

3. RESULTS OF THE STUDY

3.1 Assessment of PMDP Impact

3.1.1 Updates on the Policy/Environmental/Legislative Setting for PMDP

Though the GOP policy environment generally remains unchanged, consultant notes DA's opportunity to reaffirm its leadership role and initiative in defining a more forward looking structure for tighter coordination and partnership especially for its two front liners (BPI and FPA) in the pesticide residue and formulation monitoring system.

During the Terminal Evaluation the following key points were brought up.

Key Point 1	To make the pesticide monitoring system more effective, continued Project activities and cooperation among the implementing organizations are necessary.
Key Point 2	In order to achieve the overall goal of ensuring a safe food supply, the accumulation of scientific data and enhancement of the coordination between BPI and FPA are necessary.
Key Point 3	The implementing Organization was two organizations rather than one, BPI and FPA, which hindered implementation of the Project at the beginning, but later the relationship between the two became closer, the members of the two organizations worked together as a team, holding meetings frequently to achieve the Five Outputs.
Key Point 4	To ensure sustainability, it is necessary for BPI and FPA to undertake project activities as routine work.
Key Point 5	The Department of Agriculture (DA) should strengthen the linkage between and among its bureaus, attached agencies, and other stakeholders to sustain the gains from the Project.

Consultant positively noted that these points were later absorbed into an Agreement that actually sets the new policy environment for the PMDP 2 years after the project completion.

BPI² and FPA³ mandates, mission and strategies were mutually reinforced with the signing of the *Minutes of the Meeting of Monitoring Activity of the Joint GOJ and GOP Evaluation Team* on 3 October 2004. Four major agreements were forged between BPI and FPA. These agreements set the GOP "institutional road map" to firm up the

² BPI pursues its mandate of "establishing pesticide laboratories all over the country to monitor levels of pesticide residue in crops in order to protect the local and international consumers from possible health hazards and to generate data for the establishment of MRLs. (L.O.I. 986). Also BPI will "provide laboratory services in relation to establishment and maintenance of quality standards for various agricultural commodities." RA 7394 Consumer Act of the Philippines.

³ FPA, pursuant to PD 1144, continues to (a) establish and enforce tolerance level and good agricultural practices (GAP) for the use of pesticides in raw agricultural practice; (b) restrict or ban any pesticide and the formulation of any pesticide in specific areas or during certain period upon evidence that the product is an imminent hazard, has caused serious damage to crops, fish, and livestock and to public health and environment; (c) prevent the importation of agricultural commodities containing pesticide residues above the accepted tolerance levels; and (d) inspect establishments and premises of pesticide handlers to ensure compliance to industrial health, safety and anti pollution regulations

establishment of a Comprehensive SYSTEM of Monitoring Residual Pesticides and Pesticide Formulation at national targets of effectiveness.

Table 3.1.1-A Latest Policy Agreements by GOJ & GOP Joint Monitoring Team for PMDP

Agreement 1	To ensure sustainability, mainstreaming of the PMDP should be undertaken to include appropriate deployment of contractual and casual personnel and provision of necessary budget for the maintenance of the PALs
Agreement 2	A three year integrated Post Project Plan would be prepared by BPI and FPA to strengthen the national program on pesticide monitoring in agricultural commodities taking into consideration the targets, activities, personnel, budget and progress of each activity, among others. Based on this plan, DA is requested to take necessary measures for the realization of this plan. Furthermore the results of the monitoring should be disseminated and applicable regulations enforced.
Agreement 3	For registration of new pesticides, <i>crop residue trials</i> should be done in the Philippines in accordance with stakeholders. Thereafter, the label information should reflect the results of the trials.
Agreement 4	The DA should strengthen the linkages between and among its bureaus and attached agencies and other stakeholders to sustain the gains of the Project.

Among the four agreements, agreements 2 and 4 are considered as most important for the following reasons:

In **Agreement 2**, a three year integrated Post Project Plan would be prepared by BPI and FPA to strengthen the national program on pesticide monitoring in agricultural commodities taking into consideration the targets, activities, personnel, budget and progress of each activity, among others.

In this connection, BPI and FPA prepared the Plan with short and long term targets. However, the proposed total budget (PhP 43,851,100) for Post PMDP Activities 2000 to 2005 was not

provided. The proposed budget sharing from BPI was PhP 34,057,300 (78%) while FPA budget share was PhP 9, 793,000.00 (22%).

This study shows that agreement 2 produced a negative impact. That is, although the Plan was legitimized by GOP officials, GAA could not meet this allocation. Thus the unintended use of regular BPI and FPA funds would be funds source of the Plan.

Agreement 4, on the other hand, has direct positive impact on the institutional relationships among and between BPI and FPA and other organizational players within the pesticide monitoring system. In relation to “Important Assumption No. 3” in the re-crafted PDMe “*System is comprehensive enough to cover all strategic information capture points. (Other agencies are integrated into the system for wider coverage; Imported crops are also inspected regularly)*”, consultant is glad to note the first steps towards developing a more comprehensive System for Monitoring Pesticide Residue and Formulation that now weighs in the crucial roles other actors must play.

In fact, Consultant attended the Joint Committee meeting with Videoconference on December 9, 2004 at the UP-Diliman, an occasion which aimed to “*operationalize inter-institutional linkages between BPI, FPA, and other sector players like CROPLIFE, Agri-Growers, Exporters, Farmer Associations and members of the Pesticide Industry*”. The setting up of the MRL Committee with BPI and FPA PMDPP Coordinators as Chairperson and Vice Chairperson respectively, is also noted as a major step forward in this direction.

In this view, DA should strengthen the linkages between and among its bureaus and attached agencies and other stakeholders to sustain the gains of the Project. Post PMDP activities between DA agencies, institutions and stakeholders have started, though limited. BPI and FPA believe that the limitation is due to funding constraints. Furthermore, the establishment of the MRL Committee composed of CROPLIFE, Pesticide Industry, Agri Growers and Exporters etc is a first towards stronger linkages and a more comprehensive system.

This finding constitutes a positive development in the institutional environment has resulted in increased awareness among stakeholders on the need for more unified efforts to achieve the goal of providing safe food. Specifically, discussions are already held between private and public sectors focusing on strategies to develop and implement an effective SYSTEM

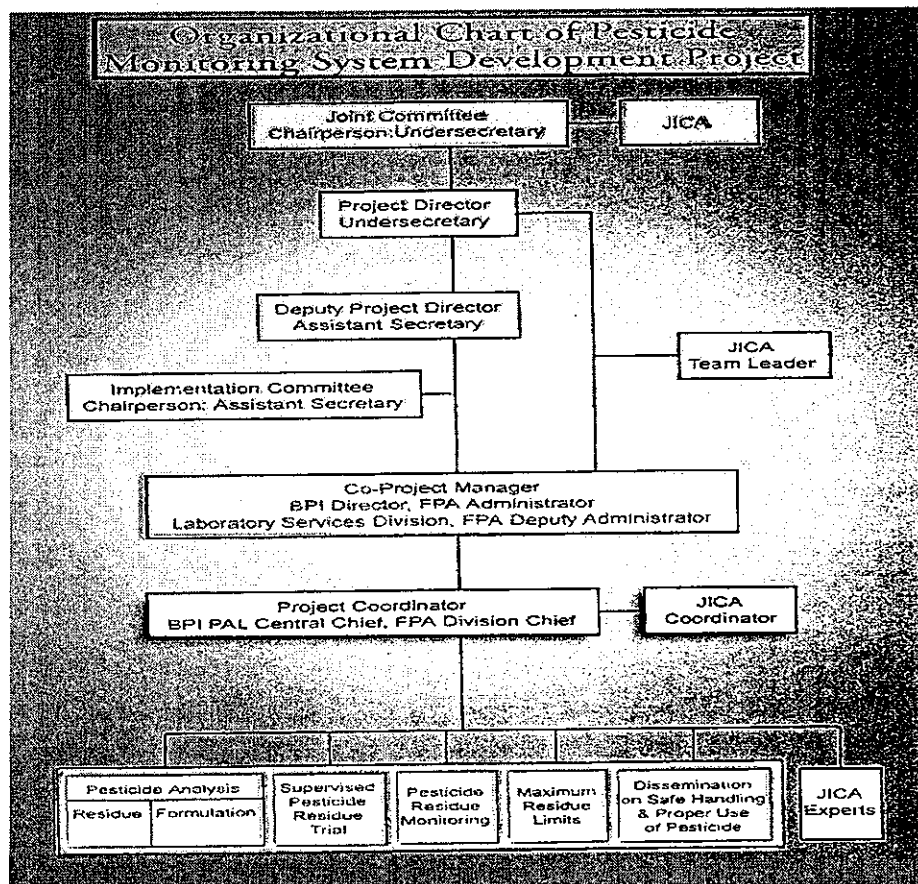
3.1.2 Institutional Impact

To explore the institutional impact of the project to the National Pesticide Residue/Formulation Monitoring System and individually to both BPI and FPA, Consultant revisited the roles defined for BPI and FPA in the system during the PTTC to see if there has been any change at the time of this study. Necessarily, consultants probed for changes (current or expected) in the policy environment (mandates or mission and strategy, organizational design) of both BPI and FPA. A look at the external environment such as support from the DA (supervising institution) and as mentioned, the necessary legislative setting/policy environment helped determine if conditions are favorable to the institution.

