmers in Bohol are enhanced.	Sustained	Enhancement of skills of extension workers and key farmers was sustained by BAPC through its extension support and training programs and technology demonstration activities not only on lowland irrigated rice but also on rain-fed rice, vegetables and corn.
(e) Agricultural promotion system is improved by enhanced collaboration linkage of APC with LGU and concerned organizations	Sustained	BAPC's linkage with LGUs and concerned organizations within Bohol (e.g., ATI, OPA and NIA) is strengthened by the designation of BAPC as the Provincial Agriculture and Technology Coordinating Office (PATCO). Increased participation of LGUs in promotion of rice-based farming systems in areas outside the Project sub-site was noted.

Source: BAPC Annual Reports, 2003-2004

3.2 Impact of the Project

3.2.1 Impact attained at the overall goal level

Based on the PDMe, the overall goal of the BIAPP is to increase agricultural production and income of farmers in Bohol province. The PDMe implied that achievement of the Overall Goal is to be measured by two indicators: increase in total paddy production and reduction in poverty incidence of the province. Towards the attainment of the Overall Goal, the BIAPP focused on increasing the average rice yield of farmers in the Project sub-site from 2.8 metric tons per hectare at the start of the Project in 1996 to 4.0 metric tons per hectare at the end of the Project in 2001. The follow-up cooperation from 2001 to 2003 maintained the same target level of average rice yield of 4.0 metric tons per hectare.

Impact on total paddy production

Data obtained from the BAPC revealed that the BIAPP succeeded in increasing the average rice yield at the Project sub-site from 2.8 metric tons per hectare in 1996 to at least 4.0 metric tons per hectare in 2001 and onwards. Field survey among model farming cooperators indicated that they even attained a higher average yield of 4.3 metric tons per hectare in 2003. In spite of the dry spell in 2004, the average yield of 4.0 metric tons per hectare was sustained in the Project sub-site.

Table 6. Average rice yield in the Project sub-site in metric tons per hectare, 2001-2004

Crop year	1999	2000	2001	2002	2003	2004
Wet season	3.5	4.6	4.5	3.9 (4.3)	4.6	4.5
Dry season	-	3.2	3.4	3.6	3.5 (4.0)	3.5
Annual average	3.5	3.9	4.0	3.8	4.0	4.0

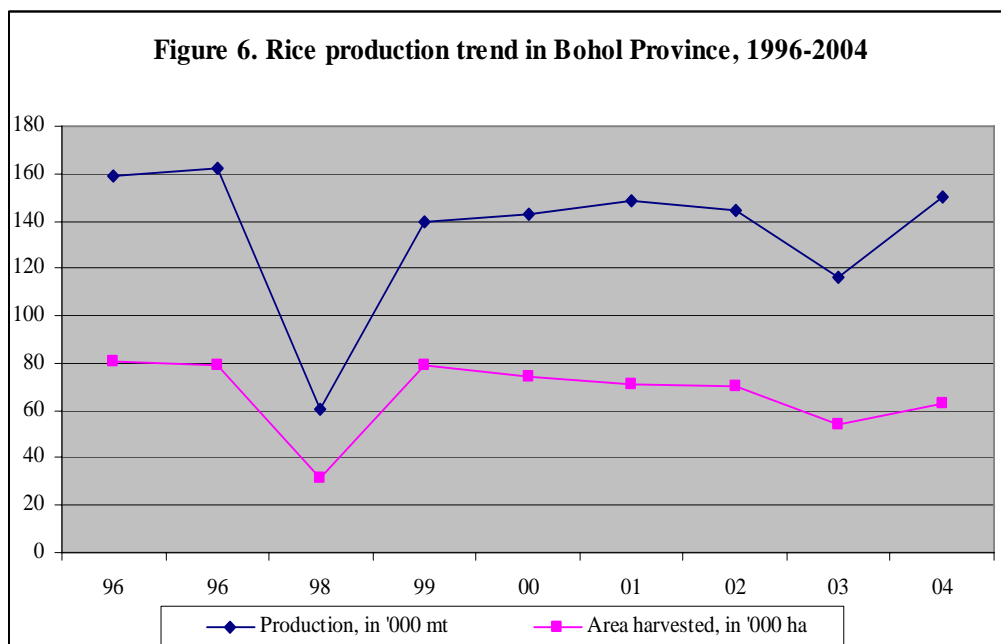
Source: BAPC; figures in () indicate average yield obtained by 7 farming model cooperators

