No.

ASIA-AFRICA KNOWLEDGE CO-CREATION PROGRAM (AAKCP)

RURAL COMMUNITY DEVELOPMENT SUB-PROGRAM (RCDS)

FINAL REPORT
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JAPAN INTERNATIONAL COOPERATION AGENCY

KAIHATSU MANAGEMENT CONSULTING, INC.

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Foreword

Based on the importance of Asia-Africa cooperation reaffirmed at the Tokyo International Conference on African Development (TICAD) III meeting held in September 2003, the Government of Japan made a commitment to further promote South-South cooperation, through the TICAD process. Responding to high potential of sharing experiences and knowledge between Asian and African countries in several sectors including Rural Community Development, found at the "Asia Africa Partnership Workshop" jointly held by JICA and Africa Institute for Capacity Development (AICAD) November 2004, JICA decided to launch Asia Africa Knowledge Co-Creation Program (AAKCP).

AAKCP aims to provide the forum where Asian and African countries share each other's experiences and knowledge in several areas of development including Rural Community Development, and thereby to facilitate each country to create its own method of development which suits mostly to its contexts. At the same time, AAKCP is expected to function as a mechanism in which new projects/programs in Asia-Africa co-operations are formulated through its process. It is supposed to have several sub-programs according to each sector, and, first of all, Rural Community Development Sub-program (RCDS) has been implemented from March 2005 till August 2006. It has successfully facilitated 6 Asian and African Policy Research Project (PRP) teams to come up with practical outputs in RCD, while deepening the networks between Asia and Africa.

This report describes the results and processes of all the six PRPs implemented by Asian and African PRP teams for 6 months. We believe that this report will be put into good use, since the whole process experienced by Asian and African PRP teams has good lessons for further promoting Asia-Africa cooperation.

We would like to congratulate 6 Asian and African PRP teams for their successful implementation of PRP, and hope that the networks between Asia and Africa grown through this sub-program will lead to further cooperation in the future. Finally, we would like to take this opportunity to express our sincere gratitude to the academic panel of this sub-program for their continuous support of AAKCP RCDS.

August 2006
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Director General
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Abbreviations

AAKCP RCDS	Asia-Africa Knowledge Co-Creation Program, Rural Community Development Sub-program
AAPW	Asia-Africa Partnership Workshop
AICAD	African Institute for Capacity Development
AREX	Agricultural Research and Extension, Zimbabwe
ARV	Antiretroviral Medications
CBO	Community-Based Organization
DCC	Day Care Clinic
DORSFA	Doho Rice Irrigation Scheme Farmers' Association
FBO	Faith-Based Organization
HHK	Huai Hong Khrai
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
JICA	Japan International Cooperation Agency
MoA	Ministry of Agriculture, Kenya
MOAC	Ministry of Agriculture and Cooperatives, Thailand
NGO	Non Governmental Organization
OM	Operational Manual
PCM	Project Cycle Management
PLHA	People Living with HIV/AIDS Group
PRP	Policy Research Project
RRA	Rapid Rural Appraisal
STI	Sexually Transmitted Infection
SV	Study Visit
TB	Tuberculosis
TICA	Thailand International Development Cooperation Agency
TICAD	Tokyo International Conference on African Development
VCT	Voluntary Counseling and Testing

A study visit to an agro-processing factory, the Initial Seminar in Thailand (April 2005)

The final wrap-up session, the Initial Seminar in Thailand (April 2005)

Discussion for formulating the Project Document, the Mid-term Seminar in Thailand (July 2005)

The final wrap up, the Mid-term Seminar in Thailand (July 2005)

Study Visit to a community hospital in Thailand, Tanzanian Policy Research Project (November 2005)

Discussion on water resource management at a village in Senegal, Senegalese Policy Research Project (January 2006)

Demonstration of agro-processing skills at a village in Kenya, Kenyan Policy Research Project (March 2006)

Discussion for introducing rice paddy fish culture in Ugandan Doho Irrigation Scheme, Ugandan Policy Research Project (March 2006)

Discussion for formulating the operational manual for extension workers at the workshop in Zimbabwe, Zimbabwean Policy Research Project (March 2006)

Construction of a check-dam at a village in South Africa, South African Policy Research Project (April 2006)

A plenary session, the Final Seminar in Kenya (June 2006)

A group session, the Final Seminar in Kenya (June 2006)

Executive Summary

Chapter 1 Outline of Asia-Africa Knowledge Co-Creation Program (AAKCP), RCDS (Rural Community Development Sub-program)

AAKCP aims to provide a forum where Asian and African countries can share each other's experiences and knowledge in several areas of development, including rural community development, and thereby facilitate the creation by each country of its own method of development which best suits its context. At the same time, AAKCP is expected to function as a mechanism which new projects/programs in Asia-Africa co-operation are formulated through the process it provides. It has several sub-programs in the several sectors, and the first of these, the RCDS, was implemented from March 2005 to August 2006. Each sub-program is comprised of five components: the initial seminar for sharing the experiences between Asia and Africa, matchmaking of Asian and African pairs, the mid-term seminar for formulating the Policy Research Projects (PRPs), implementation of the PRPs, and the final seminar for sharing the results and processes of the PRPs.

Chapter 2 Evaluation of each Policy Research Project

In this section, each PRP was evaluated by the secretariat of AAKCP RCDS, Kaihatsu Management Consulting, Inc. These evaluations were performed based mainly on the final report and project document of each PRP as well as monthly monitoring reports, reports on Study Visits (SVs), and other documents submitted by each African and Asian organization of each PRP. In addition, information obtained from observation during the seminars, mid-term monitoring, and telephone conversations for daily program administration were also taken into consideration.

The evaluation of each PRP was performed in such areas as inputs, activities, knowledge co-creation, final outputs, and future plans after the PRP. In each PRP, "inputs" such as staff in charge in African participating organizations, the Thai experts, and the Japan International Cooperation Agency's (JICA) financial assistance were generally provided as planned. As for "activities", approximately 80-90% of them were performed as planned in many of the PRPs, but some PRPs left a few important activities undone, such as trials of the final outputs, due to time constraints. "Knowledge co-creation" is comprised of two components, "Knowledge shared with the Asian Partner Organization" and "Creation of New Knowledge", and the two are evaluated separately. The former component, "Knowledge shared with the Asian Partner Organization" played an indispensable part in the formulation of the final outputs in all the PRPs, but not all the knowledge was necessarily effectively utilized in the final output formulation. Regarding the latter component, "Creation of New Knowledge", the extent of elaborating new knowledge varies depending on each PRP. For example, in those PRPs which tried to utilize Thai knowledge in respective African countries, this external knowledge was practically modified into the African context in the trial process, so the "Creation of New Knowledge" seems to have been performed from a practical viewpoint. However, in the other PRPs which introduced Thai knowledge without carrying out any trials, there was little chance

that the Thai knowledge could be adapted in the African context. Consequently, “Creation of New Knowledge” may not be deep enough yet in those PRPs.

Concerning “final outputs”, the degrees of completion were different for each PRP. The manuals developed by Kenya and Zimbabwe may need to include a few more explanations for extension staff and farmers to facilitate utilization. The proposals planned by Senegal, South Africa, and Uganda should explain the relevance of the new projects by presenting the learned Thai knowledge, and the relationships between “causes-effects” and “activities-outputs-objectives” with clearer logical consistency. “Future plan after the PRP” was considered appropriately by each PRP, but the completion of undone activities should be undertaken before future activities.

The evaluator comments on the “Assessment of the PRP”, which was conducted by each organization in the final report. The assessment was conducted focusing on the following five evaluation criteria: relevance, effectiveness, efficiency, impact, and sustainability. The first criterion, relevance, is sufficiently demonstrated in terms of selection of issues in each PRP. The second criterion, effectiveness, varies among the PRPs. Firstly, the degree of completion and quality of the final output are not necessarily high in each PRP due to time constraints and insufficient knowledge co-creation. Secondly, achievement of the expected outcomes of the final outputs is still difficult to foresee at this moment. Thirdly, the degree of contribution from Thai experiences was different depending on the PRPs. Although almost all the inputs were undertaken in each PRP, the third criterion, efficiency in creating outputs from the inputs, is not the same among all the PRPs. The fourth criterion, impact, is difficult to evaluate, since the final outputs were just formulated and yet to be put into practice. However, a satisfactory technological impact is expected to be realized in each PRP if the final outputs are finalized and utilized appropriately. The fifth criterion, sustainability, depends on how each PRP is incorporated into relevant government policy, programs, and projects in each African implementing organization.

Chapter 3 Issues, Potential, and Recommendations to Promote AAKCP and Asia Africa Cooperation

This chapter presents issues and potential, which were observed throughout AAKCP RCDS, and recommendations to address those issues and to enhance that potential. Regarding the general issues impinging on and recommendations for enhancing Asia-Africa cooperation, the “Language Barrier” between Thailand and Africa is evident, and English language training focusing on technical cooperation for Thai experts is recommended to deal with it. Concerning the issue of “Differences in Contexts” between Thailand and Africa, it was pointed out that a key for stimulating knowledge co-creation is to identify types of these differences and analyze the factors behind them. As for the issue of “Insufficient Project Implementation Capacity”, it is pointed out that this can be partly alleviated by providing African partners with project cycle management (PCM) training. In order to solve the issue of “Complicated Coordination” among a number of actors, preparation of guidelines for conducting this type of cooperation

is suggested as one of the countermeasures.

As for the specific issues of and recommendations to AAKCP RCDS, the “Time Constraint” in implementing the PRPs within six months is pointed out, and extension of the project period by two more months is suggested, given the same amount of activities to be implemented in the PRPs.

As for the potential and recommendations for Asia Africa cooperation in general, “Creation of a Foundation for Future Cooperation” on both the African and the Thai sides through AAKCP RCDS is suggested, and the continuous implementation of AAKCP RCDS is recommended to maintain the functional mechanism of formulating new Asia Africa cooperation projects. To enhance the potential of “Opportunity for Capacity Development of African Participating Organizations”, the experiences of self-oriented project management is considered as important, and PCM training can improve the process of this project management. This may also be applicable to the Thai side, so the accumulation of experiences in technical cooperation in Africa is suggested for the future. Concerning the specific potential of and recommendations to AAKCP RCDS, the need for “Learning the Knowledge Co-creation Concept” is pointed out, and dissemination of the concept among all the relevant organizations in Asia and Africa is recommended.

Chapter 1 Outline of AAKCP RCDS

The Tokyo International Conference on African Development (TICAD) III meeting held in September 2003 reaffirmed the importance of South-South cooperation, especially between Asia and Africa. The Government of Japan made a strong commitment to further promote South-South cooperation through the TICAD process in the coming years. In this context, the Asia-Africa Partnership Workshop (AAPW) was held at the African Institute for Capacity Development (AICAD) in November 2004 under the joint sponsorship of the Japan International Cooperation Agency (JICA) and AICAD, in order to discuss the future direction of cooperation through mutual dialogue between Asian and African countries. Responding to the great potential uncovered at the AAPW for progress that could be achieved through the sharing of experiences and knowledge between Asia and Africa, JICA decided to launch the Asia-Africa Knowledge Co-Creation Program (AAKCP).

This program aims to provide a forum where Asian and African countries can share each other's experiences and knowledge in several areas of development, including rural community development, and thereby facilitate the creation by each country of its own method of development which best suits its context. At the same time, AAKCP is expected to function as a mechanism through which new projects/programs in Asia-Africa co-operations are formulated through the process it provides. It has several sub-programs in several sectors, and, the first one, the Rural Community Development Sub-program (RCDS), was carried out from March 2005 to August 2006. The AAKCP RCDS has about a one-year process and has been the facilitating mechanism for each African participating country to plan and implement a Policy Research Project (PRP) with an Asian partner organization under their own initiatives in the area of rural community development. As shown in Figure 1.1 below, the entire sub-program consisted of five components: the initial seminar for sharing the experiences between Asia and Africa, matchmaking of Asian and African pairs, the mid-term seminar for formulating the Policy Research Projects (PRPs), implementation of the PRPs, and the final seminar for sharing the results and processes of the PRPs. The activities in the PRPs include the Study Visits (SVs) in Asia and Africa, baseline surveys, and the demonstrations/trials of practical agriculture techniques in target areas, stakeholder workshops, and formulation of outputs.

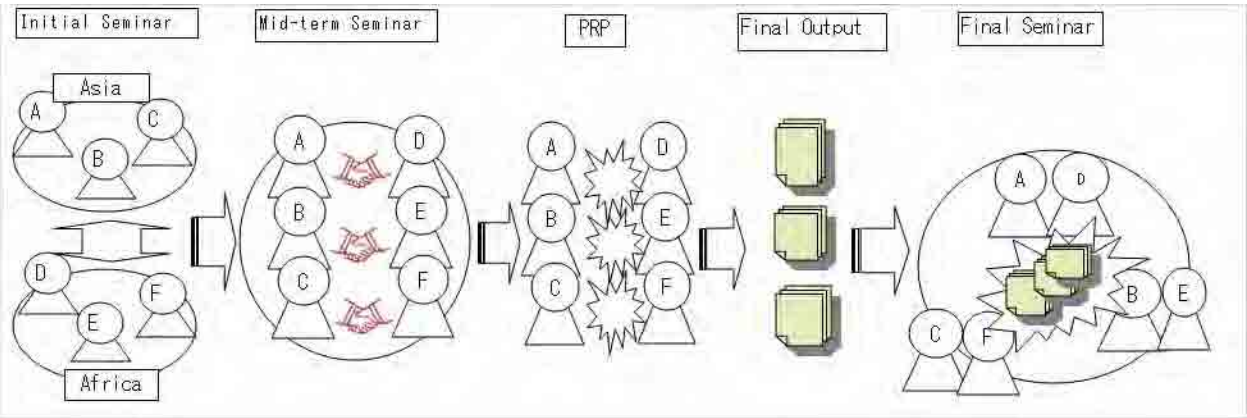

Figure 1.1 Flow of AAKCP RCDS

In March 2005, the initial seminar of AAKCP RCDS was held in Japan and Thailand. Representatives from relevant government organizations of Ethiopia, Kenya, Malawi, Mozambique, Senegal, South Africa, Tanzania, Uganda, and Zimbabwe involved in rural community development, four Asian resource persons from relevant fields, and several members of the Japanese academic panel for AAKCP RCDS participated in the seminar. At the seminar, the participants shared their knowledge of and experiences in Asia, Africa, and Japan through presentations and study visits to Oita Prefecture, and considered how this accumulated knowledge could be utilized for rural community development in Africa. Next, moving to Thailand, they observed rural community development practices in northern Thailand. During the seminar, each African participant formulated a draft action plan pertaining to the issues of rural community development in his/her respective country and practical methods for solving the issues through cooperation with Asian countries.

After returning to their home countries, each African participant formulated an inception report on future cooperation with Asian countries based on the action plan approved by the parent organization and submitted it to JICA. Based on the contents of these reports from Africa, JICA nominated candidates from Asian partner organizations for cooperation with Africa, and each African organization subsequently agreed with the selection of its Asian partner.