3.1.2.1. Institutional Arrangements within the Context of PMDP

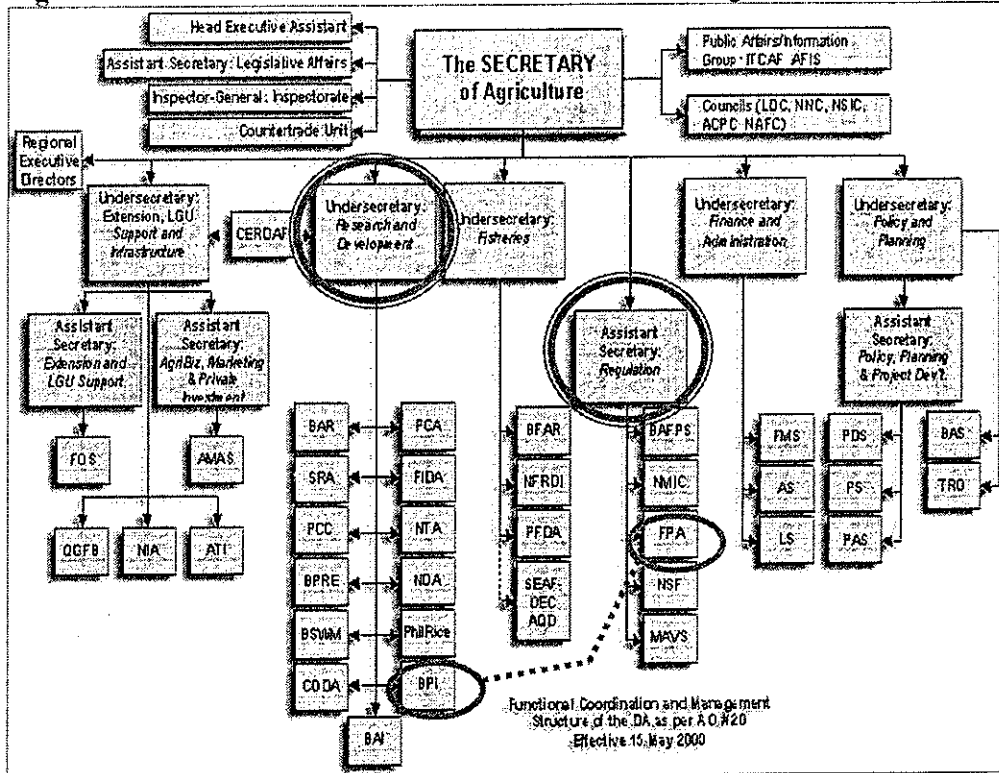
Within the institutional arrangements of PMDP, there were no problems with the PMDP management and implementation because all actions and activities and performance standards are adequately handled and coordinated by a joint committee headed by one Undersecretary (see Figure 3.1.2.1-A).

Figure 3.1.2.1-A



However, the post-PMDD institutional arrangements had been changed with the issuance of Administrative Order # 20, effective May 15, 2000, which reorganized the DA bureaucracy (see Figure 3.1.2.1-B).

Figure 3.1.2.1-B. Current Functional Coordination and Management Structure of the DA



The newly reorganized coordinative and management structures among DA agencies (as shown in Figure 3.1.2.1-B) is now different from the PMDD organizational design (as shown in Figure 3.1.2.1-A). While BPI is under the supervision of an Undersecretary for Research and Development, FPA is under the supervision of the Assistant Secretary for Regulation, which is directly under the supervision of the DA Secretary. The reorganization of the DA bureaucracy may have produced negative impact in terms of coordination between BPI and FPA. In terms of sustainability, this suggests that after completion of the PMDD, the DA Secretary will have to directly manage and supervise coordination between BPI and FPA, instead of putting the two agencies within the supervision and control of one undersecretary.

On the other hand, during the 3rd Joint Committee Meeting Post Project Activity of PMDD held on March 18, 2004 at the PBI-NPAL Seminar Room attended by representatives of BPI, FPA, NEDA, DA and JICA, an accomplishment report was presented by BPI and FPA for the months of August 2003 to February 2004. (see Annex No. PT.1). In this presentation, Mr. Shunichi Nakada (JICA-DA) queried the set-up and working relationship between BPI's NPAL and the FPA since the establishment of FPA's new fertilizer and pesticide formulation laboratory.

Dr. Dario Sabularse (FPA) said there would be no duplication of work with the BPI since, *“the registrant company will be submitting to them the new chemical together with the procedure to build capability of the new laboratory to analyze the new product.”* He further explained that for provincial operations, there are officers in each province that make sure rules and regulations of the FPA are being followed and they coordinate with the industries on product stewardship programs, conduct Good Agricultural Practice (GAP) seminars and help train pest applicators, dealers and accredited responsible care officers (ARCO).

Figure 3.1.2.1-C, as shown below, illustrates the existing relationship and/or coordination flow of BPI PALs network with FPA and other institutional partners within the Pesticide Monitoring System as found during this ex-post study. Note that this is based on existing procedures or practices and is not necessarily established by policy.

Given the coordination mechanisms between BPI and FPA (see Figure 3.1.1-C), the PALs directly report to the BPI central office. The Department of Agriculture regional offices oversee and administratively support the satellite PALs and the regional and provincial FPA officers in their region. The satellite PALs submit their accomplishment reports to the BPI central office and to their respective DA Regional Offices. For paid samples, the results of analysis are released to the client. According to interviews with the satellite PALs, it was learned that there is a standing order from the BPI Central Office that the PALs should be careful of releasing their data to the public. This is because the technical data generated by the PALs might be misinterpreted. Some cases of these have happened. An example is the “alleged” use of cyanide and formalin to prolong the shelf life of vegetables. As a result of this news, there was a drop in the sales of vegetables from the identified area.

Hence, it is not an SOP for the satellite PALs to furnish a copy of their farmers’ surveys and pesticide residue monitoring data to the FPA provincial and regional officers. The normal procedure is for the satellite PALs to submit their reports to (1) the BPI central office, who in turn gives the data to the FPA Central Office for its use (and to forward these to the regional FPA officers); (2) the DA regional director and (3) to the concerned LGUs. If the FPA needs the data generated by the PALs, the official procedure is for the Provincial or the Regional FPA officer to write a formal letter of request to the PAL chief. Another way is that the Regional or Provincial FPA Officer writes a letter to the DA Regional Director requesting for the data generated by PAL. Then, the DA Regional Director endorses the letter request to the PAL chief, for his or her appropriate action.

3.1.2.2. Organizational Structure/Design of BPI/FPA in the context of an effective national system for monitoring pesticide residues and fertilizer formulations in the Philippines (the SYSTEM)

Roles, Relationships and Coordinating Mechanisms Within the SYSTEM

The Consultant explored—during Key Informant interviews—how the players themselves define an effective system. Consultant notes LSD Chief Paz Austria's thoughts that an effective system should have "*strong institutional partnership between BPI and FPA. That both agencies are jointly responsive and accountable so as to make them responsive to the new challenges of ensuring an effective food safety program in the Philippines.*"

Items for study:
How does the BPI/FPA define an effective SYSTEM for Pesticide Residue & Formulation Monitoring?
What are the Project Level External Factors that have direct or indirect influence on the impact?
How is the relationship between BPI and FPA in the fulfillment of their roles in the system?

Again, Consultant sought to answer the following study items as pointed out earlier in the framework appreciation diagram.

As a point of reference, the study revisited the impact findings at terminal evaluation stage in order to compare with current findings and observations now at ex-post evaluation stage.

Three findings from the terminal evaluation report of PMDP were analyzed relative to this ex-post evaluation study:

1. The first finding from PMDP terminal evaluation report states that "since role of FPA and BPI was positioned systematically through Project implementation, cooperation both ways became closer." The Key Informant (KI) Interviews with Ms. Paz Austria, Chief LSD-BPI, FPA Operations/Administration Head, Dr. Neri Pescadera and focus group discussion (FGD) with NPAL officials and personnel revealed that BPI and FPA cooperation remained minimal. The monthly Joint Committee Meetings (JC) between BPI and FPA (as lead agencies) has been reduced to only twice a year. An FPA official admitted that after PMDP, BPI and FPA may have lost touch.

The Above finding is considered as an unintended and negative impact of the PMDP. The extremely reduced frequency of Joint Committee Meetings did not contribute much to continued partnerships. In fact, it runs counter to Agreement 4 by limiting

coordination between the two main players in the pesticide residue and formulation monitoring system.

2. The second finding in the terminal evaluation stage of PMDP states that “it is difficult to say whether the role of FPA is sufficiently demonstrated, as *the law scheme has not been sufficiently prepared*, but the FPA understands the meaning of BPI's offering a scientific basis to support its functions.” In this ex-post evaluation study, the KI interviews with Ms. Paz Austria, Chief LSD-BPI., FPA Operations /Administration Head, Dr. Neri Pescadera and focus group discussion (FGD) with NPAL and PAL officials and personnel revealed the following:
 - a.) FPA central officials stated that FPA tasks in the PMDP are not new since with or without the PMDP, their two tasks (establishing MRL and IEC functions) remain.
 - b.) FPA envisions that PALs be transferred to them to ensure that FPA tasks covers both fertilizer and pesticide being a regulatory and licensing body.
 - c.) FPA at present operates a fertilizer laboratory but RA 7394 Consumer Act of the Philippines mandates that the BPI establish pesticide laboratories nationwide.