At the provincial level, rice productivity likewise improved from 1.96 per hectare in 1996 to 2.39 metric tons per hectare in 2004. This yield increase, however, was insufficient to generate significant impact on the Overall Goal considering that the total paddy production of 150,000 metric tons recorded in 2004 was still below the highest production of 162,000 metric tons attained in 1997 and far below the project target of 250,000 metric tons for the entire province. The lowest rice production output was recorded in 1998 at 60,633 metric tons as a result of the severe drought brought about by the El Nino phenomenon that occurred during the period. In 2004, an increase in rice production was noted despite the decrease in harvested area which may be attributed to the significant improvement in average yield during the same period.

Table 7. Rice Production Trend in Bohol Province, 1996-2004

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004
Production in '000 mt	158.8	161.9	60.6	139.4	142.9	148.9	144.8	116.3	150.5
Area harvested in '000 ha	80.9	78.9	31.8	78.9	73.9	70.9	70.4	54.2	63.1
Average yield in mt per ha	1.96	2.05	1.91	1.77	1.93	2.10	2.06	2.15	2.39

Source: BAS



Source of basic data: BAS

According to key informants, the paddy production target of 250,000 metric tons for Bohol province was based on two key assumptions: (i) that the total harvested area will be maintained at about 80,000 hectares; and (ii) that the total irrigated area in Bohol province will expand with the completion of the Bohol Irrigation Project – Stage 2. Considering that total area harvested has been decreasing in recent years and expansion of total irrigated area is unlikely to happen in the near term, key informants at BAPC are pessimistic about achieving the total paddy production of 250,000 metric tons in Bohol province even if average rice yield of all rice farmers in the entire province approximate the 4.0 metric tons per hectare.

Nevertheless, the sustained promotion of BIAPP technologies by BAPC to rice farmers outside the project sub-site may have contributed to the increase in average rice yield in the province from 2.15 metric tons per hectare in 2003 to 2.39 metric tons per hectare in 2004. Future increase in paddy production is likely in view of the plan of the provincial government to intensify the promotion of BIAPP technologies to other rice producing municipalities in the province. Under the plan, BAPC will provide technical support to the LGUs in replicating BIAPP extension strategies including the establishment of location-specific technology demonstration farms. With the adoption of BIAPP

technologies by farmers outside the project sub-site, further increase in average yield is expected thereby generating more impact on overall paddy production in the province.

Impact on Income and Poverty Reduction

Farmers who have adopted the rice-based farming systems revealed that their incomes have significantly improved not only due to increase in paddy yields but also because of extra income from cash crops. Official poverty statistics for Bohol Province obtained from the Bohol Provincial Planning and Development Office and NEDA Region VII, however, indicate that the poverty incidence in the province has been increasing from 37.3 percent in 1997 to 52.8 percent in 2004. This is despite the increase in annual per capita income from PhP 6,993 in 1997 to PhP 11,329 in 2004. Based on these data, it is apparent that the increase in income was insufficient to lift the poor from the poverty threshold. These data also suggest that reducing poverty in Bohol may require interventions other than increasing agricultural productivity.

Table 7. Poverty Statistics for Bohol Province, 1997-2004

Year	Annual per capita income in pesos	Number of poor families	Poverty incidence in %
1997	6,993	75,647	37.3
2000	9,125	99,135	47.3
2003	10,759	119,161	51.6
2004	11,239	124,164	52.8

Sources of data: NEDA Region VII and Bohol PPDO

3.2.2 Impacts not anticipated at project completion

Positive impact

Some impacts not anticipated at project completion may be attributed to the Project. In recognition of their skills and competence developed through the project, some BAPC counterpart staff are frequently invited as resource persons in in-country trainings and seminars while one staff was dispatched to Ghana as “third country expert” on appropriate farm mechanization. Some model farmers who acted as farmer-teachers, on the other hand, assumed more

responsible roles in their communities (e.g., some got elected as barangay officials) as they developed self confidence and gained the respect of other farmers in the community.