The mid-term seminar was held in Bangkok, Thailand in July 2005. Seven pairs of African and Asian partnerships discussed their proposed PRP and subsequently agreed on the content of the PRP. Six out of seven PRPs were approved by JICA and commenced from November 2005. The PRP period ended at the end of May 2006, and the final seminar was later held in Kenya in June 2006. All the African implementing organizations, their Asian partner organizations, the Thailand International Development Cooperation Agency (TICA), and many JICA officials and experts from the respective African countries participated in the seminar. The participants discussed and shared their findings and conclusions on the process and results of each PRP. Details of the entire AAKCP RCDS process are shown in the following table.

Table 1.1 Process of AAKCP RCDS

Period	Event	Activities
March, April 2005	Initial seminar (Japan, Thailand)	・ Knowledge and experiences of Asia and Africa were shared among participants at the seminar. ・ An action plan was formulated by each African participant
April - June 2005	Matchmaking	・ Based on the action plan, an inception report was formulated, approved, and submitted to JICA by each African organization. ・ Based on the report, an Asian partner organization for each African organization was nominated by JICA and approved by all the African organizations. ・ Project documents were drafted though collaboration between African and Asian partner organizations

July - October 2005	Mid-term seminar (Thailand)	・ A project document for each PRP was formulated at the seminar though collaboration between African and Asian partner organizations. ・ Project documents were finalized by each African organization and the respective JICA country office.
November 2005 – May 2006	Implementation of the PRPs	・ Six PRPs were implemented by African and Asian partner organizations ・ The PRPs were completed.
June 2006	Final seminar (Kenya)	・ Findings and conclusions of the process and outputs of each PRP were shared at the seminar among all Asia and Africa organizations.

The participating organizations of AAKCP RCDS and their final outputs are summarized in the following table.

Table 1.2 Participating Organizations and Final Outputs of AAKCP RCDS

African Implementing Organization	Asian Partner Organization	Final Output
Kenya Ministry of Agriculture	**Thailand** Department of Agricultural Extension, Ministry of Agriculture and Cooperatives	An extension manual for processing of fruits, vegetables, and soy beans.
Senegal Department on Water Management and Planification, Ministry of Agriculture and Hydraulics	**Thailand** Huai Hong Khrai Royal Development Study Center	A strategic development plan for mobilization of water resources for agriculture in Sangalkam rural community
South Africa Department of Agriculture, Limpopo Provincial Government	**Thailand** Huai Hong Khrai Royal Development Study Center	A project proposal for a technical training course on soil erosion and moisture retention.
Tanzania Ministry of Community Development, Gender and Children	**Thailand** Ministry of Public Health	Guidelines for district teams to develop plans for Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) prevention
Uganda Ministry of Agriculture, Animal Industry and Fisheries	**Thailand** Department of Agricultural Extension, Ministry of Agriculture and Cooperatives	A draft project proposal on technical cooperation between Uganda and Thailand and JICA: "Increasing Incomes of Farmers of Doho Rice Irrigation through Improved and Integrated Rice Production"
Zimbabwe Ministry of Agriculture	**Thailand** Kasetsart University	An agricultural extension operational manual

Chapter 2 Evaluation of each Policy Research Project

This chapter presents the findings of evaluations performed for each PRP by the secretariat of AAKCP RCDS, Kaihatsu Management Consulting, Inc. The evaluations were performed based mainly on the final report and project document of each PRP. As supplementary materials, monthly monitoring reports, reports on SVs, and other documents submitted by each African and Asian organization of a PRP were also referred to. In addition, information obtained from observation during the seminars, mid-term monitoring, and telephone conversations related to daily program administration were also taken into consideration. The methods of evaluation are described below.

(1) Input, Activities, and Final Outputs

Inputs and activities were evaluated by comparing the planned inputs and activities and their provision and implementation. These three components—inputs, activities, and the final output—of each PRP were planned in the project document, which was formulated before the commencement of the PRP. The results of implementation are shown in each final report. The implementation of an input can be confirmed by materials such as monthly monitoring reports, even if it is not indicated in the final report. Observations by the evaluator are also the basis for determining whether an activity was implemented or not. In the comparisons of the plan and achievements in each PRP, items which were not undertaken are indicated with the reasons for the non-implementation. Occasionally, brief recommendations accompany the reasons for the non-fulfillment of the activity.

(2) Knowledge Co-creation

- Knowledge shared with the Asian Partner Organization

In this section, mainly knowledge “learned” from the Asian partner organization is evaluated, since the provision of African knowledge to Thailand was reported only from Uganda. Knowledge learned from Thailand is examined focusing on whether it contributed to the achievement of the final output and was relevant to the overall goal of each PRP. If the knowledge is to be utilized in the future plan of the PRP, it is regarded that appropriate knowledge sharing was successfully undertaken.

- Knowledge Co-creation

Firstly, whether the knowledge co-creation process is clearly described or not in each final report is evaluated. If it is described, the process is analyzed to determine how each PRP modified and adapted both endogenous and exogenous knowledge to create new knowledge. Here, simple knowledge transfer is not regarded as knowledge co-creation, and the clear distinction between endogenous and exogenous knowledge is regarded as the important process of knowledge co-creation. If the knowledge co-creation process was not covered in a final report, the process was educed by studying the relationship between the contents of the final output and knowledge learned from Thailand in the PRP.

(3) Future Plan

In case a PRP left activities undone, whether the future plan includes these unimplemented activities or not is examined first. Focus is also put on the connection between the results of each PRP and its future plan. Each future plan should be designed to develop, enhance, and strengthen the positive results of each PRP. Finally, the relevance of each future plan to the overall goal of the PRP is examined.

(4) Comments on the Assessment of the PRP

Firstly, the self-assessment of the PRP in each final report is evaluated based on the results of each PRP and the guideline of the final report. If a self-assessment is not performed in line with the guideline, the evaluator offered his own assessment. The self-assessment was conducted in line with the following five evaluation criteria specified in the guideline.

- Relevance

The importance of the PRP within the overall development policy/strategy/program in each African participating country is discussed. The validity of the final outputs is also examined.

- Effectiveness

Effectiveness is measured by determining the degree to which a final output achieves the outcome originally expected as specified in each project document. Moreover, the quality of an output and the prospects of achieving expected outcomes are discussed. The contribution of Asian experience and knowledge in producing an output is also examined.

- Efficiency

The extent to which inputs and learned knowledge from the Thai side were converted into the final outputs is evaluated. In addition, the efficiency of inputs is also evaluated from such aspects as timing and volume.

- Impact

Positive and negative changes produced directly or indirectly as the result of the implementing of each PRP are described. Several aspects of the impact of each PRP are assessed, such as the impact on policy, technology, environment, culture, institution and management, economy and finance.

- Sustainability

Sustainability is determined by evaluating whether the benefits of each PRP will continue or not after its completion. In particular, the “future plan after the PRP” in each final report is examined focusing on how the plan will contribute to sustainability.

2.1 Kenya

2.1.1 Evaluation of the Process

(1) Input

The comparison between the planned and the actually provided inputs of the PRP is shown below.

Table 2.1.1 Planned and Provided Inputs: Kenya

Planned inputs	Provided inputs
Kenya • Counterparts – 3 staff from Ministry of Agriculture (MoA) • Local budget (USD) • Office accommodations, telephones, **Thailand** • Resource persons (numbers, organizations) • Local budget (USD) **JICA** • Experts (numbers, organizations) • Budget support (USD) • Coordinator	**Kenya** • Counterparts – Staff from Agro-processing sub-division, MoA • Vehicle • Computer **Thailand** • Resource persons –two experts • Skill & knowledge in agro-processing **JICA** • Budget support (≈USD 50,000) • Experts' advice & backstopping • Logistical support by the JICA Kenya & Thailand offices

As shown in the table above, almost all inputs were provided as planned except for the local budgets. The local budgets for the PRP were to be provided by both African and Asian organizations to some extent, but no actual expenditures have been reported. This indicates that all the activities were conducted through the budget provided by JICA.

(2) Activities

The comparison between the planned and the implemented activities of the PRP is shown below.

Table 2.1.2 Planned and Implemented Activities: Kenya

Planned activities	Implemented activities
(Activities to produce Intermediate Outputs) 1. The project implementation unit is established. 1.1 Personnel and budget are allocated as planned. 1.2 The plan of operations is formulated. 2 Knowledge exchanges with the Asian partner organization in country B are conducted. 2.1 The study mission is dispatched to the Asian organization. 2.2 The research paper is drafted. 2.3 Resource persons from the Asian organization visit country A. 2.4 The research paper is finalized.	1 The project implementation unit was established. 1.1 Personnel and budget were allocated as planned. 1.2 The plan of operations was formulated. 2 Knowledge exchanges with Thailand. 2.1 The study mission was dispatched to Thailand from 11th to 23rd Dec 2005. 2.2 The Thai team drafted the research paper. 2.3 Resource persons from the Asian organization visited Kenya from 15th to 25th March 2006 3. Rapid Rural Appraisal on Agro-processing

(Activities to produce Final Outputs) 3 The Guideline is formulated. 3.1 The draft of the guideline is formulated. 3.2 The draft is locally applied as a trial. The pre-testing of the operational manual will involve: 3.2.1 Identifying an already existing self-help group with a common interest in value addition 3.2.2 Identifying appropriate skills and equipment 3.2.3 Utilizing the appropriate skills and technology 3.2.4 Training both the extension staff and the community in value addition and in fabrication of the appropriate agro-processing equipment in the local jua kali sector 3.2.5 Monitoring the adoption of the acquired technology. 3.3 The draft guideline is circulated to stakeholders for comment. 3.4 Incorporation of stakeholder comments 3.5 The guideline is finalized taking into account the comments of stakeholders and the results of the trial.	3.1 Identified the current practices in agro-processing 3.2 Identified the constraints on agro-processing 3.3 Identified opportunities in agro processing 3.4 Evaluated potentials of up-scaling agro-processing and determined the entry points 4. Pre-testing the draft research paper 4.1 Provision of equipment: juice extractors, impulse sealers, cup sealers, plastic cups & foils 4.2 Fabrication of solar driers and hand chippers 5. Market Survey - May 2006 5.1 Identified the potential market outlets of processed products 5.2 Evaluated factors that influence marketability of these products 5.3 Identified areas to market some of these products 6. Stakeholder workshop – 14th June 2006 6.1 Shared information on various aspects of agro-processing 6.2 Identified ways of overcoming the various constraints in agro-processing 6.3 Initiated linkages and future collaboration on agro-processing

As shown in the table above, activities indicated in 3.3, 3.4, and 3.5 were not implemented. The following two activities under activity 3.2 were implemented:

- 3.2.2 Identifying an already existing self-help group with a common interest in value addition
- 3.2.4 Training both the extension staff and the community in value addition and in fabrication of the appropriate agro-processing equipment in the local jua kali sector.

Activity 3.2.2 was conducted as a part of target group selection at the planning stage before commencement of the PRP, and activity 3.2.4 was conducted in the SV to Kenya. The reason why several activities were left undone was time constraints caused by the delay of the SV to Kenya due to the restructuring of the Kenyan implementing organization. If the SV had been conducted in January instead of at the end of March, enough time would have been ensured to carry out all the planned activities.

Although the Kenyans left several activities unfinished, they did additional activities as follows:

2 Rapid Rural Appraisal (RRA) on Agro-processing

4 Market Survey - May 2006

5 Stakeholder workshop – 14th June 2006

The purpose of the RRA on agro-processing was to grasp the current situation pertaining to agro-

processing, which requires endogenous knowledge of the relevant field. This kind of information is crucial for co-creating new knowledge through the introduction of Thai knowledge based on Kenyan knowledge. As for market survey, it will also provide useful information for targeting consumers and selecting products in planning agro-processing businesses. The making of an RRA was a particularly appropriate activity since the completion of the draft manual was delayed. It was impossible to carry out pre-testing without the draft manual, but a marketing survey could be carried out while the manual was being drafted. Moreover, marketing information will be of assistance in the pre-testing of the draft manual after the PRP. Regarding the stakeholder workshop, although it might not affect the contents of the manual, it certainly must have provided a good opportunity to present the manual to the stakeholders so as to promote utilization of the manual.

(3) Knowledge Co-creation

- Knowledge shared with the Asian Partner Organization

In the PRP, the following two major components of knowledge were shared:

(i) Processing techniques and utilization of equipment

(ii) Factors contributing to growth of agro-processing industry

a. An enabling regulatory and policy framework
b. Existence of research institutions enhancing applied research
c. Human capacity development
d. Effective agricultural extension system
e. Strong research-extension-farmer linkage
f. Provision of credit to farmers and farmer groups
g. Infrastructure development
h. Existence of a strong political will, especially from His Majesty the King

Knowledge (i) directly contributed to the formulation of the final output, an extension manual for agro- processing. On the other hand, knowledge (ii) had no substantial connection with the output but rather was concerned with policy issues for the promotion of ago-processing industries.

- Creation of New Knowledge

There are differences in agro-processing in terms of recipe, equipment, and packaging between Kenya and Thailand. Some Thai recipes were adopted instead of Kenyan recipes after a careful comparison. For example, the Kenyan recipe for banana chips differs from that used in Thailand, but they chose the Thai recipe as the products have a better taste and will provide consumers with a new option. The adoption of appropriate Thai recipes was the first step of knowledge co-creation, since it was carried out based on Kenyans' experiences.

However, the knowledge co-creation is still rudimentary because the Thai recipes were introduced into the manual without major modification and adaptation. Knowledge co-creation within a recipe of one product through mixing know-how from Thailand and Kenya is not observed. The reason may be that few

cooking trials of Thai recipes were performed during the PRP, such as during the SV to Kenya. Totally new recipes will be created after trial and error tests of the Thai recipes are carried out to improve the quality of the products and adjust the tastes to local demand. In conclusion, the manual was formulated through knowledge transformation rather than knowledge co-creation.

2.1.2 Evaluation of the Final Output

The comparison between the planned and the achieved final output of the PRP is shown below.

Table 2.1.4 Planned and Achieved Final output: Kenya

Planned final output	Achieved final output
An operational guideline for rural community development for extension workers and farmers is formulated focusing on value addition of agricultural produce.	Extension manual for processing of fruits, vegetables, and soy beans

The achieved final output is more focused on the specific issue, agro-processing, than the planned final output. Given the overall goal of the PRP that the income of the rural people in Kenya is increased, the final output should have included a few more kinds of different information to address income generation. For example, knowledge of marketing could have been included since it is crucial for selling the products created from the recipes as income does not change unless the products are marketed. Moreover, knowledge about establishing businesses, such as creating groups, raising initial funds, and accounting, is necessary for income generation.

In addition, methods of fabricating new equipment should have been included in the manual. As an activity, equipment fabrication was undertaken incorporating the Thai knowledge, and a trial was also carried out. This knowledge should be disseminated together with the recipes in order to make processing more efficient.

2.1.3 Future plan after the PRP

The Future Plan after the PRP is as follows:

(1) Testing of the manual and sharing the results with stakeholders.
(2) Capacity building of staff , farmers and other stakeholders
(3) Sourcing, local fabrication, testing and promotion of technologies/equipment for processing and packaging.
(4) Support of identified (in RRA) entrepreneurs for up scaling and utilization as pilot and training enterprises.
(5) Development of a policy on agro-processing.