One positive impact of the abovementioned finding is that the institutionalization of tasks respond positively to Key Points 1,2 and 4 of the Terminal Evaluation's recommendations. The positive impact of FPA taking over PALs is the availability of funds source since FPA, being a regulatory body, is fully capable of generating its own income from regulatory fees and other charges collected from fertilizer and pesticide licensing and related revenue sources. Moreover, FPA officials stated that with the PALS alleged transfer, FPA registration process can be facilitated.

It is noted, however, that the negative impact of PAL transfer to FPA is basically a conflict of interest in its being a regulatory body. That is, FPA performs pesticide residue or formulation analysis for a fee; the results of which are used as sole basis for FPA's own approval or disapproval of the private corporation's license to formulate and distribute fertilizers and pesticides. This situation may put the system of check and balances in doubt.

3. The third finding from the terminal evaluation of PMDP states that “the Department of Agriculture (DA) should strengthen the linkage between and among its bureaus,

attached agencies, and *other stakeholders* to sustain the gains from the Project.” Findings in this ex-post evaluation reveal the following:

- a.) The establishment of the MRL Committee has established wide acceptance and respect for BPI and FPA among Industry Leaders. This suggests that, Pesticide Residue Monitoring and Formulation in the non-agriculture sectors (water, soil etc) is now a growing requirement due to heightened awareness to protect the environment. PALs have been technically equipped to respond to this challenge. Although mainly a technical achievement, it bears directly on stronger linkages with other stakeholders, especially on a regional scale.
 - b.) The sector stakeholders (exporters, farmers, pesticide industry, academe and even other ODA institutions (CIDA’s PCEEM Project) are now beneficiary partners in a growing list of clientele. Thus, crop growers and exporters are now direct beneficiaries of the technical skills acquired by trained personnel.
 - c.) Other government agencies (NIA, BFAR etc) and research institutions have partnered with Project implementors. This is viewed as an unintended but positive impact of the project because it resulted to improved technical capabilities and enhanced international cooperation environment given that FPA is now involved in the ASEAN Expert Working Group on Harmonization of MRLs. Its main accomplishment is the harmonization of 369 MRLs for 29 pesticides accepted by member countries.
 - d.) The stringent MRL standards of importing countries on bananas, mangoes and pineapples require regular pesticide residue analysis. Given the increased capability of PALs, Philippine exports (e.g., banana, mango, pineapple, etc.) can be monitored and regulated adequately and regularly. This will help ensure that Philippine crops are able to meet the importing countries’ MRL standards.
4. The fourth finding from the terminal evaluation stage of PMDP states that “BPI and FPA have yet to recognize the importance of utilizing the analyzed data and Pesticide Residue Monitoring that has not yet been applied to crops across the country.” Findings in this ex-post evaluation study reveals that while this seems like a technical capability issue, the bottlenecks in establishing the SYSTEM is rooted on BPI and

FPA unclear tasks and responsibilities in performing its tasks. The limited feedback and communication between the agencies have caused apprehensions in effectively establishing a comprehensive SYSTEM. However, this produced an intended negative impact being manifested by unclear tasks and responsibilities between the BPI and FPA. This has resulted to duplication of tasks, non-sharing of findings and limited follow through activities between BPI and FPA.

Furthermore, the consultant also noted the unintended impact of devolution on the structure of the System since it resulted in operational concerns like delayed release of funds because of the centralized financial management system whereby all requests have to be approved by the central office. Along this concern, relationship and coordinating mechanisms between central office and the PALs must be strengthened and improved so as to expedite the processing of documents between central office and the PALs..

3.1.2.3. Personnel Management

The PMDP terminal evaluation also states that “the five outputs of the project have, for the most part, been completed, and the skill and knowledge on the main components of the pesticide monitoring scheme have already been transferred. As a result, the counterparts have learned how to analyze the pesticide residue data and how to examine pesticide residue by themselves. the five outputs of the project have, for the most part, been completed, and the skill and knowledge on the main components of the pesticide monitoring scheme have already been transferred.

Number and Qualification Levels vs. Actual Service Demands

Terminal Evaluation (TE) Stage. It is recognized that the project-trained BPI personnel are the same personnel now manning the PALs. At the end of the PMDP, sixty four (64) technical staff and seven (7) support staff manned the Laboratory Services Division of BPI. At PMDP terminal evaluation stage, it is learned further that if contract workers are allocated as counterparts, it is necessary to take measures to settle the transferred skills in the organization, because the skills may be lost when those workers are discharged.

In this ex-post evaluation stage, nine JICA-trained FPA contractuales have left the organization due to lack of permanent status. Only 2 technical staff

trained in Japan are working with FPA. At hindsight, FPA official says that this was overlooked and should not be repeated. FPA had a dismal picture since the FPA trained staff had contractual status at the end of PMDP. President Fidel Ramos favorably endorsed the request for permanent status. However, with the change of political leadership and the Department of Management shortfalls, the JICA trained contractuels were not absorbed by FPA and BPI. Hence, they opted for employment in other agencies.

The loss of technical personnel is considered as an unintended negative impact to FPA. Its ripple effect centers on insufficient number of technically qualified personnel to conduct, monitor and supervise SPRT trials which are the main basis for establishing MRLs for different crops. That is, loss of technical personnel evidently results to delay and reduction in the number of technical activities such as SPRTs and pesticide residue and fertilizer formulation analyses.

Program to Maintain or Upgrade Personnel Capabilities

Due to financial constraints, the staff of the PALs and the FPA had limited opportunities for skills upgrading after the project. Furthermore, the feedback from the FPA regional offices is that during the PMDP, contractual personnel were trained abroad. After the project, these contractual personnel's services were terminated.

In this ex-post evaluation stage, the technical skills of BPI trained personnel are apparent in the activities that they undertake where Actual Accomplishments have exceeded PAL Annual Targets and new methods of analysis have been developed. Moreover, although very limited, specialized training after PMDP have been provided to PAL Chiefs. This is the "Advanced Instrumental Training on Pesticide Residue Analysis" conducted at I.A.E.A (International Atomic Energy Agency), Seibersdorf, Austria. The technical training abroad is considered as an unintended positive impact as evidenced in GOP's participation in The ASEAN harmonization of MRLs. The trainings abroad enables the recognition of the technical and analytical capabilities of the PALs in the ASEAN region.

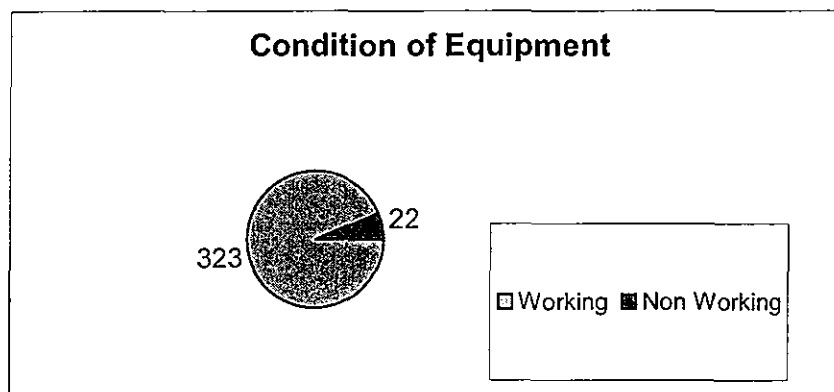
3.1.3 Technical Impact

The overall technical impact of PMDP centers on the capacity, utilization and maintenance of the state-of-the-art (mostly digital/electronically operated) equipment and facilities. This increases the overall national capacity to provide pesticide residue and fertilizer formulation analytical services for the target clientele in the Philippines. These replaced the old and obsolete facilities and equipment, which were operated manually; majority of which are no longer functional and could no longer be repaired.

3.1.3.1 Current Status of Donated Equipment and Facilities

Most of the new equipment and facilities used in the PTTC are those that came from the Grant Aid. Some audio-visual equipment and computers were given to the Fertilizer and Pesticide Authority. Some regional offices of the FPA were also recipients of the PMDP equipment. Based on ocular inspection and the equipment inventory, 93.62 percent of the facilities and equipment from the Grant-Aid are in good working condition. Only 6.38 percent of the equipment is not working. This is shown in the Figure below.

Condition of the Equipment, No. of Equipment



With regards to equipment utilization, the following terms were defined by the National PAL, to wit:

Regularly used – used at least once a week

Occasionally used – used at least once a quarter

Rarely used – used at least once in six months to one year

Of the total donated equipment, 73.91 percent are regularly used, 47 percent are occasionally used, 8.41 percent are rarely used and 4.06 percent are never used.