Negative impact

There is no negative impact observed by the study team during the evaluation period. Also, the study team does not foresee any negative impact arising from the project in the future.

3.3 Analysis of Factors Affecting Impact and Sustainability

3.3.1 Factors promoting sustainability

High priority given to food security by national and local government

After the project ended in 2003, increased rice production to achieve food security remained a high priority in national and local development plans. As such, the government sustained its budgetary support to the agriculture promotion activities of the BAPC in Bohol province. Considering Bohol's potential contribution to food security in Central Visayas, the Government is expected to continue its support to the BAPC for the development of location-specific rice-based farming technologies and effective agricultural promotion approaches to increase agricultural productivity in the region.

Recognition of the role of BAPC in rice-based farming technology promotion

Under the present set-up of CENVIARC, BAPC is identified as the RDE center for rice-based farming systems in recognition of its superior facilities and highly-competent manpower. Moreover, the BAPC was designated by the DA-RFU VII as the Provincial Agriculture Technology Coordinating Office (PATCO) tasked to provide necessary support to the provincial government in implementing agricultural programs and projects. Given its expanded role, BAPC is placed in a better position to sustain the activities of BIAPP and help improve agricultural productivity and reduce poverty in the province.

3.3.2 Factor promoting impact

Adoption of innovative agricultural promotion approaches

The adoption of the “farmer-to-farmer” extension approach during the follow-up period of BIAPP contributed to the wider adoption of improved farming technologies in the Project sub-site. Moreover, the efforts of BAPC to promote continued location-specific farming technologies in other areas of the province after the project cooperation ended in 2003 are contributing to the Overall Goal of increasing income and productivity of farmers in the province.

3.3.3 Factors inhibiting impact and sustainability

Delay in the completion of BHIP-Stage 2

The BHIP-Stage 2 was scheduled for completion in 2005. Due to major implementation bottlenecks (e.g., ROW acquisition, budgetary constraints of GOP, etc.), the completion of the project was delayed for two years. As a result, the projected expansion of irrigated area in Bohol which could have brought about a significant increase in rice production did not materialize. Moreover, the CapIS became more vulnerable to water shortage during the drought period in 2004 and early 2005. Under the overall irrigation plan of NIA, excess water generated by BHIP-2 will be diverted to the Capayas Dam during the dry season to avert any shortage of irrigation water.

Long dry spell in 2004 and early 2005

The long dry spell in 2004 and in early 2005 has significantly affected agricultural production in the entire province especially in the irrigated areas. It also affected the sustainability of the IAs as shown by the decline of organizational performance.



A view of Capayas Dam which supplies irrigation water to 550 hectares of rice land in the Project sub-site.

3.4 Issues/Problems

3.4.1 Limited budget for technology extension and promotion

While BIAPP was able to transfer the necessary technical skills to BAPC project counterparts and LGU extension workers, the BAPC and LGU personnel are unable to fully apply the acquired skills due to limited budget allocation for technology extension and promotion. Presently, both BAPC and LGU are dependent on supplemental budgets coming from national programs such as GMA Rice and Corn Programs and fund transfers from national agencies like DAR and PhilRice.

3.4.2 Lack of continuity in institutional development support to the IAs

The frequent changes of Institutional Development Officer (IDO) assigned to the CAPIS after the project ended in 2003 somehow affected the performance of IAs due to discontinuity of institutional development activities in the Project sub-site. Sustaining the institutional development support to the IAs will continue to pose as a challenge if NIA is unable to assign a permanent IDO in CapIS.

3.4.3 Indicators for Overall Goal were too high

The annual paddy production target of 250,000 metric tons in 2005 for Bohol province was deemed too high considering that historical data from 1996 to 2004 indicate that the highest production level achieved by the province was only about 160,000. The project's poverty reduction target, on the other hand, was too ambitious considering that the highest record in reducing poverty even at the national level has not even reached 10 percent over the last 20 years.