Since a few planned activities were not implemented during the PRP period, the said activities should be completed as soon as possible after the PRP. It should be remembered that the manual has to be finalized taking comments from stakeholders into consideration. This activity involving feedback from

stakeholders should be incorporated into plan (1) above. In conducting plan (2), the issues of marketing and basic business skills should also be addressed; otherwise, the impact on the income of the rural people may be limited. Plan (4) is a good plan which has an enormous possibility, but special attention should be paid to segregating marketing targets of large/medium scale enterprises and those of small agro-processing groups in rural areas. Large/medium scale enterprises should sell their products nationwide and/or export them, thus having an impact on employment in the region, while small agro-processing groups should try to sell their products within the region and have an impact on the members' household income. In this way, business entities of different scales in the same agro-processing field can grow in the same region without competing against each other. In implementing plan (5), learned knowledge from Thailand, "factors contributing to growth of the agro-processing industry" and experiences from utilizing the manual should fully be taken into account.

2.1.4 Comments on the Assessment of the PRP

(1) Relevance

In the final report, the general significance of agro-processing in the rural areas of Kenya is explained, but it contains no concrete description pertaining to the degree of contribution of agro-processing industries to rural development. As a result, the relevance of selecting agro-processing as the theme of the PRP was not clearly described. Convincing data, such as the portion of income generated by the agro-processing industry in the target area or in Kenya as a whole, should have been given to establish relevance.

(2) Effectiveness

The effectiveness of the PRP is not demonstrated in the final report. According to the evaluator's observation, the PRP was almost completed as planned. However, the contents of the final outputs were not test-trialed, so the quality of the outputs is not proven. This leads to the unclear prospect of whether the final output will achieve the overall goal of the PRP or not. The contribution of Asian experiences seems to be crucial to formulate the final output, but its extent of contribution is not shown.

(3) Efficiency

Efficiency is not discussed in the final report. Based on the evaluator's observation, the PRP conducted all the planned inputs. Nevertheless, the final output has not perfectly been finalized, because such activities as trial-testing and finalization of the manual based in the results of the trial were not completed. This failure lowers the effectiveness of the PRP.

(4) Impact

As stated in the final report, impacts on institutions and target groups should be expected if the final output is appropriately finalized and fully utilized. As for the policy impact, it will be seen once the final output has an impact on poverty reduction. It is not mentioned in the final report, but the technological

impact on the target groups may be observed after introducing the Thai recipes in the manual and thence into their practices.

(5) Sustainability

As asserted in the final output, the commitment of the Ministry to utilize the final output is of primary importance to ensure sustainability. The Kenyan implementing organization has embraced the manual, so the manual should be made use of in the region.

2.2 Senegal

2.2.1 Evaluation of the Process

(1) Input

The comparison between the planned and the actually provided inputs in the PRP is shown below.

Table 2.2.1 Planned and Provided Inputs: Senegal

Planned inputs	Provided inputs
Senegal • Technical Experts (Ministry of Agriculture and Hydraulics) • Transportation facilities • Office facilities **Thailand** • Technical Experts (Huai Hong Khrai Royal Development Study Center) • Office facilities **JICA** • Operational supports • Budget supports	**Senegal** • Secretary for the project • All vehicles for technical visits **Thailand** • Experts of natural resource and community development • Inclusion of communities in decision-making • Diversification of income-generating activities **JICA** • Budget support (fifty thousand US Dollars or five million yen)

As shown in the table above, almost all inputs were provided as planned. The planned input on the Senegalese side for “Technical Experts (Ministry of Agriculture and Hydraulics)” was not provided, but one expert each in the fields of agriculture and topography were dispatched as the members of the SV to Thailand, and they should be regarded as inputs as Senegalese technical experts.

(2) Activities

The comparison between the planned and the implemented activities in the PRP is shown below.

Table 2.2.2 Planned and Implemented Activities: Senegal

Planned activities	Implemented activities
(Activities to produce Intermediate Outputs) 1 The project implementation unit is established. 1.1 Personnel and budget are allocated as	1 The project implementation unit was established. 1.1 Personnel and budget were allocated as planned.

planned. 1.2 The plan of operations is formulated. 2 Knowledge exchanges with the Thai partner are conducted. 2.1 Information Exchange ✓ Questionnaire from Thai Experts to Senegal ✓ Answer to questionnaire by Senegalese Experts 2.2 Thai Experts' study mission to Senegal ✓ Understanding the actual condition of Senegalese agriculture water resources management ✓ Report submitted by Thai Experts with recommendations on Senegalese water resources management and the appropriate cooperation scenario 2.3 Senegalese Experts' study mission to Thailand ✓ Technical visit to Huai Hong Khrai Royal Development Study Center ✓ Participation in workshop ✓ Report submitted by Senegalese Experts with recommendations on how to utilize operational techniques learned in Thailand in Senegalese water resources management 2.4 Preliminary Development Plan Report is drafted by both sides **(Activities to produce Final Outputs)** 3. Formulation of Preliminary Development Plan Report 3.1. Examination of Draft Report 3.2. Validation of Draft Report	1.2 The plan of operations was formulated. 2 Knowledge exchanges with the Thai partner were conducted. 2.1 Information Exchange ✓ Questionnaire from Thai Experts to Senegal ✓ Answer to questionnaire by Senegalese Experts 2.2 Thai Experts' study mission to Senegal ✓ Understanding the actual condition of Senegalese agriculture water resources management ✓ Report submitted by Thai Experts with recommendations on Senegalese water resources management and the appropriate cooperation scenario 2.3 Senegalese Experts' study mission to Thailand ✓ Technical visit to Huai Hong Khrai Royal Development Study Center ✓ Work session with local actors o Shared different problems with which they are confronted ✓ Seminar for exchanging views o Identified both strong and weak points and made technical analysis ✓ Report submitted by Senegalese Experts with recommendations on how to utilize operational techniques learned in Thailand in Senegalese water resources management 2.4 Preliminary Development Plan Report was drafted by both sides **(Activities to produce Final Outputs)** 3. Formulation of Preliminary Development Plan Report 3.1. Examination of Draft Report

As the table above shows, the only activity not implemented was 3.2 Validation of Draft Report. This should be undertaken as soon as possible to finalize the report and put the project planned in the report into practice. Details are shown in 2.2.3 Future plan after the PRP.

(3) Knowledge Co-creation

- **Knowledge shared with the Asian Partner Organization**

In the Senegalese PRP, the following three kinds of knowledge were learned from the Thai side.

Table 2.2.3 Knowledge Learned from the Thai Side

(i) The development of economically sustainable agriculture - Rural people's knowledge of the area - Generation of economic profit - Promotion of the conservation of natural resources. (ii) The development of community strength, and the community's role and participation in self-reliant development - Inclusion of communities in decision-making - Consumer-managed water reservoirs (iii) Concepts in restoration of deteriorated areas - Utilization of small dams made with local materials to increase soil retention capacity

The overall goals of the PRP are as follows:

(i)	Water resources management for agriculture in the Sangalkam area will be more efficient.
(ii)	A permanent dialogue framework will be established to involve all water users, particularly farmers.

As far as the relation between the knowledge learned from the Thai side and the overall goals stated above, knowledge (iii) "Concepts in restoration of deteriorated areas" may be relevant to the first stated overall goal, improved water resources management. Similarly, knowledge (ii) "community development and participation" may be related to overall goal (ii) "establishment of a dialogue framework for farmers and water users". Thus, knowledge (ii) and (iii) were appropriate as learned knowledge to address the two overall goals. However, the connection between knowledge (i) and the overall goals is not shown in the final report.

Table 2.2.4 Planned and Achieved Final Output: Senegal

Planned final output (development plan)	Formulated final output (development plan)
Preliminary development plan report is formulated	Strategic development plan 1 Short-term actions 1.1 Cartography of the occupation of soils and exploitation of available resources 1.2 Works of improvement of sites 1.3 Capacity building of extension workers 1.4 Reinforcing an existing center 1.5 Creation of groups and network 1.6 Setting up of a documentary database 2 Mid- and long-term actions 2.1 Revitalization of fossil valleys in the zone 2.2 Construction of small dams in strategic positions 2.3 Regeneration of natural resources (forest, fauna, soils)

Next, the relationship between the knowledge learned from the Thai side and contents of the final output is examined. Knowledge (i), (ii), and (iii) in Table 2.2.3 correspond to the achieved final outputs 1.3, 1.4, and 1.6; 1.5; and 2.2 in Table 2.2.4 respectively. Therefore, it is certain that all the Thai knowledge was introduced in the final output, so the shared knowledge was appropriate to produce the final output.

- Creation of New Knowledge

In the final report, irrelevant information is included, so evaluation of the knowledge creation process is based on an examination of the relationship between the knowledge learned from the Thai side and the contents of the final output. Although the evaluator confirmed that all the learned knowledge was sufficiently utilized to create the final output indicated in the previous section, the detailed procedures to create the final output are not shown. In the PRP, since the Thai knowledge was not test-trialed in Senegal, the Senegalese side did not have a chance to apply and modify the Thai knowledge in the Senegalese context. This suggests that the proposal was made as a "desk" plan, based on the knowledge obtained from the Thai side. It seems that substantial knowledge co-creation will take place only after the proposed new Asia-Africa cooperation project is implemented.

2.2.2 Evaluation of the Final output

The comparison between the planned and the achieved final output is shown in Table 2.2.4 above. The final output was achieved, but its contents are not consistent with the overall goal of the PRP, as shown in the table below.

Table 2.2.5 Overall Goal of the PRP and Objectives of the Development Plan

Overall goal of the PRP	Objectives of the development plan
(1) Water resources management for agriculture in the Sangalkam area will be more efficient. (2) A permanent dialogue framework will be established to involve all water users, particularly farmers.	(1) To restore and develop water resources in the zone (2) To improve the potentialities of rural communities for the sustainable development of agriculture (3) To establish a strong foundation for tripartite cooperation among Senegal, Japan, and Thailand for community development

The objectives of the development plan are not consistent with the overall goals of the PRP. According to the objectives of the development plan in the above table, the issue is not water resource management and water users' groups but water resource development and agricultural development, capacity development, reinforcement of the existing center, etc., as shown in Table 2.2.4. According to the shared knowledge shown in Table 2.2.3 above and the achieved final output in Table 2.2.4, it seems that the shared knowledge was directly introduced into the final output, the development plan. It is thus reasonable to review the development targets based on the knowledge learned from Thailand. However,

how the new knowledge will function in the local context to attain the development targets, and also the feasibility of attaining the changed development objectives, whose coverage is apparently wider than those of the PRP, need to be examined.

2.2.3 Future plan after the PRP

In the final report, implementation of the development plan, the final output, is explained as the future plan, but, first, activities left undone must be completed. As mentioned in 2.2.1(1) Activities, planned activity 3.2 “Validation of Draft Report” has not been conducted yet. Therefore, first of all, the development plan needs to be finalized and agreed to by the parties concerned with the project, such as the implementing organization in Senegal, the partner organization in Thailand, donor agencies, etc. In order to obtain the agreement from them, the plan must be reasonable and logical, so it is necessary to be revised focusing on the following points:

(1) Presentation of knowledge learned from the Thai side
(2) Explanation of the reasons why the Thai side’s knowledge is effective and necessary
(3) Explanation of how to adapt the knowledge to the Senegalese context
(4) Keeping of the logical consistency between “causes - effect/problem” and “activities - outputs - objectives”

2.2.4 Comments on the Assessment of the PRP

(1) Relevance

The final report describes the serious situation of drought, the high necessity of water resource management, and the national strategy for water resource management in the target area. Therefore, the final output, a strategic development plan for mobilization of water resources, can be evaluated as appropriately addressing the problem above in line with the national strategy, indicating high relevance of the PRP.

(2) Effectiveness

The final report describes the expectations of parties concerned in the target area for the proposed development plan, but it does not show the effectiveness of the PRP. Although it was completed as scheduled, the final output, the development plan, has great room for improvement in terms of its quality. This also affects the prospects, which are uncertain, for achievement of the expected outcomes of the development plan. Regarding inputs from the Thai side, they were indispensable because the final output was formulated incorporating many of these inputs from the Thai side.

(3) Efficiency

Efficiency is not clearly mentioned in the final report. However, according to the evaluator’s observation, the efficiency of the PRP is not necessarily high. The planned inputs were all provided, but inputs such as the Thai knowledge and technologies were not fully exploited in the implementation of the PRP. If test trials of the Thai knowledge and technologies had been planned and implemented at the project

site, it would have deepened the knowledge co-creation process, resulting in a higher quality development plan.

(4) Sustainability

The final report shows the coordinating and consultative bodies and their frameworks for implementing the future plan; however, how these bodies and the relationships among them can remain active and functional should also be shown. Apart from these aspects, since the final output is a proposal, it must first consider the prospects for official approval of the development plan by the three parties, the Government of Senegal, the Thai side, and donors. This matter is totally dependent on the quality of the development plan.

2.3 South Africa

2.3.1 Evaluation of the Process

(1) Input

The comparison between the planned and the provided inputs in the PRP is shown below.

Table 2.3.1 Planned and Provided Inputs: South Africa

Planned inputs	Provided inputs
South Africa • Project manager • Extension officers • Non-Governmental Organizations (NGOs) • Community-Based Organizations (CBOs) • Other government departments • Local budget • Facilities, materials and equipment **Thailand** • Training for action group representative and extension officers • Trainers **JICA** • Coordinator • Project budget	**South Africa** • Project manager and staff in charge (from the district office and the provincial office, the Department of Agriculture) • Extension officers • CBOs • Facilities, materials and equipment **Thailand** • Two experts from Huai Hong Khrai (HHK) Royal Development Study Centre in Thailand **JICA** • Coordinator • Project budget

As can be seen in the table above, almost all inputs were provided as planned, except for certain inputs by the South African side, viz., NGOs, other government departments, and local budgets. In particular, the participation of other government departments and NGOs in the PRP might have created collaboration among them, which could lead to the expansion of project activities and strengthening of sustainability.

(2) Activities

The comparison between the planned and implemented activities in the PRP is shown below.

Table 2.3.2 Planned and Implemented Activities: South Africa

Planned activities	Implemented activities
1. Thai side visit to South Africa to acquire more information about the country 2. South African side visit to Thailand for training 3. Workshop held in South Africa 3.1 Pilot training course in South Africa 4. Organization of a project committee	1. Thai side visited 9 areas in Sekhukhune District, South Africa with RAS officials and the community members for observation of the problems of soil erosion. 2. South African side visited Thailand for observation of HHK Royal projects and their villages. 3. Thai and South African participants conducted a workshop in the target area and provided training to the communities on techniques of check dam construction. 3.1 Communities were also trained in team spirit and self-reliance. 4. Coordination of community activities with land care program

According to the table above, only planned activity 4 “Organise a project committee” was not implemented. This activity is a part of the preparation for the new project which is planned in the final output, the project proposal on a technical course on soil erosion and moisture retention. Therefore, activity 4 should be regarded as a part of the new project. As soon as the proposal is approved by the parties concerned with the project, the activity should be undertaken.

Implemented activity 4 “Coordination of community activities with land care program” was not originally planned. This activity is valuable for enhancing the sustainability the PRP. The land care program is one of the on-going provincial development programs for improving and securing the land for agriculture. As a result of being incorporated into the program, communities’ efforts to continue check dam construction will be supported and facilitated by the provincial government financially and technically.