Utilization of Equipment

No. of Equipment	Regularly		Occasionally		Rarely		Never		TOTAL
	Used	%	Used	%	Used	%	Used	%	
255		73.91%	47	13.62%	29	8.41%	14	4.06%	345

For the complete equipment inventory showing status of utilization of equipment, please see the General Annex.

Operation and Maintenance (O & M) System

Each technical staff is responsible for “day-to-day maintenance” or “system check” and simple trouble-shooting of the equipment he or she uses. There are standard operating procedures (SOPs) or work instructions in the NPAL. Examples of these are: change liner, septum, and columns, clean or purge the system. The satellite PALs have their own SOPs, which they pattern after the NPAL SOPs. Mr. Walfredo Cinco, PAL Laboratory Technician II is responsible for the repair of equipment in the NPAL and the satellite PALs. He underwent training in Japan. He visits the PAL satellites at least once a year to examine the condition of their equipment. The procedure is as follows:

- i. The satellite PALs first make a phone to call Mr. Cinco asking for his advice on how to repair the equipment. He instructs them how to repair or troubleshoot the equipment. Only when the satellite PALs can no longer handle the repair of their equipment, do they request Mr. Cinco to visit their PAL.
- ii. If Mr. Cinco cannot handle the repair, the PALs call on the private companies that are local distributors of the equipment, e.g., Edward Keller. However, the services of these companies are very expensive. For example, P4000 is the minimum charge per visit.
- iii. Some equipment have radioactive components, so they have to be repaired on site.
- iv. The operating manuals for the equipment only provide instructions for simple trouble-shooting. The NPAL does not have the service manuals of the equipment.
- v. Suggestions to improve O & M: have a spare parts standby, e.g., filter

- vi. Calibration of equipment is done yearly for balances, refrigerators and centrifuges.
- vii. Some equipment or parts of the equipment need to be upgraded. Examples are the computer central processing units and software of the gas chromatographs.

3.1.3.2 Technical Activities in the Five Key Success Areas

Once again we visit the impacts of the new agreements on the continued activities in the 5 Key Success Areas of PMDP. This is inline with Important Assumption No.4 (external) “*Sufficient funds remain available to maintain national targets of effectiveness for monitoring pesticide residue and formulation*”. Obviously, this is a key challenge considering the general economic environment and condition of the GOP. Still, it is worthy to note that despite these difficulties, technologies gained during the PTTC continue to be utilized towards the overall goal.

All five major activities of PALs (pesticide residue monitoring, analytical services, pesticide formulation services, pesticide monitoring/analytical services and farmer’s surveys on pesticide use) during the PMDP, are still being implemented by the NPAL except for the supervised pesticide residue trials (SPRTs). These were terminated along with the project termination of the JICA PTTC-PMDP due to budget constraints.

a.) Pesticide Residue Monitoring

From 1997 to 2004, the NPAL and the five satellite PALs were able to analyze 6,680 samples of different agricultural crops in order to detect the presence of pesticide residues (see General Annex 4). PAL staff collected these samples from the markets and from the farmers’ fields. The annual target number of samples specified in the Basic Design Study of the Grant was set at 1,000 for the NPAL and 500 for each PAL or a total of 3,500 samples per year. Across the 10 regions where samples were collected, less than 20 percent were positive for pesticide residues and around six percent of the contaminated samples were above the MRL levels (e.g., bell pepper, cabbage, Chinese cabbage, celery, pechay and tomato). This is apparently associated with the very high perishability of the vegetables.

Overall, the consolidated accomplishment of the PALs for the eight year period comprise 23.86 percent of the target. The PALs' accomplishments decreased by almost half in 1999 because the JICA experts advised the PALs to perform method validation first in order to establish the methods they will use for the analysis. They developed their methods considering the strength and combination of extractants. During the project, they validate the methods developed by NPAL.

It is evident, however, that pesticide residue analyses were conducted for monitoring purposes only; which leads to activities concerning information dissemination, educational campaigns and farmers' trainings on safe usage and proper handling of pesticides. No further actions were done, however, on the samples that were found to contain pesticide residues exceeding MRL levels. Apparently, the detection of pesticide residues have nothing to do with confiscating or preventing the contaminated fruits and vegetables (unsafe for human consumption) from being sold by the farmers to (or from being bought by) the consumers from the local market—groceries, public markets, etc.

b) Analytical Services

Analytical services are those performed on samples provided by walk-in clients like farmers and farmers' associations, exporters, researchers and consumers. The clients usually pay for the analysis of these samples. From 1997 to 2004, the PALs were able to analyze 4,630 samples of different agricultural crops, water, soil and grains in order to detect the presence of pesticide residues (see General Annex 4).

The annual target number of samples specified in the Basic Design Study of the Grant was set at 500 for the NPAL and 100 for each PAL or a total of 1,000 samples per year. The consolidated accomplishment of the PALs for the eight year period comprise 57.88 percent of the target. The CDO and Davao PALs have been exceeding their yearly targets since year 2000. This is because they have many corporate clients like DOLE and Del Monte. These companies send water samples for analysis at the Cagayan de Oro PAL for environmental monitoring purposes. The Department of

Environment and Natural Resources requires that these corporate growers monitor the quality of water bodies near their plantations to determine impacts of pesticides on the physical environment.

The bulk of analytical services are paid by industrial crop growers and exporters; primarily in compliance with the food safety requirements of importing countries such as Japan, USA and Australia among others. The official results for analytical services are given to the clients within three days or less; even within 24 hours or less upon request, or depending on the urgency of client's demand.

b.) Pesticide Formulation Services

The NPAL performs analysis of pesticides in order to determine if the active ingredients they contain conform to those stated in their labels. These are samples paid for by either the Fertilizer or Pesticide Authority (FPA) or walk-in clients. The FPA provides about 80 percent of the samples, in relation with the licensing/registration requirements of pesticide dealers.

Pesticide dealers have to present to the FPA data on the quality of their products for registration, of which chemical character (types and quantity of active ingredients) and physical performance (stability of the formulation). The rest of the samples come from pesticide manufacturers, most of which do pesticide reformulation and repacking. Per new pesticide, the FPA specifies the method of analysis, products and standards in order to guide NPAL's analysis. The NPAL's analytical procedures and equipment are adjusted according to the pesticide for analysis. For commonly used pesticides, the period of analysis is about 2 days. For unknown or newly formulated pesticide products, the analysis takes about one to two months.

From 1997 to 2004, NPAL was able to analyze 1,704 samples of pesticide formulation products. The yearly target set in the Basic Design Study of the Grant Aid is for NPAL to analyze 100 samples upon commission (paid samples) per year. For the eight year period, NPAL accomplished 213 percent of its total target for the said period. The yearly average number of samples analyzed is 269.

Despite fluctuations, there is an increasing general trend in the number of activities in pesticide formulation analysis for BPI while the compliance rate with FPA requirements has been 100 percent. This activity is completely under the control of the FPA, as a requirement for the issuance of licenses for new pesticides or renewal of licenses for pesticides already distributed in the Philippines.

d.) Pesticide Formulation Monitoring/Analytical Services

These services aim to regulate and monitor the quality of pesticide formulation products in the market, i.e., whether their active ingredients are the same as those shown in their labels. NPAL collects samples of pesticide formulation products from the market and analyzes these. The Basic Design Study Report set a target of 200 samples analyzed per year. From 1997 to 2004, the NPAL analyzed 457 samples. This is 28.56 percent of its target. The reasons for the low accomplishment are the following:

- Increasing price of pesticides makes it difficult for NPAL to purchase pesticide samples from the dealers and retailers.
- This activity is a function of the FPA. However, since FPA does not have a laboratory, the NPAL performs this activity. However, this activity is likely to be discontinued when FPA will have its own laboratory.

e.) Farmer Surveys on Pesticide Use

There are no targets set for farmers' surveys on pesticide use. From 1997 to 2004, the PALs have interviewed 2,978 farmers. The surveys focus on safe usage and proper handling of pesticides. It found, however, that despite educational and information campaigns, a large number of farmers still do not strictly follow the "directions for use" of the pesticides as indicated in the label. Moreover, other farmers especially in remote areas, still use banned pesticides such as DDT and Thiodan, in which FPA and BPI officials claim that these are smuggled.

The five major technical activities of PALs have been improved by the PMDP through the new equipment and facilities and the improved analytical capabilities of technical personnel. These has increased the PALs overall capacity for speed and quality of detecting pesticide residues, and in response to the demand of clients especially exporters, industrial crop growers and agricultural cooperatives. The improved quality and speed of analytical services that the PALs provide are completely and directly contributed by the functional as well as well-maintained facilities and equipment, and the availability of supplies and materials needed for the analysis.

3.1.4 Financial Impact

The financial impact of PMDP takes off from the respective actual disbursements of FPA and BPI for maintenance and operating expenses (MOE) covering all pertinent activities in addition to salaries of personnel. While the positive and desired financial impact of the project rests on the increase in the MOE budget of the BPI and FPA for the year 2002 and beyond, it is noted that financial support for pertinent post-PMDP activities represents the core of the sustainability of PTTC.

After 2002 and outside BPI budget from GAA, however, the PALs did not receive any funding support for maintenance of the donated facilities and equipment and related activities from any other agency. Although, the expansion in the number of analytical services done by the PALs is part of post-PMDP target accomplishments, these are hindered by funding constraints especially for the procurement of chemical supplies and materials needed for pesticide residue and fertilizer formulation analyses.