3.5 Conclusion

The BIAPP succeeded in demonstrating the potential of increasing agricultural productivity and farmers' income through the promotion of improved location-specific rice-based farming technologies and adoption of effective

agricultural promotion approaches. While the target level of paddy production and poverty reduction in Bohol province require more time to be achieved, the effort of BAPC to replicate the BIAPP experiences in more areas of the province is gradually generating some impact on agricultural productivity as evidenced by the improvement of provincial average rice yield in recent years. Increasing the total paddy production in Bohol in the coming years, however, is largely dependent on the expansion of irrigated areas especially with the completion of BHIP-2 and the ability of the BAPC to sustain the promotion of location-specific rice-based farming systems in the entire province particularly in farming communities served by irrigation.

4. Recommendations and Lessons Learned

4.1 Recommendations

4.1.1 For BAPC

- Find ways to ensure that BIAPP experience is replicated in BHIP-2 considering that this irrigation project has a great potential of contributing to a significant increase in rice production in Bohol province. Strengthening the collaborative linkages between BAPC and the NIA-BHIP-2, the IAs and the LGUs in municipalities benefited by BHIP-2 is important in this regard.
- Continue to provide technical support to the extension activities of the municipal government of Ubay to protect the gains of the BIAPP in the Project sub-site. Considering that the Capayas area was intended as a showcase of BIAPP, the BAPC should ensure that the positive effects of the project on farmer's productivity and income are sustained.
- Increase its efforts in mobilizing external resources in order to expand its rice-based farming systems promotion activities in the province. The current efforts of mobilizing resources from PhilRice and DAR could be augmented by tapping the financial resources of other government agencies and donor organizations. A program for external resource accessing may be formulated for this purpose.

4.1.2 For NIA

- Ensure the continuity of institutional development support in the Project sub-site. Due to budgetary constraints, NIA may not be able to hire a permanent IDO in the medium term. However, the ongoing process of rationalizing the NIA bureaucracy can provide opportunity for the NIA sub-office in Bohol to advocate for re-assignment of NIA regional staff to priority projects like BHIP-2.
- Provide a role for BAPC to replicate the BIAPP experience in BHIP-2. In particular, NIA may consider tapping the expertise of former project counterpart staff from BAPC in development and promotion of location-specific technologies for rice-based farming systems and supporting the IDO in improving the management capability of IAs to be benefited by the project.

4.1.3 For JICA

- Explore the possibility of formulating an In-country Training Program (ICTP) aimed at propagating the BIAPP experience among extension agents in the country. Towards this end, the ICTP can take advantage of the highly-trained staff and adequate training facilities of BAPC.
- Advocate for the adoption of the successful experiences of BIAPP in its ongoing and future technical cooperation projects in the agriculture sector. In this regard, JICA can support BAPC in documenting their experiences for dissemination to planners and implementers of similar projects.

4.2 Lessons Learned

- Proper recognition of the role and mandate of the implementing and cooperating agency at the project planning stage is key to project sustainability. In the case of BIAPP, there was a smooth transfer of

responsibility for continuing the activities at the Project sub-site as the future roles of BAPC, NIA and the LGU were determined at the outset;

- Timing of project implementation is critical in realizing higher project objectives. In this project, the attainment of Overall Goal was largely dependent on the expansion of irrigated area through the BHIP-2. The contribution of the project to the Overall Goal would have been significant if the BHIP-2 was completed as scheduled or when the technical cooperation was about to end.

- Formulating realistic targets is essential in project design. In this project, the indicators set at the Overall Goal was too high considering that up until 1996, the total annual paddy production in Bohol never reached 160,000 metric tons and highest record achieved in poverty reduction at the national level never reached 10 percent. Monitoring key assumptions is, therefore, essential for adjusting project targets during project implementation.

ANNEX 1

Project Design Matrix for Evaluation (PDMe)

BOHOL INTEGRATED AGRICULTURE PROMOTION PROJECT

Project Duration: November 11, 1998-November 10, 2001

Target Area (Project sub-site): Land cultivated by Irrigators' Association (IA) in Capayas