(3) Knowledge Co-creation

- Knowledge shared with the Asian Partner Organization

In the PRP, the South Africans learned the following five kinds of knowledge from the Thai experts.

Table 2.3.3 Learned Knowledge from Thailand

(i)	Several methods and techniques for soil and water conservation
(ii)	Role of community leaders in providing full support to all developmental programs
(iii)	Responsible use of natural resources with more emphases on water and soil conservation
(iv)	Involvement of youth in sustainable community development (based on the fact that there is no sustainability without youth involvement)
(v)	Central importance of community participation for self-reliance and responsibility

According to the final output, a training proposal, the planned training contents center on the construction of check dams using locally available natural materials. This means only learned knowledge (i) and (iii) are included in the final output. However, it seems that the three other kinds of Thai knowledge, (ii), (iv), and (v), are also important factors for sustainable community development. Leaving these factors without incorporating them into the project proposal could undermine the sustainability of the project.

- Creation of New Knowledge

Creation of new knowledge in the PRP is summarized in the following table.

Table 2.3.4 Summary of Knowledge Co-creation

	Endogenous knowledge / Local resources	**Exogenous knowledge**	**New knowledge**
1	Constructing locally popular gabion dams downstream	Constructing many check dams throughout the stream from upstream to downstream.	Constructing gabion dams throughout the stream from upstream to downstream.
2	–	–	Packing stones appropriately in check dam construction
3	Stones are abundant	Building check dams using materials locally available	Building check dams using stones

As shown in the table above, knowledge co-creation was undertaken, and a few kinds of new knowledge were created based on endogenous knowledge/local resources and exogenous knowledge. The manner of mixing these two kinds of knowledge was quite simple. In the cases of knowledge co-creation 1 and 3 in the above table, elements of exogenous knowledge were replaced by endogenous knowledge/local resources. However, the concept of knowledge co-creation is based on the modification of endogenous knowledge by introducing exogenous knowledge as a catalyst or the adaptation of exogenous knowledge into a local context. This method should have been applied for the adaptation of the other kinds of Thai knowledge such as learned (ii), (iv), and (v) in Table 2.3.3, which are closely related to institutions, culture, and values. If that is done, further new knowledge to promote sustainable community development could be created.

2.3.2 Evaluation of the Final output

The comparison between the planned and the achieved final output is shown below.

Table 2.3.5 Planned and Achieved final output: South Africa

Planned final output	**Achieved final output**
Project proposal for technical training course on soil erosion and moisture retention	Project proposal for technical training course on soil erosion and moisture retention

The final output of the PRP was formulated as planned, but the output does not fully reflect the learned Thai knowledge. As mentioned before, the construction of check dams using locally available

natural materials is the focus of the final output proposal. However, apart from that, the South African participants learned other knowledge such as the importance of team spirit, self-reliance, and consideration of the next generation, all of which enhance the sustainability of the project. Therefore, these concepts should also be incorporated into the final output training proposal. In addition, the proposal should be better-reasoned and more logically argued to convince both the Thai side and JICA. The following points should be paid attention to in revising the proposal.

(1) Incorporating the other Thai knowledge apart from that dealing with check-dams
(2) Explaining the reasons why the Thai side's knowledge is effective and necessary
(3) Keeping the logical consistency between "causes - effect/problem" and "activities - outputs - objectives"

2.3.3 Future Plan after the PRP

The main points of the Future Plan after the PRP are as follows:

(1) Co operation with Huai Hong Khrai (HHK) Royal Study Centre for further training and knowledge co creation.
(2) Involvement of more communities in proximity to the demonstration area for short- and long-term study of soil and water management
(3) Encouragement to other districts to come and learn from the demonstration area
(4) Extension of the check dam method to 30% of the Sekhukhune District as a target for more practical demonstration and evaluation of the progress.
(5) Close collaboration with the Provincial land care component, as the PRP has been planned in line with the policy of the Land Care Program

Since the final output of the PRP is a proposal, the first priority must be the optimization of the persuasiveness of the proposal and its finalization and then the gaining of approval of the proposal from the government of South Africa, the Thai partner organization, and donors. This must come before plan (1). Plans (2), (3), and (4) are logical steps to popularize the check dam method in the target area, the Sekhukhune District. Because of their importance, plans (1) to (4) should be carried out continuously as essential components of the training project. Plan (5) should be carried out immediately after the completion of the PRP in order to support communities' continuous efforts to construct check dams in the target area. As discussed here, all of these future plans are relevant to the proposed project, so they should be planned appropriately.

2.3.4 Comments on the Assessment of the PRP

(1) Relevance

The necessity of alleviating soil erosion, the main issue of the PRP, in South Africa is demonstrated in the final report. The validity of the output—and also whether the final output is adequate to secure continuous governmental commitment—seems to be proven, particularly because the PRP is connected with an on-going development program at the provincial level, the land care program.

(2) Effectiveness

The final report fails to discuss the effectiveness of the PRP adequately. Based on the evaluator's observation, the PRP was carried out as planned and the final output was also completed. However, as for the quality of the output as a project proposal, as mentioned earlier, it needs further improvement to present the training program logically and convincingly to the Thai side and JICA. Asian experiences contributed much to the formulation of the final product, as Thai knowledge, particularly related to check dam construction methods, is the main component of the final product.

(3) Efficiency

Careful examination of the project's efficiency is not performed in the final report. The evaluator observed that the efficiency of the PRP is not satisfactorily high enough for the following two reasons. Firstly, although several kinds of knowledge were learned from the Thai side, only the check dam method is included in the final output. Secondly, the formulation of the final output took two more months than planned.

(4) Impact

According to the evaluator's observation, the only impact was the technological impact on the communities and government officials in the target area through the learning and adopting of the check dam method and techniques for improving the local method of dam construction.

(5) Sustainability

The final report shows that the results of the check dam construction training at the pilot project site were taken over to the land care committee. This means the government will be able to support the pilot project through the land care program. However, as indicated in the final output, the committee has not fully comprehended their responsibility for the natural resource preservation, so a strong commitment of the committee to the pilot project may not be expected. Overall, the pilot project should be further consolidated with the land care program to ensure the continuous support of and facilitation by the land care committee, so that sustainability of the positive effects of the pilot project will be enhanced.

2.4 Tanzania

2.4.1 Evaluation of the Process

(1) Input

The comparison between the planned and the provided inputs in the PRP is shown below.

Table 2.4.1 Planned and Provided Inputs: Tanzania

Planned inputs	Provided inputs
Tanzania • Five (5) local experts and office accommodations. • Consultant for survey tools	**Tanzania** • Five experts (one from the Ministry, two from Mvomero District and two from Morogoro Rural District)

• Twenty(20) enumerators • Facilities for workshop 2- Stakeholders • Transport, secretarial services, i.e. computer/s, communications and general administration **Thailand** • Two experts from Thailand for collaboration on guidelines development **JICA** • Technical and financial resources to provide computers and printers, photocopiers, air tickets, allowances and accommodations for both local and international experts. • Financial support for holding dissemination workshops on the findings and recommendations	• One consultant for preparation of survey tools and data processing • Twelve enumerators for collecting the required data **Thailand** • Two experts for collaboration in the survey design, data analysis and development of the guidelines **JICA** • Financial resources to cover costs for allowances, transport, conference facilities, computers and printers, photocopying, stationery, communications and general administration.

As the table above shows, almost all planned inputs were provided except for the number of enumerators. The Tanzanian side originally planned as many as 20 enumerators, but 12 enumerators were actually mobilized. The reason for this change was reported to be the narrowing down of coverage of the base line survey.

(2) Activities

The comparison between the planned and implemented activities in the PRP is shown below.

Table 2.4.2 Planned and Implemented Activities: Tanzania

Planned activities	Implemented activities
1. Initial preparations	1. Initial preparations
2. Sensitization workshop	2. Tanzanian experts' visit to Thailand
3. Tanzanian experts' visit to Thailand	3. Preparation of survey tools
4. Preparation of survey tools	4. Sensitization workshop
5. Baseline survey	5. Baseline survey
6. Survey report and draft guidelines	6. Survey report and draft guidelines
7. Thai experts' visit to Tanzania	7. Thai experts' visit to Tanzania
8. Stakeholders workshop	
9. Finalization of the Guidelines	
10. Approval of the Guidelines	
11. Asian Partner's assistance, communication, materials, etc. (during the entire project)	11. Asian Partner's assistance, communication, materials, etc. (during the entire project)

As shown in the table above, eight activities out of eleven were conducted as planned. Several reasons for the failure of fulfillment of the planned activities were reported. Firstly, the release of funds from JICA to the Tanzanian side was delayed. Secondly, the baseline survey was conducted during a time of year when the interviews with the rural people in the target area were difficult to conduct due to muddy roads and farmers' busy agricultural work. However, the fundamental reason may have been the lack of experience and knowledge of HIV/AIDS among the Tanzanian participants. In fact, no Tanzanian

HIV/AIDS experts participated in the PRP. This crucially weakened such processes as formulation of the survey tools, analysis of the survey results, drawing of conclusions from the survey results, and formulation of the guidelines. As a result, in spite of frequent and careful supervision by the Thai partner organization, the draft of the final output was submitted two months late.

Regarding the sequential order of implemented activities, it slightly changed as planned activity 2 "Sensitization workshop" was shifted from the second to the fourth in the order. As a result, this workshop for soliciting assistance and informing target groups of the survey was conducted based on the completed survey tools. Such a flexible change responding to changes in the progress of the PRP seems to be reasonable.

(3) Knowledge Co-creation

- Knowledge shared with the Asian Partner Organization

In the PRP, the Tanzanians learned the following several kinds of knowledge from the Thai experts.

Table 2.4.3 Knowledge Learned from the Thai Side: Tanzania

(i)	Extensive use of condoms in combating HIV/AIDS
(ii)	Integration of Sexually Transmitted Infections (STIs), tuberculosis (TB) and HIV/AIDS Programs to facilitate efficiency in their management
(iii)	Extensive use of antiretroviral medications (ARV) in combating HIV/AIDS
(iv)	Availability of voluntary counseling and testing (VCTs) up to community level
(v)	People's understanding on the importance of checking their sero status
(vi)	Formation of groups of people living with HIV/AIDS (PLHAs)
(vii)	Involvement of the civil society, mainly NGOs and Faith-Based Organization (FBO)s, in combating HIV/AIDS
(viii)	Establishment of Day Care Clinics (DCC) for providing comprehensive and continuous care to HIV/AIDS patients

The final output, guidelines for developing plans for HIV/AIDS prevention, focuses on the following three aspects of prevention;

- Condom promotion and distribution
- STI control and case management
- Health promotion for specific population groups: children & youths, women and girls, men, disabled people

Therefore, knowledge (i), (ii), (v), and (vii) are relevant to the final output, but it seems that knowledge (iii), (iv), (vi), and (viii) have a less direct contribution to the formulation of the final output. However, since the Tanzanian participants had little knowledge about HIV/AIDS at the early stage of the PRP, all the learned knowledge could be exploited as a fundamental base for conducting the PRP.

- Creation of New Knowledge

The process of knowledge co-creation is not clearly described in the final report. However, based on

an analysis of the final output and final report, it seems certain that knowledge co-creation took place. The guidelines for developing plans for HIV/AIDS prevention—the final output of the PRP—contain three steps that should be taken, which are shown below, as well as the sources of the guidelines.

- The Three Steps of the Guidelines for Developing Plans for HIV/AIDS Prevention

(i) Study of the National Multi-Sectoral Strategic Framework (2003-2007)
(ii) Assessment of the local HIV/AIDS situation and responses to date
(iii) Development of an evidence-based district plan for HIV/AIDS prevention

- Sources

(i) National Multi-Sectoral Strategic Framework on HIV/AIDS (2003-2007), Tanzania
(ii) National Policy on HIV/AIDS (2002), Tanzania
(iii) Tanzania HIV/AIDS Indicator Survey (2003-2004)
(iv) Report on Baseline Survey on HIV/AIDS done in Mvomero and Morogoro Rural District in 2006 (intermediate output of the PRP)

The guidelines were formulated in line with source (i) "National Multi-Sectoral Strategic Framework on HIV/AIDS (2003-2007)", which is a part of Tanzanian existing knowledge of this issue. In particular, step (i) of the guidelines deals with methods for studying the framework. However, the framework is broad and covers many goals and areas to be tackled in the area of HIV/AIDS, so the PRP selected a few of them, focusing on the prevention of HIV/AIDS, as follows.

- Condom promotion and distribution
- STI control and case management
- Health promotion for specific population groups: children & youth, women and girls, men, disabled people

The first and second bullets above correspond to knowledge (i) and (ii) respectively shown in Table 2.4.3. In other words, the selection of the three goals shown above was undertaken based on the learned Thai knowledge, so this knowledge contributed to the design of the first step of the guidelines.

Step (ii) of the guidelines, "Assessment of the local HIV/AIDS situation and responses to date", covers the identification of necessary data and the methods to collect it. In designing this step, the experiences of planning and conducting the baseline survey were reflected. Step (iii) "Development of an evidence-based district plan for HIV/AIDS prevention" suggests how to develop a district plan for HIV/AIDS prevention based on data collected in step (ii). In the explanation, the results of the baseline survey in the PRP and the district prevention plan formulated based on the survey are shown as examples. As mentioned above, the baseline survey largely contributed to the design of steps (ii) and (iii) of the guidelines. In planning the survey and analyzing the results, the Tanzanian side and the Thai side had a lot of exchanges, and substantial technical assistance from the Thai partners was indispensable. In that sense, the survey can be regarded as a fruitful result of knowledge co-creation. Moreover, steps (ii) and (iii) of the guidelines were also created as a result of knowledge co-creation. Hence, it should be concluded that all the three steps of the guidelines were formulated through knowledge co-creation.

2.4.2 Evaluation of the Achievements

(2) Final output

The comparison between the planned and the final output is shown below.

Table 2.4.6 Planned and Achieved Final Output: Tanzania

Planned final output	Achieved final output
Guidelines for community-based responsiveness to HIV/AIDS control and care of the affected and infected people	Guidelines for District Team to Develop Plan for HIV/AIDS Prevention

The final output was formulated but in a different form from that originally planned. The planned final output includes “care of the affected and infected people”, but the formulated guidelines focus on prevention. Moreover, in the planned final output, “community-based responsiveness” was targeted, but such an aspect does not receive focus in the formulated final output. Since the overall goal of the PRP is “to reduce the spread of HIV/AIDS in the country through awareness-raising measures”, it can be confirmed that the formulated final output does not stray from the overall goal. However, the guidelines are not completed yet. Two chapters, “Chapter 3 Important Considerations” and “Chapter 4 Conclusion”, out of the four chapters are unfinished.

2.4.3 Future plan after the PRP

The Future Plan after the PRP is as follows:

(1) Continued JICA support of the Ministry to ensure the final output of the PRP is accomplished
(2) Effectuation and dissemination of guidelines on HIV/AIDS control for the target groups.
(3) Filling in the gaps in terms of knowledge and practice in the fight against HIV/AIDS in the two districts.
(4) Undertaking of an extensive awareness creation campaign on the transmission and prevention of HIV/AIDS.
(5) Escalation of the campaign for promoting condom availability and usage.
(6) Identification of vulnerable HIV risk groups and assistance to them through the initiation of small-scale projects.
(7) Establishment of recreation centers to attract youths away from the risk of contracting HIV/AIDS.