For the year 2002 and beyond, maintenance of the donated facilities and equipment and other activities for ensuring the delivery of “safe food within tolerable levels of pesticide residues” to the market (e.g., pesticide residue monitoring and MRL-related activities, trainings, etc.) require additional financial support from either GOP, GOJ or other interested funding agencies.

Nevertheless, during the project, the total amount of FPA disbursements for PMDP (1997-2002) is PhP18.5 million. However, FPA reports that the project

was already terminated in the year 2002 and no further MOE allocations were neither allocated nor actually released after 2002.

Year	FPA-PMDP-MOE Actual Releases in million pesos)	Percent to Total
1997	0.40	2.20%
1998	3.00	16.53%
1999	5.00	27.55%
2000	4.50	24.79%
2001	4.50	24.79%
2002	0.75	4.13%
Total	18.15	100.00%

On the other hand, total MOE disbursements, for BPI-PALs in the year 2000, was 312% higher than the actual releases in 1999. However, total disbursements declined by 3% in year 2001 and further reduced by 92% in 2002.

Year	FPA-PMDP-MOE Actual Releases (in million pesos)	Percent to Total (in million pesos)
1997	890,508.97	2.91%
1998	1,553,425.59	5.07%
1999	2,980,425.59	9.74%
2000	12,286,239.85	40.14%
2001	11,901,604.82	38.88%
2002	999,072.40	3.26%
Total	30,611,511.45	100.00%

After completion of the PMDP, disbursements for MOE totally came from GAA. When there was no more funds from JICA, the MOE disbursements for the PALs was increased by 1% in the year 2003 (PhP6.72 million).

The post-project (2003 and beyond) maintenance and operations of the facilities and equipment alone require a minimum of PhP7.0 million per annum as suggested by Japanese experts. Apparently, this amount is approximately 4% higher than the overall budget for the annual MOE of all PALs. This suggests that the existing annual GAA allocation for MOE of PALs alone is not sufficient to cover the regular maintenance of the facilities and equipment every year.

In the light of PALs' mandated activities and limited budget, the BPI and DA continuously supported the operations and activities of the PALs in the country either through detail of personnel to the PALs or budgetary support taken from other DA programs. However, these were not entirely intended to finance the regular yearly maintenance of the donated facilities and equipment.

The positive financial impact of PMDP is evidenced by the increased MOE disbursements during the project (1998-2001) only; then, budgetary allocations declined very sharply thereafter. After the completion of the PMDP (2002-2003 on record), the level of actual MOE disbursements have returned to the low level of MOE disbursements similar to the pre-PMDP period (1997 and earlier). That is, despite increased capacity to provide analytical services, this has not been backed up by funding support from the national government (through GAA), so as to maximize the utilization capacity of the PALs. The "lack of funds" rhetoric repeatedly echoed by the budget officer and accountant has been manifested in the persistent problem of "lack of chemicals and other laboratory supplies" and "inadequate supplies and materials for the maintenance of the facilities and equipment."

3.1.5 Summary of Impact Assessment

The PMDP had clearly modernized and upgraded the facilities and equipment of PALs in the Philippines and the technical capabilities of laboratory personnel. For BPI, the overall positive impact of PMDP is well-established in the increased technical capacities of the PALs to provide faster, more accurate, more reliable, more effective and internationally competitive analytical services to the target clientele, most especially the exporters of Philippine fruits and vegetables.

The strongest impact of the PTTC was really on the technical capabilities of BPI and FPA as the frontliners in the pesticide residue and formulation monitoring system of the Philippines. These impacts however are minimized by unintended developments on the institutional and financial aspects of these organizations. While the Project Purpose has been achieved, the overall goal has only been partially achieved. One probable reason for this is that the mechanisms for ensuring that the positive impacts, especially on the institutional and financial environments, are sustained beyond the year 2002 was not part of the overall PMDP strategy. This is also because PMDP focused most heavily on the facilities and equipment; not necessarily on providing overall support for the

development and implementation of a national strategy for the establishment of MRLs and the regular and continuous monitoring of pesticide residues in strategic locations in the country.

For FPA, the overall positive impact of PMDP rests on the utilization of PAL services for regulatory purposes. This includes, among others, the approval/disapproval of the pesticide formulators' and distributors' application for license to sell pesticides and fertilizers, enforcement of penalties and sanctions against the distributors and users of banned pesticides, and increased educational campaigns and information dissemination for the proper handling and safe usage of pesticides at the farmers' level.

In terms of institutional impact, PMDP resulted to a closer partnership between BPI and FPA; with BPI providing scientific and legal bases for determining that agricultural/food crops sold locally or exported abroad are considered safe for human consumption. The PMDP impact is also on the strengthening of the overall FPA's regulatory and/or confiscatory actions against the use of banned pesticides and unsafe agricultural/food crops with pesticide residues exceeding MRL levels.

In terms of technical impact, the PMDP has increased the overall national capacity for providing more accurate, more reliable and internationally acceptable pesticide residue and fertilizer formulation analytical services to target clientele, especially the exporters of Philippine fruits and vegetables.

The financial impact of PMDP, however, is limited. Although, there was an increase in budgetary allocations during the PMDP, the post-PMDP financial and budgetary constraints of the PALs had limited their capacities to expand their services for pesticide residue and fertilizer formulation analyses. The financial constraint is manifested in the lack of chemicals and supplies necessary for laboratory analysis. Consequently, this adversely affects the exporters' capabilities to comply with the requirements of countries that import Philippine fruits and vegetables, such as Japan, USA, Australia and other importing countries.

Despite some limitations, the overall impact of PMDP is positive for both BPI and FPA and the target clientele—the Filipino farmers, formulators and distributors of pesticides, and the exporters of Philippine fruits and vegetables. The PMDP also resulted to the

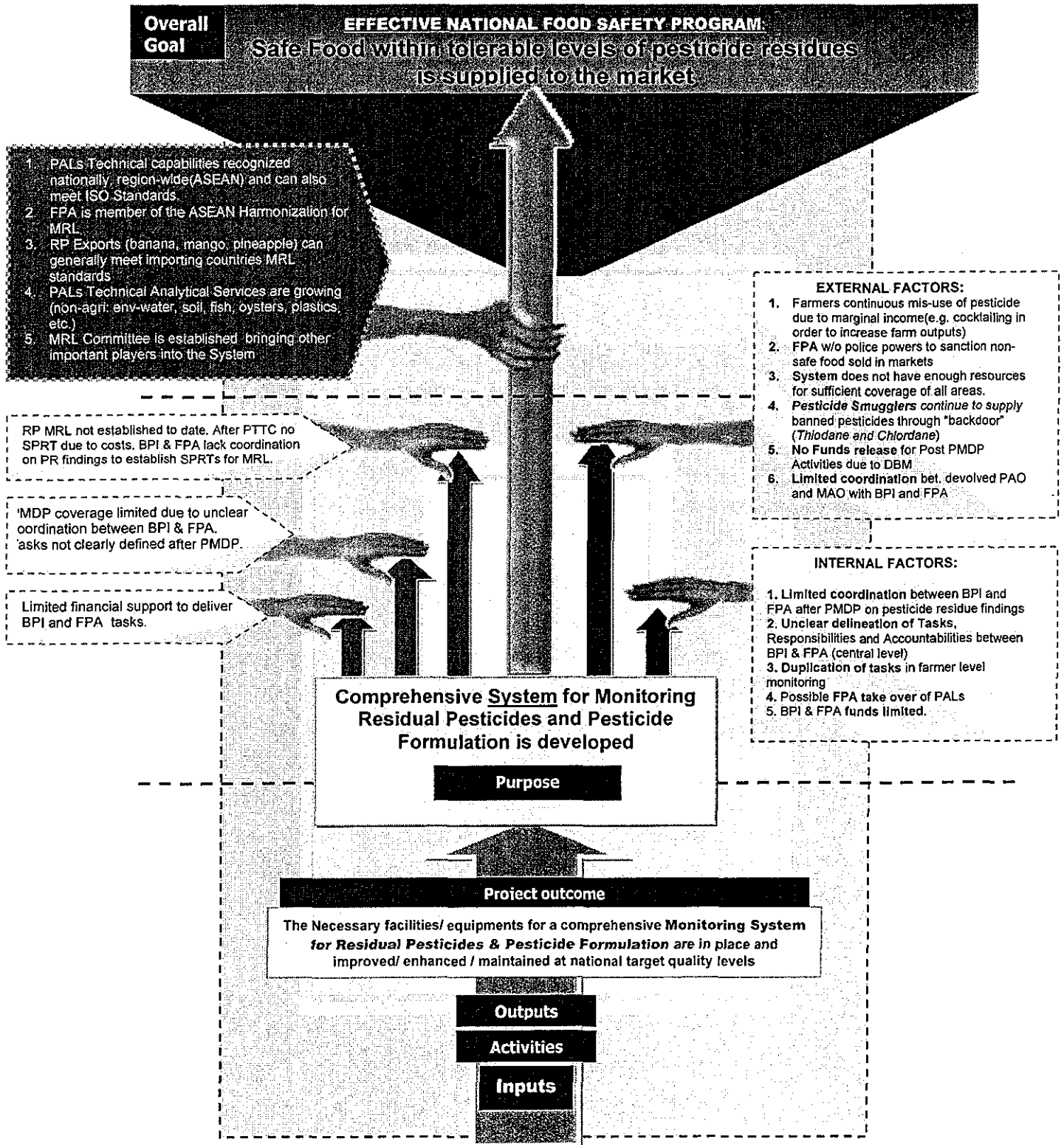
creation of joint and/or multi-stakeholder committees (e.g., BPI, FPA, DOH, DENR, PBGEA, DMC, etc.) along the following national key areas of concern:

- 1.) towards the establishment of Philippine MRLs for priority crops;
- 2.) the start-up collaborative efforts towards the strengthening of the existing national network for monitoring pesticide residues; and
- 3.) towards increased awareness on the need for creating and implementing a national food safety framework; which should envision that safe food (pesticide residue-free or not exceeding MRL levels) are supplied to the local market (e.g., groceries, public markets, etc.).