Target Group: IA members (farmer beneficiaries) in CIP

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
<p>Overall Goal</p> <p>Agricultural production and income of farmers in Bohol are increased.</p>	<p>Total rough rice production in Bohol is increased to 250,000 tons by 2005</p> <p>Poverty incidence is decreased by 20% by 2005 in Bohol</p>	<p>Information from Bureau of Agricultural Statistics</p> <p>Information from Provincial Development Office</p>	<p>a. Bohol remains as Central Visayas's primary agriculture area</p> <p>b. National policy on provision of physical facility for agriculture stays</p> <p>c. National policy on rice price remains stable</p>
<p>Project Purpose</p> <p>Agricultural productivity is increased by improving management of farming activities in the project sub-site.</p>	<p>Average rice yield in irrigated lowland in the Project sub-site is increased from 2.8 tons/ha (1996) to 4.0 tons/ha by 2001.</p>	<p>Survey by BAPC</p>	<p>a. Provincial government maintains higher priority for food security and poverty alleviation.</p> <p>b. BAPC remains the technology promotion center for rice-based farming system.</p>
<p>Outputs</p> <p>(1) Baseline survey and monitoring can be conducted by BAPC staff.</p> <p>(2) Improved location specific technologies for rice-based farming system are adopted in the project sub-site</p> <p>(3) Effective management of IA activities are carried out in the Project sub-site.</p>	<p>1. One baseline report and 3 monitoring reports are published</p> <p>2-1 95% of IA members adopt synchronous rice production farming system in 2001</p> <p>2-2 90% of IA members plant recommended rice varieties in irrigated area of the sub-site in 2001.</p> <p>3-1 Rate of attendance to meetings related with IA activities is over 90%</p> <p>3-2 Irrigation service fee</p>	<p>1. BAPC publications and records</p> <p>2-1 Survey by BAPC</p> <p>2-2 Record by BAPC</p> <p>3-1 Record of BAPC and NIA</p> <p>3-2 Record of BAPC and</p>	<p>a. BAPC retains the function of research, training and extension on rice-based farming system.</p> <p>b. Trained BAPC staff continue their work at BAPC</p> <p>c. NIA continues to efficiently operate the Capayas Irrigation System</p> <p>d. Economic condition is stable in Bohol.</p>