First of all, the activities left undone should be undertaken as soon as possible, specifically, planned activities 8 “Stakeholders workshop”, 9 “Finalization of the Guidelines”, and 10 “Approval of the Guidelines” shown in Table 2.4.2. This corresponds to plan (1) above. JICA and the Thai partner organization should as far as possible provide the Tanzanian side with technical advice and suggestions so activities 8-10 can be completed.

In addition to plan (1), all the plans from (2) to (6) are relevant to the overall goal of the PRP, “to reduce the spread of HIV/AIDS in the country through awareness-raising measures”. After finalising the guidelines, plans (2) - (6) should be carried out as a new project. In the formulation and implementation of

this new project, technical assistance from the Thai side will be valuable, so consultation with the Thai partner and JICA is recommended. Overall, the future plans are organized appropriately.

2.4.3 Comments on the Assessment of the PRP

Comment on the assessment cannot be done due to the absence of the assessment itself in the final report.

2.5 Uganda

2.5.1 Evaluation of the Process

(1) Input

The comparison between the planned and the provided inputs in the PRP is shown below.

Table 2.5.1 Planned and Provided Inputs: Uganda

Planned inputs	Provided inputs
Uganda • Counterpart staff (5) for irrigation, rice cultivation, fisheries, home economics and extension delivery • Facilities: Training venue at Doho Rice Irrigation Scheme excluding accommodations for of participants • Office for resource persons **Thailand** • One resource person for extension methodology (farmers association) • One resource person for fish farming in paddy fields • Arrangement for a study tour **JICA** • Budget support: US $41,604 (limit: 5 million yen) • One resource person for rice cultivation techniques and water management • One contact person for coordinating between JICA offices and the Project Administrators	**Uganda** • Five counterpart staff as training facilitators for irrigation, rice cultivation, fisheries, home economics and extension methodology. • Two project managers, i.e. the project coordinator (Manager, Doho Rice Irrigation Scheme) and the Project Supervisor (Commissioner, Farm Development). • Facilities: training venue, office for resource persons and land for demonstrations. **Thailand** • One facilitator for rice/fish culture: Mr. Tharmoon • One facilitator for extension: Mr. Surat • Mr. Surat also made arrangements for the Uganda field study visit in Thailand. **JICA** • Provided budget support totaling US $41,604. • One contact person: Mr. Tomitaka • One facilitator for rice cultivation: Dr. Tsuboi.

As shown in the table above, all inputs were provided as planned. Two project managers were added as extra inputs by the Ugandan side, but they were involved in AAKCP RCDS from the beginning, participating in the seminars held in Japan, Thailand, and Kenya. Therefore, they should not be regarded as substantial additional inputs.

(2) Activities

The comparison between the planned and the implemented activities in the PRP is shown below.

Table 2.5.2 Planned and Implemented Activities: Uganda

Planned activities	Implemented activities
(Activities to produce Intermediate Outputs) 1. Mobilization of stakeholders Consensus building among key stakeholders Identification of target farmer groups 2. Exchange visits of key Ugandan stakeholders and Thai experts 2.1 Visit of key Ugandan stakeholders to Thailand to acquire knowledge of and experience in sustainable development of irrigation projects (6 persons including 3 farmer representatives) 2.2 Visit of Thai experts to Uganda for training (3 persons including an expert in fish/rice culture development) 3. Training of extension workers and selected farmers (total of 400 persons for 2 weeks of training) 3-1 Making of extension pamphlets 3-2 Workshop for extension workers 3-3 Training for selected farmers 3-4 Support of the activities of ex-participants **(Activities to produce Final Outputs)** 4. Monitoring of the adoption by the ex-participants of the contents of training 5. Evaluation of the short-term impact of the training on ex-participants and other farmers. 6. Preparation of a project proposal to enhance impacts of interventions on other farmers of Doho Rice Irrigation Scheme and to undertake a comprehensive rehabilitation of the scheme.	1 Mobilization and sensitization of stakeholders and target group 1.1 In the meetings, it was found that many people were very much interested in the Project as indicated by the number of farmers requesting to be included in the trainings. 2 Exchange visits 2.1 SV to Thailand: 4 persons including 2 farmer representatives 2.2 SV to Uganda: 2 persons including an expert in fish/rice culture development 3 Training of extension workers and farmers at Doho Rice Irrigation Scheme in Uganda 3.1 Training issues were fish farming, rice cultivation, extension technologies & group dynamics, and home economics. 3.2 60 farmers attended. Activities 4 – 6 were implemented as planned.

Almost all activities were conducted as planned with a few exceptions. The planned activity 2 “Exchange visits” was carried out, but the number of participants was changed due to budget constraints. Similarly, activity 3 “Training of extension workers and selected farmers” was downscaled in terms of its duration as well as the number of participants. Consequently, activity 3.1 “Making of extension pamphlets”, which was supposed to be carried out during the training, was also not carried out. The pamphlet was expected to describe the contents of the training and to be utilized as an effective tool to disseminate the Thai knowledge to the farmers and extension workers who did not attend the training. According to the final report, the reason the pamphlet was not made was due to the limitation of the PRP budget. Nonetheless, the total budget of the PRP was known during the planning stage of the PRP. The

traveling and accommodations costs for the Thai partners for their SV to Kenya should have been estimated more accurately, so that a more feasible activity plan could have been formulated.

"Activities to produce Final Outputs" were carried out as planned. Regarding planned activity 4 "Monitoring of the adoption by the ex-participants of the contents of training", the final report shows that the farmers' adoption rate of recommended rice cultivation techniques increased from 40% to 60%. Concerning planned activity 5 "Evaluation of the short-term impacts of the training on ex-participants and other farmers", the final report indicated that there were no substantial short-term increases in the farmers' income. The PRP showed many achievements such as the initiation of rice/fish culture, formulation of water user groups, strengthening of farmers' association, etc., but the six-month period of the PRP was too short to observe an impact on the farmers' income. Nevertheless, the PRP should be credited for undertaking a lot of activities and bringing about several changes in farmers' practices, including the adoption of new technologies, the formulation of water user committees, etc. The initiated activities and the achievements in the PRP are expected to be developed further in the next project planned in the proposal, the final output.

(3) Knowledge Co-creation

- Knowledge shared with the Asian Partner Organization

In the Ugandan PRP, the following knowledge was shared with Thailand.

Table 2.5.3 Knowledge Learned from the Thai Side

(i) Agricultural production
(ii) Irrigation and water management
(iii) Rice cultivation
(iv) Integration of fish farming in paddy fields
(v) King's new Theory of Land and Water Management
(vi) Income generating projects for women groups
(vii) Production of sweet corn, asparagus and biofertilizers

The above knowledge is all relevant to the overall goals shown in the following table. For example, knowledge (ii) and (iii) directly address overall goals (i) and (ii) respectively. Knowledge (v) and (vii) partly contribute to overall goal (ii) in terms of sustainable water supply and environmentally friendly biofertilizer. Knowledge (i), (vi), and (vii), which pertain to the issues of agriculture and income generation, cope with overall goal (iii). However, the final report does not show how the knowledge learned from the Thai side will be useful for addressing the overall goals in a specific and concrete manner. In order to formulate a convincing project proposal, the final output, based on the results of the PRP, should clearly explain how and why the Thai knowledge is useful.

Table 2.5.4 Overall Goals of the PRP

(i) Farmers in the Doho Rice Irrigation Scheme improve the yield of and income from irrigated rice

integrated with fish rearing through farmer training and extension approaches developed in the Doho Rice Irrigation Scheme. (ii) Uganda's rice imports are decreased because of increased domestic production of rice in environmentally friendly ways. (iii) Food nutrition is improved

In addition, the Ugandans advised the Thai side on the points below during their SV to Thailand. Even though the Thai participants' impression of the advice was not shown in the report, such inputs from the African side to the Thai side should be welcomed. Mutual knowledge exchanges between Asia and Africa lead to horizontal cooperation, which is a fundamental principal of South-South cooperation.

Table 2.5.5 Knowledge and experiences Provided to the Thai Partners.

(i) Rice cultivation (rice varieties, palatability, pest and disease control) (ii) Cultural control of crop pests and diseases

- Creation of New Knowledge

The Ugandans learned the Thai knowledge, as shown in Table 2.5.3, and created new knowledge based on their existing knowledge and experiences. The following table provides a summary of this knowledge creation.

Table 2.5.6 Existing Knowledge and Knowledge Creation

Existing knowledge and experiences	Created new knowledge
1. Experience of rice cultivation since World War II	1 New rice cultivation
2. Experience of catching fish	2 Rice paddy fish culture
3. Culture of togetherness among rural communities	3 Farmers groups

It should be noted that the new knowledge created in the PRP was described in comparison with its relevant existing knowledge, indicating that the Ugandan side acknowledges that knowledge creation takes place based on existing knowledge.

Regarding the new knowledge 1 "New rice cultivation", effective farming methods can be expected to be created based on knowledge from both Thailand and Uganda, since both countries have long experience in rice cultivation. Although modification and application of new cultivation methods generally take time, if the farmers and extension workers continue to try the Thai methods in the target area, eventually practical new methods may be created.

As for new knowledge 2 "Rice paddy fish culture", it seems that there is no accumulated experience among farmers in the area, because the corresponding Ugandan experience of fish catching is unrelated to rice paddy fish culture. Therefore, they need to start by practicing the Thai method and then modifying it

through trial and error to fit their context.

Concerning new knowledge 3 “Farmers groups”, the final report noted that the culture of togetherness among the rural Ugandans acted as a basis to organize farmers groups. A culture of togetherness may be common to many countries, but in Uganda it surely differs from that in Thailand in terms of degree of togetherness, common practices and rules for co-working, taboos of grouping, and kinds of existing groups, such as religious groups, kinship groups, etc. This means group formulation methods in Thailand may not necessarily be suitable in Uganda. Therefore, the Ugandan culture should be analyzed in more detail so as to smoothly organize various groups, taking advantage of the characteristics of the culture.

2.5.2 Evaluation of the Final Output

The comparison between the planned and the achieved final output in the PRP is shown below.

Table 2.5.8 Planned and Achieved Final Output: Uganda

Planned final output	Achieved final output
A project proposal on cooperation between Uganda and JICA for comprehensive rehabilitation of the Doho Rice Irrigation Scheme.	A draft Project Proposal on Technical Cooperation among Uganda, Thailand, and JICA was formulated, aiming at increasing incomes of farmers through integrated rice production in the Doho Rice Irrigation Scheme.

The formulated final output is more specific than the planned project proposal as it targets income generation through integrated rice production. In addition, it proposes tripartite cooperation among Uganda, Thailand, and JICA, while bilateral cooperation was assumed in the planned proposal. These differences could have arisen from the substantial results obtained through the PRP activities. For example, the organizing of farmers was successfully implemented, so it was reasonable to plan the further development of the activity in the proposal. Moreover, rice paddy fish culture initiated in the PRP is to be up-scaled according to the proposal. However, due to the lack of sufficient explanation about the results of the rice paddy fish culture, evaluation of its appropriateness is not possible. Since the proposal should be based on the PRP, the results and potential of the implemented activities have to be fully described in order that the outputs and activities planned in the proposal, which are based on the already implemented activities, can be explained convincingly.

2.5.3 Future Plan after the PRP

The Future Plan after the PRP is as follows:

(1) Implementation of the new proposed project
- Capacity building of extension staff and farmers
- Improvement of institutional set-up through strengthening Farmers Association, Women and Youth groups and Water users’ committees.
- Improvement of rice yields
- Enhancement of rice cultivation integrated with fish rearing

- Establishment of an agricultural technology transfer centre for purposes of training and guiding farmers and extension staff.

(2) Setting up of a rice seed community centre in order to improve the quality and purity of rice planted.
(3) Utilization of animal power and small tractors for proper and timely land preparation.
(4) Production of manuals for farmers and extension staff in the fields of rice cultivation integrated with fish rearing, water management, mushroom production, aquaculture, and value addition through agro-processing.
(5) Extending the benefits of the project to nearby out-grower schemes in the Butaleja District and beyond.

It is clear that the above future plans are relevant to the main objective of the project planned in the proposal, which is "Increasing incomes of farmers through integrated rice production", and they are regarded as being planned appropriately. Plan (1) "Implementation of the new proposed project" has to be carried out immediately after the PRP, but the priority of the other activities needs to be considered carefully. Specifically, (4) "production of manual" should be carried out simultaneously with the implementation of the project, because the manual must be based on not only the lessons Ugandans learned in the PRP but also the results of putting into practice the Thai knowledge in the next project. This manual will act as a substitute for the extension pamphlet which was not prepared in the PRP. As another option, the development of a manual can be included in the project, since the cost of this activity seems to be lower than that of the others.

In addition, in order to realize the next project, the proposal must first be approved by all the parties concerned—Uganda, Thailand, and donors. To obtain the parties' approval, the proposal should be revised, taking into account the following aspects.

(1) Demonstration of the results of and prospects for rice paddy fish culture
(2) Explanation of the reasons why the establishment of an agricultural technology center is effective and necessary for attaining the project purpose
(3) Reconsideration of the feasibility of mushroom culture and the high potential of rice cultivation, which was omitted in the proposal
(4) Keeping the logical consistency between "causes - effect/problem" and "activities - outputs - objectives"

2.5.4 Comments on the Assessment of the PRP

(1) Relevance

In the final report, it is shown that the issue of low incomes can be addressed by the integration of rice cultivation and fish culture. However, a feasibility study on rice/fish culture was not conducted, and the trial of this activity has not had a concrete impact on farmers' income. Therefore, the relevance of focusing on rice/fish culture in the next project is not assured, even though the appropriate natural environmental conditions for rice/fish culture and relevance to the development policy are clearly described in the report.

(2) Effectiveness

It seems that the PRP was effectively conducted, since the final output was competed as planned. As for the quality of the final output, a few approaches lack convincing evidence, as mentioned 2.5.4 (1), but others were planned based on the results of the PRP. Asian knowledge regarding rice paddy fish culture, mushroom farming, farmers organizations, etc. also provided effective inputs for the PRP, as the knowledge was incorporated in the final output.

(3) Efficiency

As noted in the final report, inputs were implemented as planned, but some of them were not efficiently utilized to produce the final output. For example, the results of a trial attempt at rice paddy fish culture were not observed due to the limited PRP period. Moreover, the Ugandans did not try mushroom culture, even though they learned the relevant knowledge. If the Thai knowledge had been tried and results observed during the PRP period, the results could have improved the feasibility of the new project set forth in the proposal.

(4) Impact

Several positive impacts were reported such as the farmers' initiation of rice/fish culture by themselves and the creation of women's groups, etc. In addition, the technological impacts concerning rice cultivation and rice paddy fish culture should be noted. However, as mentioned in the final report, no substantial impact on farmers' incomes was confirmed due to the short period of the PRP.