However, although the technical capabilities have been improved and facilities and equipment are already well in-place, efforts are still limited, especially along the following three key areas of concern:

- 1.) limited coordination between FPA and BPI and other agencies for the establishment of national MRLs for priority agricultural/food crops;
- 2.) limited coordination among FPA, BPI and other agencies for the formulation of policies, regulations, guidelines and specific plans of action to strengthen and improve effectiveness and vigor in the administration of a national (regional and provincial) inter-agency network (a system) for monitoring pesticide residues in the country; and
- 4.) absence of a national strategy and implementation mechanisms for ensuring that agricultural/food crops, which are found to be contaminated and unsafe for human consumption (i.e., with pesticide residues exceeding MRL levels) are confiscated and prevented from being sold locally, especially at the city and municipal public market levels.

Figure 3.1: DIAGRAM OF ACTUAL PMDP IMPACTS



3.2. Analysis of Project Sustainability

Since the PMDP has strengthened and improved the speed, quality and overall effectiveness of the regular activities and services performed by both the PALs and FPA, it remains a serious concern whether the current speed and quality of services could be continued and maintained for a longer period of time, or beyond 2002. That is, the extent to which the implementing agencies can continue the programs and activities started by PMDP remains completely dependent on the current state of the institutional, technical and financial capacities of BPI and FPA, in the light of the required collaboration with organizational stakeholders and concerned government agencies (e.g., DOH, DENR, etc.).

It is well-appreciated that the Philippine government (through the Secretary of the Department of Agriculture) has always pledged or actually provided institutional, personnel and financial support for the continuity of the PMDP-related activities. Similarly appreciated is the continued commitment and efforts of the Japanese government (through JICA) to provide additional financial and technical assistance to BPI and FPA.

3.2.1 Institutional Sustainability

Interviews and FGDs with FPA and BPI officials reveal that PMDP did not introduce any radical change in the mandate, functions and organizational structure of BPI and FPA. The PMDP only improved, strengthened and enabled the expansion of the existing capacities of BPI and FPA to be more responsive to the demand of the export market; to meet and surpass their routine performance standards; to comply more effectively with required internal processes and procedures; and to provide more speedy, more accurate and more reliable services to target clientele.

It is further revealed that the activities started through the PMDP are highly likely to continue because these improvements are now well-integrated with the regular internal processes and procedures within BPI and FPA. For FPA, the speed and quality in the performance of its pesticide regulatory functions and services are similarly dependent on the speed and quality (accuracy and reliability) of analytical services and results provided by the PALs. For the PALs, the quality and speed of their services to target clientele and the performance of their pesticide residue monitoring functions will remain directly related to the presence of technical personnel and the functionality as well as utility of the JICA-donated equipment and facilities. This is subject, however, to depreciation and

obsolescence of the facilities and equipment and the availability of more technologically-advanced facilities and equipment, which are internationally competitive and at par with the latest state-of-the-art technologies, as may be required by the countries that import most of the Philippine fruits and vegetables.

In terms of administration of the existing national network for monitoring pesticide residues, the accomplishments of the joint and multi-stakeholder committees are a major step towards sustaining the existing network, the establishment of Philippine MRLs, and the envisioned creation of a national food safety framework. This aspect, however, needs the creation of new plantilla positions (permanent items) for additional technical personnel, especially licensed chemists. Consequently, this will prevent the increase in the personnel turnover rate involving highly qualified and Japan-trained technical personnel.

Despite PMDP-initiated institutional and policy support which are geared towards sustaining the existing institutional capacities of the PALs and FPA, a lot of inter-agency collaborative efforts (among BPI, FPA and partner agencies) are still needed. The continued support for multi-agency collaboration will enable increased activities (in the long run) in terms of establishing Philippine MRLs for priority crops and the effective and efficient administration of the national system for monitoring pesticide residues. The sustained institutional support for pertinent activities will finally enable the existing national network to be more effective, especially in capturing the conditions at the provincial, city, municipal and farm levels, especially for agricultural/food crops intended for local consumption.

3.2.2 Technical Sustainability

The technical sustainability of PMDP largely depend on the donated facilities and equipment as well as the capabilities of technical personnel. It looks like BPI's PAL network was able to gain maximum benefits from PMDP. The PALs have also been the focus of interventions by the earlier Grant through the new equipment and facilities as the trainings provided to technical personnel. These benefits from the PMDP are retained and knowledge remains with the institution. These are also highly likely to be continued and more likely to be transferred to other agencies and personnel, and replicated through information sharing and other technology transfer programs of BPI and FPA.

In terms of the on-going efforts towards the establishment of Philippine MRLs, the increased technology transfer activities via PMDP is also likely to continue because the “technical backbone”, involving upgraded facilities and equipment as well as we-trained technical personnel are already well in-place. Thus, technical capacities of both BPI and FPA have expanded beyond the traditional agriculture-related analytical services of PALs, covering new analytical services (e.g., water, soil, fish, oysters, plastics, etc.). The FPA, on the other hand, represents the Philippines in the ASEAN Expert Working Group on Harmonization of MRLs, which successfully harmonized 369 MRLs for 29 pesticides; which were also accepted by member countries.

The expansion in the technical capability of the national pesticide residue and formulation monitoring network in the country (through FPA, BPI and partner agencies) manifests the technical sustainability of PMDP. Technical sustainability further ensures that, for the year 2002 and beyond, Philippine exports (e.g., fruits, vegetables, etc.) can generally meet the MRL standards required by the importing countries. This helps ensure that Philippine exports especially fruits and vegetables are safe and competitive when these food items reach the international market.

In terms of the condition and functionality of the donated facilities equipment, their technical conditions—without the proper regular maintenance—is a progressing threat because the equipment are depreciating yearly and the symptoms of wear and tear are starting to adversely affect the operations of the PALs nationwide. Thus, more frequent maintenance is necessary so as not to disrupt the services that PALs provide to its clientele, and so as not to inhibit the effective performance of the PALs’ regular functions, duties and responsibilities.

The technical sustainability of PMDP is well-established in the donated facilities and equipment. In the long run, however, especially beyond the technical life span of the facilities and equipment, it is very evident that technical sustainability is not limitless. Technical sustainability is completely dependent on the life span or maximum utility period of the donated facilities and equipment, and the continuous trainings to improve and upgrade the technical capabilities of laboratory personnel, especially the chemists and maintenance staff.

3.2.3 Financial Sustainability

Financial sustainability of PMDP activities is seriously constrained by the existing financial management system of the Philippine government in general, and specifically, the annual budgetary allocations for the PALs. Funding support for post-project activities (2003 and beyond) from the national government—through the annual General Appropriations Act (GAA)—is not sufficient to attain the desired level of financial sustainability.

The Japanese experts identified that at least PhP7.00 million annually is needed to ensure sustainability via fund support for the maintenance and operations of the donated facilities and equipment. This amount is higher than the total MOE allocation (PhP6.7 million in 2003) for all PALs in the Philippines. It is noted, however, that the PhP43.9 million budget proposed for the “3-year (2002-2004) Integrated Post-Project Plan” for PMDP had neither been allocated nor disbursed. Thus, even if the actual number of post-project activities—outside maintenance of the facilities and equipment—may be adequately defined and quantified; additional GAA allocation and actual disbursements needed to continuously carry out these activities, have to be ascertained. Otherwise, request for additional financial support for post-project activities from JICA or other funding agency (ies) is justifiable.

Financial sustainability is primarily dependent on the annual performance targets of the PALs, the utilization capacities of the PALs and the capability to raise sufficient revenues to finance operational requirements, such as procurement of supplies and spare parts for maintenance of the facilities and equipment. Thus, the continuity of project-related activities may be ensured but the desired minimum number of activities to be used as indicators of an acceptable level of sustainability beyond 2002 have yet to be directly and officially defined, quantified and agreed by all concerned agencies and stakeholders (e.g., DA, BPI, FPA, JICA, exporters, etc.).

3.2.4 Summary of Sustainability Analysis

Overall, the sustainability of PMDP, especially for the year 2002 and beyond, is well-established in the integration of PMDP-related activities into the mandate, regular functions, technical services and administrative processes of both FPA and BPI.