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption				
<p>(4) Technical capabilities of extension workers and key farmers in Bohol are enhanced</p> <p>(5) Agricultural promotion system is improved by enhanced collaborative linkages of BAPC with Local Government Unit (LGU) and concerned organizations</p>	<p>collection is over 80%</p> <p>3-3 Accounting books are well kept by all the four (4) IAs</p> <p>4-1 80% of extension workers on rice-based farming system are trained</p> <p>5-1 Rate of attendance to liaison officers' meeting is over 90%</p>	<p>NIA</p> <p>3-3 Accounting books</p> <p>4. BAPC record and report</p> <p>5. Attendance list of workshop/meeting</p>					
<p>Activities</p> <p>(1) Formulation of detailed workplan based on the baseline survey and conduct of monitoring of Project achievement</p> <p>1) Execution of baseline survey</p> <p>2) Preparation of project activity plan and priority research subjects</p> <p>3) Monitoring of the project</p> <p>(2) Improvement and dissemination of location specific technologies for a rice-based farming system in the project sub-site</p> <p>1) Improvement of location specific technology</p> <p>2) Improvement of cropping systems</p> <p>3) Development of appropriate water management technology</p> <p>4) Improvement of the operation and maintenance system of irrigation facilities</p> <p>5) Improvement of farm machinery operations and postharvest technology</p> <p>6) Improvement of farm machinery utilization and management</p> <p>7) Improvement of farm management efficiency</p> <p>8) Enhancement of extension activity in order to disseminate appropriate technology</p>	<p style="text-align: center;">Inputs</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">(Japanese side)</th> <th style="width: 50%;">(Philippine side)</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> <p>1. Long-term experts</p> <p>1.1 Team leader</p> <p>1.2 Coordinator</p> <p>1.3 Agronomy</p> <p>1.4 Water management</p> <p>1.5 Farm mechanization</p> <p>1.6 Farm management</p> <p>2. Short-term experts</p> <p>3. Equipment and machinery</p> <p>3.1 Agricultural machinery, equipment and spare parts</p> <p>3.2 Vehicles necessary for TCP activities</p> <p>3.3 Teaching materials and communication equipment including audio-visual equipment</p> <p>3.4 Technical instrument and equipment</p> <p>3.5 Other equipment necessary for TCP activities</p> <p>4. Counterpart training</p> <p>Training of Philippine personnel in Japan</p> </td> <td style="vertical-align: top;"> <p>1. Counterpart personnel</p> <p>1.1 Project Manager</p> <p>1.2 Deputy Project Manager</p> <p>1.3 Counterpart for the expert (at least 2 for each)</p> <p>1.4 Administrative and other staff to support the Project activities</p> <p>2. Physical facilities</p> <p>2.1 Buildings, facilities, office space for the Project</p> <p>2.2 Space for machinery and equipment</p> <p>2.3 electricity, water and communication facilities</p> <p>2.4 Other land, buildings and facilities necessary for the project</p> <p>3. Running expenses</p> <p>All running expenses necessary for the implementation of the Project</p> <p>4. Others</p> <p>Establishment and management of committee necessary for project implementation</p> </td> </tr> </tbody> </table>		(Japanese side)	(Philippine side)	<p>1. Long-term experts</p> <p>1.1 Team leader</p> <p>1.2 Coordinator</p> <p>1.3 Agronomy</p> <p>1.4 Water management</p> <p>1.5 Farm mechanization</p> <p>1.6 Farm management</p> <p>2. Short-term experts</p> <p>3. Equipment and machinery</p> <p>3.1 Agricultural machinery, equipment and spare parts</p> <p>3.2 Vehicles necessary for TCP activities</p> <p>3.3 Teaching materials and communication equipment including audio-visual equipment</p> <p>3.4 Technical instrument and equipment</p> <p>3.5 Other equipment necessary for TCP activities</p> <p>4. Counterpart training</p> <p>Training of Philippine personnel in Japan</p>	<p>1. Counterpart personnel</p> <p>1.1 Project Manager</p> <p>1.2 Deputy Project Manager</p> <p>1.3 Counterpart for the expert (at least 2 for each)</p> <p>1.4 Administrative and other staff to support the Project activities</p> <p>2. Physical facilities</p> <p>2.1 Buildings, facilities, office space for the Project</p> <p>2.2 Space for machinery and equipment</p> <p>2.3 electricity, water and communication facilities</p> <p>2.4 Other land, buildings and facilities necessary for the project</p> <p>3. Running expenses</p> <p>All running expenses necessary for the implementation of the Project</p> <p>4. Others</p> <p>Establishment and management of committee necessary for project implementation</p>	<p>a. There is no social obstruction (land ownership, etc.) to farmers' participation to the Project</p> <p>b. LGU and NIA actively participate and support the project</p> <p>c. No severe drought affects dam water reservation</p> <p>d. Budget is available to implement the project</p> <p>e. BAPC staff (both permanent and casual is fully assigned)</p> <p>f. No excessive incidence of major pests and diseases</p>
(Japanese side)	(Philippine side)						
<p>1. Long-term experts</p> <p>1.1 Team leader</p> <p>1.2 Coordinator</p> <p>1.3 Agronomy</p> <p>1.4 Water management</p> <p>1.5 Farm mechanization</p> <p>1.6 Farm management</p> <p>2. Short-term experts</p> <p>3. Equipment and machinery</p> <p>3.1 Agricultural machinery, equipment and spare parts</p> <p>3.2 Vehicles necessary for TCP activities</p> <p>3.3 Teaching materials and communication equipment including audio-visual equipment</p> <p>3.4 Technical instrument and equipment</p> <p>3.5 Other equipment necessary for TCP activities</p> <p>4. Counterpart training</p> <p>Training of Philippine personnel in Japan</p>	<p>1. Counterpart personnel</p> <p>1.1 Project Manager</p> <p>1.2 Deputy Project Manager</p> <p>1.3 Counterpart for the expert (at least 2 for each)</p> <p>1.4 Administrative and other staff to support the Project activities</p> <p>2. Physical facilities</p> <p>2.1 Buildings, facilities, office space for the Project</p> <p>2.2 Space for machinery and equipment</p> <p>2.3 electricity, water and communication facilities</p> <p>2.4 Other land, buildings and facilities necessary for the project</p> <p>3. Running expenses</p> <p>All running expenses necessary for the implementation of the Project</p> <p>4. Others</p> <p>Establishment and management of committee necessary for project implementation</p>						