(5) Sustainability

First of all, as the final output is a project proposal sustainability will be determined by whether the proposal is approved or not. The sustainability of the positive results of the PRP largely depends on the next project, but the prospects for the proposal are yet to be seen. The positive commitment of the Doho Rice Irrigation Scheme Farmers' Association (DORSFA) in following up the PRP is a good sign for sustainability, and it should be highly valued.

2.6 Zimbabwe

2.6.1 Evaluation of the Process

(1) Input

The comparison between the planned and the provided inputs in the PRP is shown below.

Table 2.6.1 Planned and Provided Inputs: Zimbabwe

Planned inputs	Provided inputs
Zimbabwe • Offer from the Ministry of Agriculture to coordinate the activities of the project with all the stakeholders, including the local communities, extension staff, and other	**Zimbabwe** • Three officers from the Head Office coordinated activities of the PRP • Six staff personnel from the project area drafted sections of the manual

community-based organizations involved in the project. **Thailand** • Visit of experts from Kasetsart University and the Department of Agricultural Extension of Thailand to Zimbabwe to assist in the initial stage of developing the extension Operational Manual (OM). • Consultations by experts from time to time for technical assistance and support until the products of the PRP are finalized. **JICA** • Financial support: ¥5 million (approximately US$50,000). • Technical expertise to the project.	• Two provincial authorities coordinated project activities at the provincial level. **Thailand** • Three experts in total from Kasetsart University (two experts) and the Ministry of Agriculture and Cooperatives (MOAC) (one expert) of Thailand visited Zimbabwe to assist in the initial stage of developing the OM. • The experts were from time to time consulted for technical support until finalization of the PRP products. **JICA** • Financial support: ¥5 million (approximately US$50,000). • JICA expert in AREX (Mr. Yoshitake Shimbo) and JICA Regional Support Office for Eastern and Southern Africa (two experts)

As shown in the table above, all the inputs were provided as planned.

(2) Activities

The comparison between the planned and the implemented activities in the PRP is shown below.

Table 2.6.2 Planned and Implemented Activities: Zimbabwe

Planned activities	Implemented activities
(i) Preparation of seminars for Operational Manual (OM) (ii) Seminar/workshop with extension workers, farmers, policy makers and other stakeholders (iii) Visit by Thai experts (iv) Assignment of relevant stakeholders to draft specific sections of the OM (v) Collation of seminar/workshop reports and recommendations (vi) Drafting of OM (vii) Study visit by Zimbabweans to learn from Thailand's experience in extension approaches and value addition. (viii) Sending of draft OM to Thailand for Thai side's comments (ix) Preparation of final document (x) Receiving of feedback from beneficiaries (the final Stakeholder Consultation) (xi) Printing and distribution of OM	(i) SV to Zimbabwe (ii) Agricultural Capacity Building Workshop (iii) Draft sections of the OM were produced during the workshop and work on completion of the manual was undertaken by a provincial team selected at the workshop (iv) Seminar/workshop reports and recommendations were collated. (v) The manual was drafted and consolidated and sent to Thailand for editing and comments. (vi) Two project proposals were drafted with the assistance of JICA project formulation advisors (vii) SV to Thailand

Only planned activities (x) and (xi) were not implemented, the reason due to time constraints of the PRP. On the other hand, activity (vi) "drafting two project proposals" was not in the original plan but it was carried out. The suggestions by Thai experts regarding possible areas of collaboration for other

projects led to the formulation of the proposals. These proposals are also a part of the outputs as a result of knowledge co-creation.

(3) Knowledge Co-creation

- Knowledge shared with the Asian Partner Organization

In the PRP, knowledge Zimbabweans learned from the Thai side is shown below.

(i) Concepts for agricultural development
- Farmers should be involved in the research and extension process at all stages.
- Linkage between the systems of politics, agricultural research & extension, and farming has great implications for the development of agriculture

(ii) Practical knowledge for the OM
- Several suggestions, such as how to create a user-friendly manual, were given by the Thai experts

It should be noted that the Zimbabweans learned (i) "concepts for agricultural development" apart from (ii) "practical knowledge for the OM". The above-mentioned concepts might not have direct connection to the manual, but they are expected to contribute to policy and strategy formulation for agricultural development in the future.

According to the final report, the Thai partners provided the Zimbabweans with practical and concrete advice about the draft manual in terms of ensuring usability of the manual. However, the details of this advice are not clearly shown. In addition, the final report does not indicate what knowledge from Thailand was incorporated into the manual. The final report states that existing manuals in Zimbabwe were the foundational materials for the new manual. Based on this information, it should be assumed that most of the manual originated from existing knowledge in Zimbabwe and that the Thai side's knowledge contribution was limited to advice about presentation methods for the contents.

- Creation of New Knowledge

As another output from knowledge co-creation, two project proposals were formulated as follows:

(i) Project for establishment of integrated farming model in rural communities of Masvingo Province.

(ii) Project for establishment of a model of local community development through participatory approaches to improve the livelihoods of rural communities.

As these proposals have not been submitted to JICA officially yet, their details are still unknown. However, according to the brief explanation of the proposals in the final report, the manual is expected to play an important role in the two projects. If the proposals are accepted and implemented, the two outputs—the proposals and the manual—can have a synergistic effect leading toward the same overall goal. In this way, the two outputs can be effectively exploited after the PRP.

2.6.2 Evaluation of the Final Output

The comparison between the planned and the achieved final output in the PRP is shown below.

Table 2.6.3 Planned and Achieved Final Output: Zimbabwe

Planned final output	Achieved final output
OM for extension workers	Agricultural Extension OM • The Crops Section • The Livestock Section • The Agricultural Engineering and Economics Section

The final output was formulated as planned and consists of three sections on crops, livestock, and agricultural engineering and economics. The Operational Manual deals with a wide range of items, so it can stir farmers' interest and introduce new crops and livestock to them. Furthermore, the OM reflects characteristics of weather and soil in Zimbabwe and provides easy-to-learn explanations.

Although the contents of the OM are various and modified for the local users, the manual must be utilized based on the appropriate guidance of extension workers. Since it is the first comprehensive extension manual in Zimbabwe, guidelines for using the manual in the field may be necessary. If such guidelines, together with the general extension methods, are included in the manual, extension workers may find the OM easier to use.

2.6.3 Future Plan after the PRP

The Future Plan after the PRP is as follows:

(1) Improvement and distribution of the manual
(i) 300 copies of the OM will be printed and distributed to the extension workers in the project area.
(i-1) An evaluation sheet will be attached to the manual to receive feedback from the end-users (the extension workers).
(ii) It will be disseminated to all the other provinces of the country after necessary modifications are made.

(2) Collaboration with local university
(i) The agricultural department of a local university (Midlands State University) will collaborate with the Agricultural Research and Extension (AREX) Masvingo Province in research and extension work.
(i-1) As the ideas takes root, it is expected that some farmers will be sent to the university for training just like at the Agricultural Technology Transfer Center at Kasetsart University.

The immediate undertaking of plan (1) "Improvement and distribution of the manual" is necessary, since plan (1) (i) was supposed to have been implemented during the PRP. As indicated in (i-1), an evaluation sheet will be incorporated into the manual, which is fine for knowing the users' impressions, but it should be noted that collecting responses from extension workers, who are stationed throughout the entire province, is not an easy task. Moreover, sufficient time must be given to the users to utilize the

manual and come up with meaningful feedback. Considering the sequence of plan (1), distributing 300 copies to the extension workers, collecting feedback, and revising the manual for the national version may take a few years.

Plan (2) “Collaboration with local university” should also be promoted. The research capacity of a university will benefit both AREX and the farmers. Direct connection between the university and farmers, such as through farmers’ training at the university, is also important for each side. The university can have an opportunity to obtain frontline information directly from the farmers, while the farmers can learn the latest technologies at the university.

Regarding the two project proposals, the two proposals should be finalized and submitted to the three relevant parties, Zimbabwe, Thailand, and JICA for formal discussions.

2.6.4 Comments on the Assessment of the PRP

(1) Relevance

The final report made a strong case for the necessity of the final output of the PRP, an extension manual, by emphasizing the lack of comprehensive manuals for agricultural extension staff. As for relevance to government policy, the final report should provide a more detailed explanation to prove how the PRP is consistent with government policy.

(2) Effectiveness

The manual was just completed and has yet to be utilized in the field; therefore, it is premature to evaluate the effects of the manual. Regarding the contribution of Asian experiences, this contribution seems to be limited, as mentioned in 2.6.1 (3) Knowledge Co-creation, because the Thai side’s knowledge was mainly about the aspects of presentation and usability of the manual rather than about the actual contents of the manual.

(3) Efficiency

Implementation of the inputs and their unwasted utilization are clearly explained in the final report. However, it is still too early to evaluate several aspects of the inputs such as the efficiency of the input scale. In addition to the planned outputs, the PRP formulated two project proposals as outputs from knowledge co-creation. As these additional outputs are in line with the overall goal of the PRP, they enhance the efficiency of the PRP.

(4) Impact

As mentioned in the final report, the impacts of the PRP have not been visible yet. According to the evaluator’s observation, expected impacts should be seen on the technologies and techniques farmers utilize and on their agricultural income, if the manual is finalized and utilized appropriately.

(5) Sustainability

The Zimbabwean participants have a plan to modify and distribute the manual, but dissemination of the manual within Masvingo Province and then later to all parts of the country will probably be different in terms of budget, difficulties in revision of contents, etc. Appropriate adaptation of the manual within the context of Masvingo Province is the first step toward later nationwide distribution.

Chapter 3 Issues, Potential, and Recommendations to Promote AAKCP and Asia-Africa Cooperation

3.1 Issues and Recommendations

3.1.1 General Considerations in Asia-Africa Cooperation

(1) Language Barrier

(i) Issue

In some PRPs, it was reported that the lack of a common language between Africa and Thailand impeded project implementation to some extent. For example, in the PRP in South Africa, the Thai experts did not have a sufficient enough command of English to facilitate a workshop during the SV to South Africa, so JICA had to provide them with an interpreter. Moreover, the rural people at the project site also do not understand English enough, so a South African facilitator utilized the local language throughout the workshop. He explained key points of the discussions in English occasionally during the course of the workshop, but the explanation needed to be translated into Thai. As a result, the Thai experts could not intervene in the process of the workshop while it was going on. Some difficulties in verbal communication between Thai experts and African participants were also reported from Uganda.

In addition to problems in verbal communication, written materials also somewhat hampered knowledge exchanges. Documents, textbooks, manuals, guidelines, etc. in Thailand are basically written in Thai, so participants from Kenya, Tanzania, Uganda, and Zimbabwe had difficulties learning from the Thai materials. Moreover, the SV to South Africa was not prepared well; one of the reasons was the lack of direct communication between the Thai experts and the South African participants through e-mail prior to the SV. The Thai participants' insufficient command of English limited e-mail communication, since assistance from interpreters was unavailable in their offices in Thailand.

(ii) Recommendations

In order to address the above issue, efforts could be made by the Thai side to improve the English skills of some Thai experts. Hiring interpreters does not lead to a fundamental solution. Language training focusing on technical cooperation should be made available to personnel whose English proficiency does not reach a required level. TICA may be one of the suitable organizations which could organize the language training, since it is in charge of the planning and administration of technical cooperation. English is the common language for technical cooperation in many countries in Africa, Middle East, and Asia. Therefore, improvement in English proficiency of Thai experts will widen the scope of their activities around the world.

Such a language training system for Thai personnel will enable those who have practical frontline skills and knowledge but do not have sufficient English skills to be dispatched overseas as experts. This will increase and vary the pool of available experts and thence expand the range of Thailand's technical cooperation. Practical local knowledge will bring originality to Thai international cooperation and

stimulate knowledge exchanges between Thailand and African countries. However, English training courses are not a panacea to address the English issue. Technical cooperation experts should also bring well-prepared materials in English, such as textbooks, handouts, presentation slides, etc. to supplement verbal communication and make their explanations easy to understand. Similarly, pictures, samples, etc. are also useful. These preparations are crucial to ensure a high quality of cooperation.

In addition to language training, general know-how on technical cooperation, which can be developed from the experiences of Thai experts who have been dispatched overseas before, should also be taught to candidates wishing to become Thai technical experts. JICA might be able to assist TICA in designing and implementing the training courses for English and technical transfer and cooperation, since JICA has accumulated a great deal of experience in training Japanese experts.

(2) Different Context

(i) Issues

Although one of the merits of Asia and Africa cooperation is the relative similarity between Asian and African countries, differences also surely exist between the two regions. The following differences were recognized during the course of the implementation of the PRPs by the Asian and African partner organizations, and these differences to varying degrees impeded the promotion of knowledge co-creation between the two sides.

- Agricultural Practices

Differences in agricultural practices led to difficulty in adapting Thai methods into African contexts. For example, the climate of Zimbabwe is different from that of Thailand, so the kinds of major crops are not the same in both countries. Moreover, in Thailand, relatively advanced agricultural machinery is commonly used, but such machinery is not available in Zimbabwe. Such differences limit the domain of technical cooperation between two countries in the field of agriculture.

- Culture

Differences in culture, religion, and way of thinking caused difficulties in introducing certain Thai practices into Africa. For example, the Zimbabweans found that the practice in Thailand of more prosperous farmers voluntarily assisting other farmers might not be easily adopted in their home country. Similarly, South Africans realized that group work in their country is not as common as in Thailand. These Africans recognized that some practices could not simply be copied in Africa because of cultural differences.

- Institutions

Differences in laws and institutions between Africa and Thailand acted as a barrier for introducing certain Thai practices into Africa. For example, the farmers in Senegal do not own their own land, but

those in Thailand do. Since whether farmers own their own land or not influences their attitude toward investment in the land, the introduction of new crops, accessibility to credit, etc., those institutional differences have created different farming practices in the two countries.

(ii) Recommendations

- Positive Attitude toward Differences

As described above, differences between Asia and Africa interrupted knowledge co-creation in some aspects of PRP implementation. However, it is possible to learn and create new knowledge in spite of the differences. In fact, Africans learned from differences between the two sides in the other aspects. For example, in the South African PRP, the local method of small dam construction was different from small dam construction methods in Thailand due to the differences in the steepness of mountains and the degree of deforestation. However, South Africans were still able to partly introduce the Thai method to improve their own method. In case of the Kenyan PRP, the dried mango industry has been well developed in Thailand but not in Kenya, although mango is abundant in both countries. That difference made the Kenyans acknowledge the possibility of developing the agro-processing industry in Kenya and acquiring knowledge from the Thai side to do so. It is clear from the examples shown above that Asia and Africa can learn a lot from their differences. To learn from these differences, it is important first to positively acknowledge the differences and then try to consider what can be learnt from the differences.

- Careful Analysis of Factors behind Differences

However, these differences do not always contribute to learning which can lead to action. It is necessary to analyze the differences in detail, particularly cases in which it is difficult to introduce knowledge from the outside immediately, in order to find ways to learn from the differences.

In analyzing differences, the factors behind them should be uncovered in detail. Once these factors and backgrounds are fully revealed, it is possible to identify a certain level and type of difference that can be overcome. In the case of small dam construction in South Africa, environmental differences such as mountain steepness and degree of deforestation were deemed to be relatively minor, so elements of Thai small dam construction method were introduced to South Africa.