In the institutional aspects, the PMDP/PTTC-related activities are evidently sustained in the interagency collaboration and joint activities between the PALs and FPA. The PALs continuously provided analytical services, on demand, to FPA and its clients. On the other hand, the goal of establishing Philippine MRLs and enabling a national pesticide residue monitoring network resulted to an increase in the number of initial multi-agency meetings and pertinent collaborative activities lead by both BPI and FPA.

Technically, the facilities and equipment are continuously utilized by the PALs to provide analytical services to target clientele. In fact, the facilities and equipment are likewise utilized for other analytical services beyond food samples. Services have actually expanded to include soil sample analysis, water sample analysis, plastics and others. It is noted however, that the facilities and equipment are not utilized in accordance with the maximum capacity. Technical sustainability, however, is not limitless. It is completely dependent on the quality of maintenance and the technical life span of the facilities and equipment.

The financial sustainability analysis reveals that, although continuity of activities is assured, this is seriously constrained. Although financial support is continuously provided, the level of annual financial support does not correspond to the actual financial requirements of the post-PMDP activities. The budget of PALs are provided through the GAA only. Although analytical services are income generating services, all revenues from analytical services are remitted to the national treasury without the benefit of directly “plowing back” the income to the PALs to finance the MOE, especially for supplies and materials needed in the day-to-day operation of the facilities and equipment.

While FPA flaunts its trust fund and that, it can afford to acquire the facilities and equipment that are similar or even better than that of the PALs, the consequences of this plan may fall under the duplication of capabilities, activities and services. The plan may actually result in analytical capacities beyond the actual need for services and beyond the actual demand of the target clientele from the business sector.

The sustainability analysis further shows the need for increased activities—within at least 10 years after the year 2002—of the joint and multi-agency committees lead by BPI and FPA. This needs serious attention and closer supervision of a “higher office” at the Undersecretary level, which can energize and consolidate the collaborative actions of the PALs and FPA. These collaborative efforts and activities should be geared towards the

establishment of an effective national food safety program; establishment of Philippine MRLs; and the regular (i.e., monthly or quarterly) monitoring of pesticide residues in priority food crops in all strategic points at the provincial, city and municipal levels all over the Philippines.

3.3. Analysis of Factors Affecting Impact and Sustainability

3.3.1 Enabling/Promoting Factors

1. **Export/foreign market for Philippine fruits and vegetables.** The export potential of Philippine fruits and vegetables seems limitless. Its economic impact to the agricultural sector is sufficient to encourage Filipino farmers to adhere to the global standards of Good Agricultural Practices. Furthermore, the overall technical capabilities of the PALs enable Filipino exporters to adequately satisfy the quality control and food safety requirements of importing countries, especially Japan and the USA.
2. **Outreach to rural areas.** PMDP has increased the overall capacity of the PALs to provide analytical services to previously unserved rural areas, thereby eliminating or reducing delays in the completion of requirements prior to selling high-value food crops to the local and international markets.
3. **Safe handling and proper use of pesticides.** This is the main object of putting in place an effective pesticide residue monitoring system nationwide and the main focus for establishing a similarly effective and workable national food safety program of the country. Safe handling and proper use of pesticides at all levels likewise represent the core of all PMDP, PALs and FPA activities.

3.3.2 Inhibiting/Limiting Factors

1. **Undefined sanctions for non-compliance with agreements/policies.** Pertinent GOP-GOJ agreements did not specify accountabilities or sanctions for non-compliance (i.e., within a specific timeframe) with any of the specific provisions of the agreement. The policy environment and the way the PTTC Structure was designed, involves only two implementing agencies with inherent inter-organizational dynamics that was inadequately scrutinized prior to PMDP

implementation. Furthermore, this may have resulted to the limited communication and relationship-building efforts from both DA agencies; such that sufficient appreciation of roles, delineation of accountabilities, performance benchmarks and sanctions within the System were neither fully internalized nor adequately operationalized.

2. **Turfing** is apparent as evidenced by personnel protecting their territorial jurisdictions or “higher office” positions. Moreover, when roles and functions are not clearly defined (i.e., by a common supervising office at the Undersecretary level) or the limits of inter-departmental coordination are not clearly established, duplication of efforts could occur. These in turn, have resulted in the positive but limited impact and sustainability of enhanced technical capabilities towards the establishment of Philippine MRL and further limited the prospects of fully sustaining the gains of PMDP.
3. **Limited institutional capacity-building.** The PMDP resulted to the expansion and upgrading of technical capabilities, thereby ensuring that international analytical standards and procedures are strictly followed in terms of pesticide residue analysis and monitoring, pesticide formulation analysis, and conduct of SPRTs for the establishment of Philippine MRLs. However, the PMDP (through its PTTC nature) provided technical capabilities only; but not the overall and continuous institutional CAPACITY-building mechanisms for establishing an effectively operating pesticide monitoring NETWORK or SYSTEM, at a scale that the network/system captures the different agro-climatological conditions and agricultural practices in all provinces, cities and municipalities all over the country.
4. **Too much focus on technology transfer.** The Pesticide Residue and Formulation Monitoring Network had limited power and resources to enforce safe food policies (i.e. Police power to seize unsafe food before reaching market, confiscation of illegally imported pesticides registered/unregistered formulation, legal actions against violators, etc.). This limitation did not arrest the problem of farmers’ continued misuse of pesticide in their bid to increase their marginal incomes. This resulted to a limited capacity that allowed pesticide smugglers to take advantage of gaps in the system so that they can supply banned pesticides through the “backdoor” (i.e., smuggled from Indonesia and Malaysia being transshipped via Jolo, Taw-tawi, Palawan and other entry points for smuggled pesticides). Moreover, limited

manpower and resources have rendered the network incapable of covering all possible points of abuse especially the pesticide treatment of food crops at post-harvest time or 1-2 days prior to actual selling of pesticide-treated food crops.

5. **Inadequate financial support.** Funding support for post-project activities is not sufficient. The desired minimum number of activities to be used as indicators of an acceptable level of sustainability beyond 2002 have to be directly and officially defined, quantified and agreed by all concerned agencies. Once it is agreed upon, budget support must be made available to ensure realization of targeted activities and goals. Sufficient funds were not available to maintain national targets of effectiveness for monitoring pesticide residue and formulation due to fiscal crisis and shifting priorities. Unfortunately, the limited financial resources of developing countries will always endanger the sustainability of Projects once external funding stops.

The general financial support for PMDP (annual allocation) suggests that if BPI satisfies the minimum annual requirements for the maintenance of the donated facilities and equipment, all other activities have to be suspended. Financial management in this regard, requires sufficient funds for other activities under MOE. Thus, it is not surprising that adequate funds for the annual maintenance of the facilities and equipment may not have been satisfactorily met due to lack of budget. This is because other mandates and activities of the PALs (analytical services, information dissemination, general administrative costs, etc.) require actual disbursements that are likewise taken from the MOE. Without additional funding for post-project activities, the desired level of financial impact and sustainability of the project may not be attained when assessed across different parameters.

6. **Limited coordination/communication.** The BPI and FPA partnership remains fragile due to the limited communication and coordination. Unclear roles and tasks lead to unclear delineation of roles, functions and performance accountability centers within the multi-agency SYSTEM, such that, the System's effectiveness in the long run, is at stake. Strengthening the linkages and cooperation between BPI and FPA is the main concern echoed by the PMDP terminal evaluation. This remains exactly the same concern being echoed by this ex-post evaluation.

Technical capabilities and knowledge gained through technology transfer vis PMDP needs to be sustained through strengthened coordination among the implementing agencies and the availability of budgetary funds to ensure that equipment are properly maintained and the necessary supplies and materials for the laboratory are bought. There is also the need for continuous trainings and upgrading of the technical competencies of laboratory personnel and for the supervision of field trials for SPRT.

The limited coordination between BPI and FPA, may have produced impact, but the desired level of positive PMDP impact remains critical to sustainability. This needs serious attention from higher officials especially in setting the agenda for collaboration and requiring annual performance outputs from both BPI-PALs and FPA. Clarity of task and responsibilities between the two implementing agencies is a key success factor that has to be defined and delineated through a common supervising office at the level of a DA Undersecretary. Appreciation of clearly defined roles must be achieved so as to enable complementation and close collaboration between the two lead agencies of DA. The key sustainability factor is “increased and continuous collaboration between BPI and FPA,” that must have the CAPACITY to operationalize the national pesticide formulation and residue monitoring SYSTEM at all strategic locations, at least, at the regional and provincial levels.

3.4. Conclusion

There is no doubt that the PMDP/PTTC has increased the technical capabilities of both BPI and FPA through transfer of technology via new facilities and equipment and the transfer of *Japanese technical capabilities to the Philippines via trainings of Filipino chemists and other laboratory personnel in Japan*. These are likely to be sustained—at least at the minimum—by BPI and FPA given the current state of their institutional, technical and financial capacities.

Despite the positive impacts, however, some limitations were noted, especially in terms of the financial support provided to post-PMDP activities. In general, the overall impact of PMDP is well-established in the overall technical capacity of the PALs to provide faster, more accurate and more reliable analytical services to organized clientele such as exporters and industrial crop growers, and based on the client’s capability to pay for the analytical services.