<p>Activities, cont'n.</p> <p>(3) Improvement of management capability of IA in the Project sub-site</p> <p>1) Facilitation of IA organization improvement and IA meeting</p> <p>2) Facilitation of reviewing policies and making rules</p> <p>3) Improvement of accounting system and financial management</p> <p>(4) Enhancement of training</p> <p>1) Training of agricultural extension workers of LGU</p> <p>2) Training of key farmers in Bohol</p> <p>(5) Enhancement of collaborative linkage to BAPC with LGU and concerned organization in carrying out of the project activities of (1) to (4) above</p> <p>1) Enhancement of collaborative linkage of BAPC with line agencies and national institutions</p> <p>2) Enhancement of collaborative linkage of BAPC with LGU and the concerned local organizations</p>		<p><u>Pre-condition</u></p> <p>a. Farmers in the CIP are cooperative in the Project activities</p> <p>b. Counterpart personnel is assigned for each Japanese experts</p> <p>c. GOP counterpart fund is available</p> <p>d. BAPC maintains its key role in rice-based farming system</p> <p>e. DA retains physical location of BAPC</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ANNEX 2

EX-POST EVALUATION OF BOHOL INTEGRATED AGRICULTURE PROMOTION PROJECT

Equipment Inventory Sheet

FY	Name of Equipment		Qty	Location	Condition of Equipment 0: working X: not working	Frequency of use (Regularly, Occasionally, Rarely or Never)	Problems Encountered After Project Completion / Other Remarks
	Class	Description					
96	Copier	Panasonic EP7722	1	BAPC	0	Regularly	
	Pick-up truck	4WD, 2777cc	4	ditto	0	ditto	
	Vehicle	4WD Pajero 2800 cc	1	ditto	0	ditto	
	Cargo truck	Mitsubishi diesel 6,577 cc	1	ditto	0	ditto	
97	Generator	Yanmar LA 100AE	1	ditto	0	Occasionally	
	Dryer	Sakura SD6000	1	ditto	0	Regularly	
	Combined wind vane and anemograph	L405DT	1	ditto	0	Occasionally	
	LCD projector	LC 4200	1	ditto	x		No spare parts; model phased out of the market
98	Bending machine	Maxima V-812-6	1	ditto	0	Occasionally	
	Lathe machine	Extron 4164-690	1	ditto	0	ditto	
	Metal sheet roller	Metalex FR66016	1	ditto	0	ditto	
	Minibus	Mitsubishi Rosa	1	ditto	0	Regularly	
	Water distillation	Advantec GS-590	1	ditto	0	ditto	
	Total station	Sokkia Set-2010	2	ditto	0	Occasionally	
	Evaporation meter	ERR-101	1	ditto	0	Regularly	
	Printing machine	Risograph GR3750	1	ditto	0	Occasionally	
Printing machine	GR 2700	1	ditto	0	ditto		
99	Seed storage		1	ditto	0	Regularly	
	Generator	Kubota ASKR 180, 8KVA	1	ditto	0	ditto	
	Hand tractor	Kubota K-120	1	ditto	0	ditto	
	Generator	Olympian 100 kw, 125KVA	1	ditto	0	Occasionally	
	Tractor	Yanmar F-37EX	1	ditto	0	Regularly	
00	Vehicle	Mitsubishi Adventure GLX Diesel 2500cc	2	ditto	0	ditto	
01	Computer	Powermac G4	1	ditto	0	ditto	CD ROM needs repair
	Hand tractor	Kubota K-120	1	ditto	0	ditto	
	Atomic absorption spectrophotometer	Shimazu Model AA-8200	1	ditto	0	ditto	High cost of spare parts