Regarding cultural differences, it may not be easy to bridge the differences. As mentioned above, the South Africans recognized the value of collective work, but they do not have the custom to undertake it. In order to consider initiating the practice of collective work, first, the background of the practice in Thailand must be analyzed in detail. If it is shown that the factors behind the Thai practice are logical and appropriate for South Africans, the practice may possibly work in South Africa. At the same time, careful analysis must be done on the cultural aspects of South Africans. First, factors leading to the non-practice of collective work should be analyzed. If it is found that this non-practice is not based on any compelling or appropriate reasons, the introduction of the practice may be considered. Second, even though South

Africans do not share the exact same customs with Thais, similar practices between both sides can be found. For example, collective work within kinship groups might be studied to seek ways to introduce collective work within this South African context.

Regarding the differences in institutions, the possibility of introducing the institutions in question should be considered if the Thai institution seems to work well and benefit citizens and is perceived to be of usefulness in an African context.

(3) Insufficient Project Implementation Capacity

(i) Issues

The secretariat of AAKCP RCDS observed that most of the African implementing organizations had difficulties in conducting their PRPs to some extent. During the PRP period, all of the African participants were requested to submit various documents such as monthly monitoring reports, the final output, and the final report, but many of them were submitted behind the deadline. For example, the final outputs were supposed to be completed by May 2006, but only three PRPs out of six met the due date. As for the monthly monitoring reports, a few African organizations skipped submission of the reports once or twice. Report submission is a regular part of project activities, but most of the organizations failed to keep to the schedule of reporting.

In addition to time management, some other problematic aspects were seen in the implementation of the PRPs. For example, the SV to South Africa by the Thai experts was carried out without adequate preparation. Specifically, the schedule of the SV was discussed and set on the first day of the SV, and the agenda of a meeting was decided just before the meeting. Consequently, only some parts of the planned activities were carried out in the SV. This seems to be attributable to insufficient capability of project implementation.

Regarding the quality of the final outputs, the proposals and development plans were not as good as the project documents. In these proposals, relationships among the problems, causes of the core problem, project purpose, outputs, and activities are not clearly and logically indicated or organized; consequently, the proposals often fail to demonstrate convincing reasons for conducting the projects proposed in them. One countermeasure for this problem is the formulation of guidelines for the preparation of such proposals. For the preparation of PRP's project documents, a detailed guideline was given to all the African organizations, and they were able to formulate, to some extent, logical and coherent documents in line with the guideline. For the preparation of the proposals as final outputs, no standard guideline was presented since the contents of projects varied depending on each PRP. As a result, the proposals are not formulated well. This suggests some African organizations have not acquired adequate methods of project planning yet.

(ii) Recommendations

The issue of insufficient implementation capacity could have been partly alleviated by providing both African and Asian participants with project cycle management (PCM) training in advance of the formulation of each PRP. The PCM course provides training in problem analysis, organization of relationships between causes and effects, selection of projects, identification of project purposes, outputs, and activities, etc. Moreover, methods for the monitoring and evaluation of projects are also covered in the training. This training could have assisted participants in 1) conducting daily monitoring of each PRP's progress, including report submission, 2) formulating appropriate project documents and project proposals as the final outputs, and 3) assessing the achievements of each PRP. As explained above, PCM training is useful for those who formulate and implement their projects by themselves, so the training should be prepared for participants of the next sub-program of AAKCP.

However, other know-how necessary for project implementation such as preparation of SVs, effective facilitation of workshops, analysis of outputs, etc. are not covered in PCM training. Such know-how and knowledge can be strengthened by various methods, including hands-on-training under the guidance of JICA experts.

(4) Complicated Coordination

(i) Issues

Asia-Africa cooperation, one type of South-South cooperation, requires the involvement of many entities in a project. For example, for the coordination of an SV to Africa from Thailand, the following organizations have to share information: the Thai partner organization, TICA, the African implementing organization, the JICA office in the African country, the JICA Thailand office, JICA expert(s) in charge of the PRP (if any), JICA headquarters in Tokyo, and the Secretariat. This coordination naturally takes a longer time than that for bilateral cooperation, which involves a smaller number of actors. In point of fact, communication difficulties among these many actors were reported by the South Africans.

(ii) Recommendations

Although the basic underlying factor for the complicated coordination is the greater number of actors involved, this situation is greatly aggravated by the lack of experience of all the actors in Asia-Africa cooperation, and the lack of clear understanding about who is responsible for what. One solution is the development of an operational manual for this kind of specific cooperation form. For example, JICA's training courses conducted outside Japan also require the involvement of a number of parties from the host country and the various participating countries. Because of this complexity, this type of training course is organized with a well-prepared operational manual, and every step of preparation for the selection and dispatch of participants, etc. is carried out as if an assembly-line operation. Such an operational manual would greatly contribute to the smooth implementation of Asia-Africa cooperation. Therefore, the preparation, based on the experiences from the first sub-program, of an operational manual for AAKCP which shows clearly who is responsible for what is highly recommended for the next sub-program.

3.1.2 Specific Items in AAKCP RCDS

(1) Time Constraint

(i) Issues

It was reported by all the African implementing organizations that a six-month period was not sufficient for the PRPs. The general activities of a PRP consisted of two SVs, stakeholder workshops, the final output formulation, trial of the final output, submission of monthly reports and the final report, etc. As a result, their schedules turned out to be quite tight, and delays were inevitable. For example, delays caused by the late releasing of project funds, elections, restructuring of ministries, resignings of staff in charge, natural disasters, etc. occurred and impeded the progress of the PRPs. These are external factors which the African implementing organization could not control. With a timeline of only six months, even a few weeks' delay crucially affected the progress of the PRPs. Once implementation of some activities was delayed, it seems that it was very difficult to catch up with the original schedule. It might be concluded that the volume of planned activities for each PRP was too great to complete within six months.

(ii) Recommendations

Six months was too short to complete the planned activities of each PRP. Moreover, the three issues of unavoidable delays, insufficient project implementation capability, and complicated coordination aggravated the situation. There are different countermeasures to address the latter two issues. Providing participants with a relevant training course will improve project management skills and preparing an operational manual will make the coordination of AAKCP smoother. However, unavoidable delays occurring outside the PRPs will certainly undermine the progress of the PRP. Therefore, even assuming that these different countermeasures alleviate time constraints to some extent, six months may still not be enough. According to the secretariat's observation, eight months would be an appropriate period for the PRPs, given the same amount of planned activities.

(2) Sustainability

(i) Issues

The sustainability of activities initiated in the PRPs should be examined, focusing on both the African side and Asian side. On the African side, the sustainability can be high or low depending on the type of final output. The African organizations in Kenya, Tanzania, and Zimbabwe, which formulated manuals or guidelines as their final outputs, already have an original project to implement, improve, disseminate, and utilize the outputs thereof by themselves after completion of the RPP. Therefore, assistance from the outside is not necessarily essential. On the other hand, Senegal, South Africa, and Uganda formulated a development plan or proposal for a new project, and they need assistance from Thai partner organizations for technical inputs and from donors for financial supports in order to put the proposed projects into operation. If a proposal is not planned well and fails to obtain the approval for cooperation from Thailand and donors, it may be difficult for the activities initiated in the PRP to be

sustained and leave a significant impact on the target group.

With regard to the sustainability on the Thai side, it largely depends on the intentions of TICA and other Asian organizations.

(ii) Recommendations

As described above, sustainability on the African side may vary depending on the type of final output from a PRP. If the final output is a guideline or manual to be utilized after the completion of a PRP, sustainability of the activities initiated in the PRP is assured. Improvement of the technical capabilities and knowledge of relevant government staff is also reasonable as an objective of a PRP. A proposal for further cooperation can be planned after confirming the positive impacts of a PRP.

3.2 Potential and Recommendations

3.2.1 General Considerations in Asia-Africa Cooperation

(1) Creation of Foundation for Future Cooperation

(i) Potential

A number of participants from Africa and Asia were involved in AAKCP RCDS and experienced firsthand Asia-Africa cooperation. According to the secretariat's observation of the feedback discussions in the final seminar, almost all of the participants have acknowledged some value in the cooperation. These positive impressions can act as a foundation for further promotion of Asia-Africa cooperation. For all of the African organizations, it was the first time to undertake Asia-Africa cooperation. For the Thai side, implementing technical cooperation with Africans in Thailand was not new, but doing so in Africa was the first experience for many of the Thai experts. After completing each PRP, all the African organizations and Thai partner organizations expressed a high interest in continuing cooperation with the same partner. Through AAKCP RCDS, the Africans realized the value of Thai knowledge, and the Thais gained experience in technical cooperation in Africa. This will be a strong basis for promoting Asia-Africa cooperation in the future.

In addition, a major portion of Asia-Africa cooperation supported by JICA is conducted in the form of training courses held in Asian countries, but generally, these training courses do not initiate new Asia-Africa cooperation projects. The reason may be attributed to the different characteristics between ready-made group training courses and the order-made PRPs. Through SVs and seminars in Japan, Thailand, and Kenya, Asians and Africans exchanged information and knowledge that was focused on issues of primary concern for them. As a result, they know each other well in terms of not only relevant technical matters but also social and cultural matters. Each pair of Asian and African countries has created a close network between them at the organization and individual level, which will also be a foundation for further cooperation.

(ii) Recommendations

As described above, a positive image of Asia-Africa cooperation was shared among all the parties involved in AAKCP RCDS, and it will act as a foundation for further Asia-Africa cooperation. However, if the theme of the sub-program changes at the next AAKCP, this built-up foundation in the field of rural community development will not be of functional use for cooperation in another sector such as education, health, etc. Therefore, a specific section in a government organization in all Asian and African countries should be assigned to keep a continuous observation of the process and results of all Asia-Africa cooperation, including AAKCP. Such a monitoring section could accumulate accurate and up-to-date information about Asia-Africa cooperation in the respective countries. As a result, the section, possibly belonging to the ministry of foreign affaires or finance, will play a key role in promoting, selecting, formulating, coordinating, and evaluating Asia-Africa cooperation.

It has been shown that AACKP RCDS has the potential to formulate new Asia-Africa cooperation projects. This mechanism contrasts with JICA's training courses for African trainees in Asia, in terms of the function of formulating new projects. This indicates that AAKCP can function as a project formulation system, although it may still have many flaws to be solved, as mentioned above. The flaws of AAKCP such as complicated coordination and uncertain sustainability can be alleviated, as explained earlier. In addition, currently there is no mechanism to formulate Asia-Africa cooperation projects in JICA other than AAKCP. Therefore, AAKCP should be continued to formulate new Asia-Africa cooperation projects while steadily improving its mechanisms.

(2) Opportunity for Capacity Development of African Participating Organization

(i) Potential

In AAKCP RCDS, African organizations undertook the formulation and implementation of the PRPs with the strong sense of ownership. Basically, South-South cooperation, including Asia-Africa cooperation, puts emphasis on ownership by participating developing countries throughout the entire project lifetime. Based on this commitment to strong ownership, in AAKCP RCDS, project formulation, implementation, management, monitoring and evaluation were mainly conducted by the African side. Even though some difficulties in the above process were observed in several PRPs, the experiences functioned as on-the-job training for project management. This contributed to the capacity development of the African participants, and it is a part of the benefit of AAKCP RCDS.

(ii) Recommendations

As described above, the African organizations played a primary role in formulating and implementing the PRPs. This self-oriented project management may not happen in conventional bilateral cooperation, since the influence of donors on decision-making throughout the project cycle is significant in such cooperation. Such rare and useful experiences should be shared with the colleagues of the participants. In particular, project formulation and management skills such as those incorporated in the PCM method

can be widely and versatilely applied in formulating and implementing any kinds of projects. Therefore, a workshop for training in the PCM method should be held in the next sub-program of AAKCP for the participants and their colleagues as well.

Similarly, the Thai partners also gained new experiences of technical cooperation with the Africans. All these experiences—participation in project formulation, planning the SVs with their African participants, activities in Africa, commenting on the final outputs and other reports—have enabled the Thai partners to obtain precious know-how on technical cooperation. Both the Thai partner organizations and TICA can identify lessons learned from the experiences, share them within each organization, and make them available for the use in future technical cooperation. Evaluation on the results of AAKCP RCDS could also be carried out by the Thai side based on the reports from the Thai experts. This accumulation of the information pertaining to Asia-Africa cooperation will improve the efficiency and quality of technical cooperation by Thailand.

3.2.2 Specific Considerations for AAKCP RCDS

(1) Learning of Knowledge Co-creation Concept

(i) Issues

Through AAKCP RCDS, the African organizations recognized the value of a new concept of technical cooperation—knowledge co-creation. The concept of knowledge co-creation is different from conventional technology transfer, which mainly involves copying knowledge and skills from the outside. On the other hand, in knowledge co-creation, new knowledge is created based on an endogenous process, whereby knowledge from the outside is utilized as a “catalyst”. This concept was revisited repeatedly at the Initial, Mid-term, and Final seminars held in Japan, Thailand, and Kenya respectively. In addition, the concept was put into practice in each PRP. As a result, it seems that African participants internalized the concept gradually through the entire process of AAKCP RCDS. For example, the Ugandan side reported the importance of local knowledge in the process of adapting knowledge from the outside, and Zimbabweans also recognized that more attention should be paid to endogenous knowledge and that new knowledge can be created based on a combination of the different kinds of knowledge. This concept very likely facilitated the proactive manner of the Africans in formulating the final outputs. Moreover, this concept should be borne in mind when they are undertaking any type of development activity with any type of partner. Knowledge co-creation is a crucial part of development activities, and an understanding of the concept will encourage the Africans to autonomously engage in any development projects.

(ii) Recommendations

The concept of knowledge co-creation can be made use of whenever facing new knowledge, technologies, methods, etc. from the outside. Generally, knowledge from outside will be adapted with some sort of adjustment. When faced with external knowledge, we should examine and evaluate it carefully before applying it. Improvement of such knowledge within the local context is also necessary

through trial and error. Since the concept of knowledge co-creation is a very beneficial and powerful tool, as explained above, it should also be shared with the colleagues of the African participants.

On the other hand, this concept was not necessarily internalized by all the Thai experts. Insufficient understanding of the concept was reflected in their attitudes while implementing the PRPs with their African participants, which might have affected the knowledge co-creation process and the outputs. One of the reasons for this is that most of the Thai experts did not attend the initial seminar in which knowledge co-creation was highly emphasized. If the Thai participants to AAKCP had attended the same seminars as the Africans did, they would have gained the common knowledge and understanding of this key concept of AAKCP, namely knowledge co-creation.