However, these are completely dependent on utilization capacity and the technical life span of the facilities and equipment.

Long-term efforts that are dependent on the sustainability of the project and continuous inter-agency collaboration could not be ascertained. As of December 2005, not a single Philippine MRL for any priority crop has been established, so far. Despite JICA recommendation for the establishment of Philippine MRL for mango and okra, only relevant joint meetings and agreements have been accomplished by concerned agencies. This is because, the establishment of MRL for one crop alone is apparently very expensive. That is, the expenditures for establishing MRL are better allocated and disbursed in favor of the more urgent food production thrusts and related concerns of DA, BPI and FPA.

Furthermore, the regular pesticide residue monitoring activities of the PALs have been extremely constrained by lack of funds. Although some food crops (especially pechay and stringbeans) sold in the local market (e.g., groceries and public markets) have been found to contain pesticide residues above respective MRL-CODEX levels, these had been sold to local consumers. Thus, no further actions/sanctions/penalties imposed by BPI, FPA, DOH, DTI or other agencies have been done to confiscate/seize the contaminated food crops, or to sanction/penalize distributors and sellers of food crops considered as unsafe for human consumption.

Overall, given the financial, technical and institutional capacities of BPI and FPA, delivering safe food to the foreign market has been achieved through the PMDP, as a result of the upgraded technical capabilities of the PALs and the well-established food safety, food quality control and quarantine requirements of the importing countries such as Japan, USA, Australia and other importing countries. However, although the Philippine government may have a plan to similarly ensure that safe food items are delivered to local consumers, measures to prevent contaminated food crops from being sold in the domestic market remains so much more to be desired. That is, the long-term goal of delivering safe food for the health and welfare of the Filipino consumers still requires sustained and enormous technical, institutional and financial support from the national government and international development organizations.

4. RECOMMENDATIONS AND LESSONS LEARNT

4.1. Recommendations

1. In the light of Philippine fiscal crisis, it is recommended that GOP requests for additional technical and financial assistance from GOJ or other donor agencies to address national need to: (1) establish Philippine MRLs on priority crops, (2) sustain pesticide residue monitoring system at national target level of effectiveness, and (3) establish a working and effective national food safety program.

Along the first recommendation are related concerns, such that, it is recommended that required performance outputs resulting from BPI-FPA collaboration should be elevated and enforced at a “higher office,” or at the Undersecretary level. This should likewise be added as a priority project of the DA Secretary; and added to the mandate of an Undersecretary’s office; which in turn, should be officially defined as a common supervising office of BPI and FPA.

The recommendation is also directly related to further Technical Options to support the BPI-PALs efforts towards international laboratory accreditation under ISO 17025.

At the field level, this recommendation is also very relevant to the establishment of pilot agricultural farms and farming systems that can demonstrate increased income through safe handling and proper use of pesticides. These can serve as SPRT inputs towards establishing Philippine MRL standards.

Corollarily, the recommendation further includes efforts towards the establishment of national standards for sampling or research design for PRAs, SPRT trials and development of MRLs that are representative of the overall Philippine conditions across regions and provinces—type of crops, rainy and dry seasons, soil characteristics and topography (lowland/upland/coastal, etc.) varying climates, among others. The rationale or basis for this includes the following scenario:

- a.) Pesticide residues in highly perishable food crops (e.g., pechay, string beans, cabbage, okra, etc.) which were grown, harvested and sold in Baguio, may differ from the pesticide residues in the pechay grown, harvested and sold in Davao for the same period.

- b.) Pesticide residues in pechay (and other highly perishable food crops) harvested and sold in Baguio during the wet seasons may differ from the pesticide residues in the pechay grown and harvested in Baguio during the dry seasons.
 - c.) Pesticide residues in pechay (and other highly perishable food crops) grown and harvested in Baguio may differ from the pesticide residues in pechay actually sold in the public markets of Baguio for the same period when the samples are taken from the market stall or shelf.
 - d.) Pesticide residues in pechay (and other highly perishable food crops) grown and harvested in Baguio City may differ when the same pechay is sold in Divisoria Market in the City of Manila (considering time, distance and post-harvest chemical treatments on the same pechay being transported to Divisoria, Manila).
2. Vigorous cooperation or tie-ups with tri-media organizations (within institutional, technical and financial contexts) that will provide pesticide analysis data findings especially on “daily fare” agricultural commodities as rice, vegetables and fruits to increase public awareness and consumer demand for a healthy and safe-food environment. This could be done in cooperation with the PIA and the KBP who have the necessary expertise and the mass media-communications network.
 3. In addition to the annual GAA allocations, BPI and FPA must jointly explore other revenue-generating measures acceptable to GOP financial (budgeting, accounting and auditing) rules and procedures. This may include joint private/public sector institutional schemes, *MOA with industrial groups who need pesticide residue analysis to safeguard their products*, or the creation of a trust fund wherein revenue can be reverted back to finance and sustain the operations of the PALs. This may be explored on the basis of performance benchmarks and target outputs that are mutually reinforcing and mutually beneficial to both BPI and FPA.

4.2. Lessons Learnt

1. In the future, a keen appreciation on the most beneficial and more permanent institutional arrangements among stakeholders prior to program implementation increases the likelihood of project activities being smoothly and swiftly integrated (with minimal or manageable resistance from affected employees and officials) into the mandate and regular administrative structures of concerned agencies. Similarly,

this improves the prospects for sustainability. Mechanisms for ensuring sustainability are also one of the necessary ingredients in the plan or design of a foreign-funded program. New thrusts and priorities will be better sustained if incorporated in the legal mandate of the lead agency, which may require legislative actions. Moreover, actual inter-organizational dynamics should also be considered in planning or designing a multi-sectoral strategy to establish MRLs and to establish and sustain a national network/system for pesticide residue monitoring.

2. Enabling policy changes or structural enhancements will define and further improve the sustainable working arrangements between the agencies concerned. Joint agreements may not be sufficient to ensure sustainability because a more permanent “higher office” at the Undersecretary level may actually be needed and provided with appropriate authority to continuously enforce compliance, supervise, coordinate and consolidate the efforts and performance outputs of concerned agencies within the Department of Agriculture. It would be more effective and simpler in terms of performance accountabilities if functions are clearly delineated, activities are specifically defined, a single lead agency being enabled or empowered to steer and supervise the overall implementation of a project, with partner institutions as sub-leaders, and all other stakeholders being grouped together according to sectoral or technical priorities and concerns.
3. Strong local institutional capacities or support from local government units (LGUs) could help maximize the attainment of desirable impact levels and improve the prospects for sustainability of technological capability-enhancing projects. It also safeguards the sustainability of such gains by increasing internal resource funding (e.g., cost-sharing agreements, etc.), generation and management, thereby decreasing dependence on external or foreign support.
4. Technology applications can only go as far as cultural limits. These should be acceptable given the local culture and beliefs. Moreover, technology inputs are also subject to obsolescence even if these are coupled with acceptable cultural changes. These solutions could greatly enhance balanced performance and outputs of the projects across all benchmarks.
5. Sustaining project gains, over the long run, is not only about technical capabilities. Too much reliance on technology transfer programs may result to inadequate

attention to other local and indigenous factors, which may directly or indirectly, contribute to the success or failure of specific foreign-funded program. That is, sustainability relies most heavily on a continuous organizational CAPACITY-building support for the effective operations of a comprehensive and national food safety program.

Sustaining and expanding project gains initiated by PMDP over the long run, needs not only technical capabilities, but a holistic and continuous CAPACITY-building support for the effective operations of a comprehensive and national food safety program. This covers collaboration across sectoral concerns, which may not be fully accomplished through joint committees only. That is, this may require further scrutiny of available options such as legislative actions or review of existing law/s⁴, or enactment of a new food safety law or related policies, or perhaps, the creation of a new structure within the Department of Agriculture.

4.3. Follow-up Situation

Although the PTTC/PMDP had produced positive gains in “technical capabilities” of the PALs (currently recognized internationally and in the ASEAN), this may not be sufficient in the long-run—from year 2005 to 2015 and beyond. Sustaining the PMDP gains actually needs a second overall institutional CAPACITY-building support that focuses on operationalizing an effective SYSTEM that is not solely anchored on TECHNICAL CAPABILITIES only. Rather, the second phase will be more effective and better defined if the establishment of Philippine MRL and the expansion of existing food safety program will be directly defined and officially quantified in the project goals, objectives and required performance outputs.

Follow-up cooperation between GOP and GOJ can produce better results if pertinent project/s will encompass the overall national systems support for continuous income-generating strategies and inter-organizational capacity enhancements for sustainability of project-initiated activities. This similarly includes other food safety initiatives that will not only ensure the delivery of safe food in the local market (at the provincial, city and municipal levels); but also simultaneously enable the exportation of Philippine food crops (especially fruits and vegetables) to as many countries as possible, or beyond the traditional foreign markets such as Japan and USA.

⁴ example of this is the review of RA 7394 Consumer Act of the Philippines, which mandates that BPI should establish pesticide analytical laboratories nationwide, and other related law/s.