ANNEX 3**Current Status of Former Counterpart Personnel**

Name of Counterpart		Position During BIAPP	Current Position	Remarks
1	Engr. Eugene C. Cahiles	Project Manager	Project Manager, BAPC Center Chief and PATCO for Bohol	
2	Engr. Antonio S. Du	Chief, Operations		Assigned at CENVIARC, Ubay, Bohol
3	Ms. Mary Jean C. Du	Section Head		On Study leave at the University of the Philippines -PhD
4	Mr. Edwin D. Palgan	Technical Staff		Retired; transferred to the City Government of Bohol City Registry of Deeds
5	Ms. Concepcion C. Payapaya	Unit Head -Soils	Researcher, Soil and Crop Production Improvement	
6	Ms. Rizalina G. Cahiles	Section Head	Researcher, Farming Systems	
7	Ms. Ma. Wencisa B. Egama	Technical Staff		On Study Leave at the University of the Philippines
8	Ms. Efieda B. Castillon	Technical Staff	Rice, Unit Chief, Researcher	
9	Mr. Felix B. Tubiano	Technical Staff	Researcher, Rice AXR Seed Production In-Charge	
10	Ms. Celerina T. Galorio	Technical Staff	Chief, Planning and Monitoring	
11	Mr. Jose M. Bunachita	Technical Staff	Researcher, Hybrid Rice	
12	Mr. Florentino M. Evasco, Jr.,	Technical Staff	Researcher, Soil, Water and Fertilizer Unit	
13	Mr. Rolando Alaan	Technical Staff	Researcher, Vegetable (PART) Guindulman Coordinator	
14	Ms. Adoracion T. Dela Cruz	Technical Staff	In-Charge, Information Technology	
15	Ms. Concordia G. Damalcricio	Technical Staff	Researcher, Technology Support/Promotion	
16	Ms. Maria Chona E. Maleza	Technical Staff		On Study Leave, PhD in Japan
17	Mr. Felipe T. Apale	Technical Staff		Officer-in-Charge, Center Chief, DA Stock Farm
18	Mr. German M.	Technical Staff	Researcher, Upland	

	Makiling		Crops	
19	Ms. Rosenda R. Bucea	Technical Staff	Planning Officer	
20	Mr. Tito L. Canas	Technical Staff	Training Staff	
21	Engr. Rufa O. Doria	Technical Staff		On Study Leave - Canada
22	Engr. Edna N. Yu	Technical Staff		On Study Leave - Canada
23	Engr. Camila A. Descallar	Technical Staff		NIA-PIO staff detailed at BIAPP
24	Engr. Saturnino A. Jamilo	Technical Staff		NIA-PIO staff detailed at BIAPP
25	Engr. Sergio Sumaoy	Section Head	Researcher, Crop Production Improvement/Farm Mechanization	
26	Engr. Rodrigo R. Pechon	Technical Staff		On Study Leave in Japan
27	Engr. Efren Anora	Section Head	In-charge, GMA Infrastructure	
28	Mr. Rico Rommel A. Vazquez	Technical Staff	Researcher, Crop Production Improvement	
29	Mr. Alexander P. Dohig	Technical Staff	Mechanic, Motor pool Department	
30	Engr. Noel T. Cahiles	Technical Staff	Researcher, Farm Mechanization, GMA Infrastructure	
31	Mr. Octavio R. Quipanes	Technical Staff	Farm Machine Operator/Assistant Facility Maintenance	
32	Dr. Marcial D. Agad	Section Head		Transferred to BAR in July 2000
33	Engr. Roxanna B. Epe	Technical Staff		Resigned
34	Mr. Medardo B. Aparece	Technical Staff	Researcher, Technology Support. Promotion	
35	Ms. Wilfreda C. Malayao	Technical Staff	Researcher, Rice	
36	Ms. Aurea M. Madrio	Unit Head	Acting Administrative Officer; Head Internal Control Unit	
37	Mr. Erlindo L. Samblaceno Jr.	Unit Head	Chief, Technology Support and Promotion	
38	Ms. Concordia G. Damalerio	Technical Staff	Researcher, Technology Support Promotion	
39	Ms. Maria Corazon A. Patindol	Technical Staff		On Study Leave, MS in Japan
40	Mr. Abdel B. Apalisok	Technical Staff		Transferred to DARFU7 in Cebu

				City
41	Ms. Marlene C. Cubero	Technical Staff	R&D Chief, GMA Rice Coordinator, Acting Personnel Officer, Chairman, Inspection Committee	
42	Mr. Rogelio B. Davalan	Technical Staff		Transferred to DA-RFU7 in Cebu City
43	Ms. Grace Len Dagala	Section Head	Chief, Training Unit/Coordinator, Palayamanan, Calape	
44	Ms. Barbara O. Pacatang	Technical Staff	Training Staff	
45	Mr. Hector Eldred D. Encabo	Technical Staff	AV System In-Charge/Training Staff	