Attachment

The Final Reports of the PRPs

Kenya

Asia-African Knowledge Co-Creation Programme, Rural Community Development Sub-Program, AAKCP RCDS

Final Report

Ministry of Agriculture, Kenya
and
Department of Agricultural Extension, Ministry of Agriculture and Cooperatives, Thailand

Asia-Africa Knowledge Co-Creation Program
-Rural Community Development Sub-Program-
JFY 2006

JAPAN

THE GOVERNMENT OF JAPAN

JAPAN INTERNATIONAL COOPERATION AGENCY

JICA

Table of Contents

1.0 Executive Summary

The Asia-Africa Knowledge Co-Creation Program, Rural Community Development Sub-program (AAKCP-RCD) is a JICA funded initiative whose aim is to provide an opportunity in which Asia and Africa knowledge and experiences can be shared, and thereby make it easier for each participating organization to formulate its own development methods that are suited to its own respective circumstances. Under this Program, Kenya identified the issue for knowledge sharing in the rural community development as 'inadequate value addition capacity for agricultural produce among the rural communities', and a Policy Research Project (PRP) on the same developed and a memorandum of understanding among the three governments of Kenya, Japan and the Royal Thai Government on its implementation agreed upon on December 2005. Kenya has been partnered with Thailand to share knowledge and experiences in this aspect.

The AAKCP consisted of several seminars both in Japan and Thailand, as well as several activities outlined in the Policy Research Paper (PRP) including a study visit of Kenyan officials and farmers to Thailand; a visit of Thai experts to Kenya, conducting of a Rapid Appraisal on rural agro-processing and stakeholder consultations, and a rapid market survey on several products arising from demonstrations held by the Thai experts. These activities resulted to acquisition of knowledge and experiences by the Kenyan side, especially on the Thai's enabling regulatory and policy environment to the growth of rural agro-processing, strong public –private partnerships in both research and product development and extension, superior product recipes in aspects of product varieties, quality and storability, appropriate rural technology options and presence of skilled human capacity to spur rural agro-processing. It's the intention of the Ministry of Agriculture, following the establishment of Agro-processing sub-division, to support rural agro-based cottage industries and break from the dominance of primary production, characteristic feature of Kenya's agriculture. Further technical co-operation in this sub-sector with the Asian countries is envisaged.

2. General Information of the PRP

2.1 Background of the PRP

A characteristic feature of Kenya's agriculture is the dominance of primary production. There is very little on-farm and off-farm processing of agricultural produce, which translates to low income for farmers and less jobs for the rural community. Inadequate value addition capacities for agricultural produce among the rural communities can be attributed to poor infrastructure, limited access to appropriate agro-processing technologies in terms of skills and equipment among the rural community, lack of standard agro-processing reference and/ operational manuals with clearly spelt policies and guidelines on standards for quality assurance, weak and inadequately skilled public and private extension, and low levels of entrepreneurial culture among the smallholder farming community in the rural areas. This has inhibited investment and constrained adoption of appropriate value-addition technologies.

The Kenyan Policy Research Project was designed to address the problem of inadequate value addition capacity for agricultural produce among the rural communities with particular emphasis to the development of an agro-processing reference and/ operational manual. To this end, several activities, as indicated above, were carried. This is in line with the current Ministry's effort to revitalize agriculture as outlined in the Strategy for Revitalizing Agriculture, SRA (2004). The SRA identifies Marketing and value addition as one of its fast track intervention geared toward achieving rapid results to rural community development.

2.2 Narrative Summary of the PRP

Target Area/Target Group

Though the Policy Research paper (PRP) implementation target was the Kiyo women SHG (Central Province) and the Keiyo Mango processing SHG (Rift Valley), the final output is intended to be used by the both the private and public extension agents for promotion of rural agro-processing in the selected commodities.

Overall Goal: Income of the rural people in Kenya is increased.

Final Output(s)

- The operational guideline of rural community development focusing on value addition of agricultural produce for extension workers and farmers is formulated
- Report on Rapid Rural Appraisal on rural agro-processing
- Report on Market Survey
- Report on workshop proceedings for stakeholders in rural agro-processing

2.3 Amendments of the Plan

2.3.1 Changes Plan of Operation

The was delay in the implementation of the PRP and indicated in the annex II from the earlier intended month of October 2005 to December 2005.change in the PO

2.4 Inputs Conducted

The following Inputs were availed

- **Kenya's Contribution**
  - Counterparts –Staff from Agro-processing sub-division, MoA
  - Vehicle
  - Computer

- **Thailand Contribution**
  - Resource persons –two experts
  - Skill & knowledge in agro-processing

- **JICA**
  - Budget support (≈USD 50,000)
  - Experts Advice & backstopping
  - Logistical support by the JICA-Kenya & Thailand offices

3.0 Activities Implemented

3.1 Knowledge exchanges with Thailand.

- The study mission is dispatched to Thailand-11th to 23rd Dec 2005.
- The Thai team drafts the research paper.
- Resource persons from the Asian organization visit Kenya-15th to 25th March 2006

3.2 Rapid Rural Appraisal on Agro-processing

The survey was undertaken in 18 of Kenya 71 districts. The objectives of the RRA were to

- Identify the current practices in agro-processing
- Identify the constraints to agro-processing
- Identify opportunities in agro processing.
- Evaluate potentials of up scaling agro-processing and determine the entry point.

The study found out that the level of agro-processing is very low with only 21% of enterprises operating at a high level and 50% of enterprises operating at low level or having stopped operating. There is limited usage and knowledge on appropriate technologies/equipments for processing. Also the few appropriate technologies available were being utilized at low capacity ranging from 2.9% to 27%. There was also limited knowledge on maintenance of equipment being used.

The study found that the main source of raw materials was from the members of the enterprises with purchases also being done in local markets. The quality of raw material being use was good, though many didn't have means or knowledge of evaluating quality of raw materials

The were twelve categories of products; fruit products (dried and ripened products), juices, fruit jams, flours, oils, nuts, livestock products (e.g. yoghurt), personal health products (soaps and lotions), cotton products, beverages and medicinal products, vegetables (dried leaves) and cassava products (starch, flours). The flours and livestock products were the most common with 20.3% and 16.9% occurrence. The most popular flours were the composite or nutritious flours.

The packaging used was rudimentary and unattractive. Mainly polythene papers were being used and these were poorly sealed and poorly or not labeled. Products were being sold through: own distribution system (bicycles, or pick ups) about 26% of the products, own shops about 14%, at place of processing (12%). Others were through supermarkets (4%), hotels, local markets, institutions, etc

Losses were also reported before, during or after processing. These ranged from 10% to 100% in some cases. Main types of losses were moisture losses, over ripening and deterioration due to over stay before or after processing. There was limited utilization of waste; only waste from cereals and oil crops was being well utilized.

The buildings being utilized were not appropriate for agro-processing with only about 18% of building meeting the basic requirements. 36.4% of enterprises didn't have any structure to undertake processing or were doing it inside.

Very few enterprises reported having received credit. Some few groups had received financial and/or hardware assistance from NGOs, research institutions or from the governments

There is an opportunity to upscale the current agro-processing enterprises, the natural nature of the processed products, the opportunity to sell to supermarkets after proper certification of products are some of the entry guides to agro-processing.

3.4 Pre-testing the draft research paper

- Provision of equipments- Juice extractor, Impulse sealer, cup sealer, plastic cup & foils
- Fabrication of solar drier and hand chippers. One dryer fabricated for utilization by Kiyo group. The dryer was made using knowledge acquired from Thailand (e.g. use of fiber glass) combined with local improved aspects of the solar dryer (e.g. use of chimney and non corrosive mesh). The hand chipper acquired from Thailand fabricated -using local materials- for use on crisps preparation.
- Market survey- May/June

3.5 Market Survey- May 2006

The market survey targeted the eight products demonstrated to the two pilot groups by the Thailand experts; dried banana, fried peanuts, roasted peanuts, mango leather, mango juice and pickled mangos for Murkutwa Fruit processors group and banana crisps and mango juice for Kiyo group. The market survey was undertaken with the following objectives;

- Identify the potential market outlets of processed products.
- Evaluate factors that influence marketability of these products.
- Identify areas to market some of these products.

The study found that the decision to purchase is made by male and women as well as the youth. The respondents indicated that they were willing to try the products as long as some aspects like minimum enhancement of quality were achieved.

The product attributes identified as for elicitation of buyer perceptions were taste, colour, packaging, quality, price, variety, brand name, health benefits and satisfying nature. 62% of respondents thought these attributes were important. The three most important attributes were said to be taste, labeling and quality

Buyers had varied considerations as to quality assurance, with supermarkets looking for Kenya Bureau of standards verification and hotels looking for local authority certificate of health. The shelf life of product was also important with hotels going for shorter shelf life products more as compared to the supermarkets.

There is however a big market for the various products and all that is required is to enhance the buyers' requirements and to approach these potential buyers.

3.6 Stakeholder workshop –14th June 2006

The one day workshop had 36 participants drawn from various organizations dealing with agro-processing issues; quality and standards, promoters of agro-processing technologies, equipment dealers, product development and research institutions, enterprises undertaking processing, financing institutions, marketing organizations, packaging and labeling. Also other players along the value chain participated. The main objectives of the workshop were:

- Share information on various aspects of agro-processing
- Identify ways of overcoming the various constraints in agro-processing.
- Initiate linkages and future collaboration on agro-processing.

The participants shared and discussed how to resolve the various issues on agro-processing; quality and standards, marketing, packaging, equipment/technologies, product development, financing and also on agro-processing policies.

It was also agreed that there is need for more such meetings and for continuous communication among the various stakeholder.

4 Results of the PRP

4.1 Summary of Output

The operational guideline of rural community development focusing on value addition of agricultural produce for extension workers and farmers is formulated.

A manual on processing that details the various recipes for six types of crops, mangoes, pineapple, pawpaw, bananas, tomatoes and Soya beans, . The manual introduces the principles of fruit and vegetable preservation and the details the various recipes under the six crops. The recipes were developed by Thailand experts but have been modified to fit the local preparation procedures and availability of ingredients.

4.2 Report on Rapid Rural Appraisal on rural agro-processing

The report on RRA gives a brief on background of agriculture and agro-processing in Kenya, the objectives of the RRA, the scope of the study and the methodology. It also highlights the main findings,

- The types of products, raw materials utilized in agro-processing and the level of processing
- Equipment/technology used in agro-processing; type, cost, capacity, usage and maintenance aspects
- Raw material availability; source, availability, quality and estimated price.
- Losses incurred before, during and after processing.
- Packaging; type of packaging, sizes and estimated cost of product plus the package
- Marketing of agro-processed products; amount of processed product, main outlets, locality of outlet, price per package, buyer type and proportion of the sales through the outlets. Also the availability of the market, promotions, competitors and problems in marketing.
- Funding.
- Building used for agro-processing- various category of buildings and proportion of each.
- Conversion/utilization of waste from processing-type of waste and how its utilized.
- Conclusions and way forward- summary of findings, opportunities to agro-processing and way forward

4.3 Report on Market Survey

The report discusses the objectives of the market survey, and the methodology used. It gives the main findings of the survey, the general characteristics of respondents interviewed, the type of market outlets, the buying characteristics and products attributes that are preferred by the respondents.

It gives a summary of the market survey; the potential of marketing the products, and the different requirements for the markets.

4.4 Report on workshop proceedings for stakeholders in rural agro-processing

The report details the name of participants the papers presented, and the way forward in agro-processing.

4.5 Knowledge Co-creation

4.5.1 Knowledge Shared with the Asian Partner Organization

(i) Processing techniques and equipment

A number of equipment and techniques were learned. Observed were the various techniques and equipment for processing bananas. Learned also were the varied methods of packaging of processed products. The processing of diverse products from specific crops was also observed

(ii) Factors contributing to Growth of Agro-Processing Industry

The Royal Government of Thailand has made remarkable growth in Agro-processing industry. Key factors noted to have brought about this growth are in the following areas:

(a) An enabling Regulatory and Policy Framework

- The existence of a National Policy on promotion of agro-processing and Food Industry in Thailand.
- The existence of various proactive and collaborating public and private Quality Assurance agencies, which are well facilitated and coordinated, to ensure the food industrial products meets the quality and standards at local, regional and international markets.
- One Tambon One Product (OTOP) philosophy, tends to galvanize the respective rural communities into comparatively advantageous cultural and/ or income generating activities.

(b) Existence of Research institutions Enhancing Applied Research

It was evident that both the public and private research institutions were jointly engaged in:

- Recognizing the indigenous knowledge from the various rural communities on agro-processing, and their further improvements and / or development of appropriate technologies to meet the current market demand.
- Research and Product development
- Identification, selection and development of appropriate equipment for agro-processing
- Development of appropriate product packaging to meet the dynamic market demand
- Tailor-made trainings responsive to the market needs.

(c) Human Capacity Development

Deliberate attempt has been made to ensure the curriculum at the various agro-processing and food

industry –related training institutions are responsive to the industry's market demands. This has led to the availability of skilled and competent personnel in the various specialized fields in agro-processing such as packaging, health and food safety, storage, etc

(d) Effective Agricultural Extension System

The Department of Agricultural Extension (DOAE) manages to effectively serve the farmers' needs by:

- Having Extension staff who are mobile- use of vehicles for extension service
- Provision of relevant and feasible solutions to farmers' needs
- Extending credit to farmer groups' , either in cash or in kind
- Introducing other relevant stakeholders to the farmer groups', who are able to address the farmers' felt needs.
- Encouraging building of linkages between and among groups ie promote networking
- Establishment of Agricultural Technology Transfer centers (ATTC).

(e) Strong Research-Extension-Farmer Linkage

The research, extension and the farmers were noted to be closely working to complement each other activities.

(f) Provision of Credit to farmers and Farmer groups.

Most farmers and farmer groups have access to affordable credit from either the public or private sector in form of either:

- Local grants
- Revolving fund
- Loans from commercial banks at interest rates ranging from 9-13 %.

(g) Infrastructure Development

There was noted a strong government support in areas of infrastructural development, especially on:

- **Provision of clean and safe water:** This is the responsibility of the government to provide water for irrigation and agro-processing.
- **Improvement of rural access roads:**
- **Establishment and development of market outlets for the OTOP products:** Both the public and the private sectors are aggressively involved in the promotion of products using various strategies such as organizing trade fairs, products' competitions, establishing central stores, exhibitions, etc

(h) Existence of a strong Political will, especially from His Majesty the King:

There are several government-initiated projects geared towards improving the incomes and living standards of the people.

4.5.2 Creation of New Knowledge in Fruits and Vegetable Processing

The principles of processing and preservation used for fruits and vegetables in Thailand are almost similar to those used in Kenya. This includes drying to remove water or moisture from food, use of sugar, acid and salt to change the pH of the food so that micro-organisms do not find a favourable environment for growth. The ingredients used in the process of coming up with various products are also relatively similar with a few modifications or variations to the recipes. This results in changes in taste, flavour, texture and possibly the palatability and acceptability of these products by the local people. Globalization and urbanization are however influencing the people's diet with people seeking a wider variety of foods and also the desire of contributing to the international cuisine.

4.5.2.1 Products

Current Kenyan recipes favour high sugar products which are suited to Kenyan tastes such as tomato sauce, jams and juices. However the Ministry of Agriculture feels that new products with tangy tastes, less sugar should be promoted to cater for new markets. For example pickled vegetables and fruits are fermented products that are customary in South and Central Asia, but are produced in a very small scale in Kenya for the Asian community and a few affluent consumers.

Example of knowledge co-creation through AAKCP.

1. Popular banana products in Kenya are Banana crisps which are prevalently salty produced from green cooking bananas, thinly sliced then deep fried in vegetable oil/deep frying fat. These are not very popular and do not compete well with the Irish potato crisps. In Kenya the fruit leather is a known concept but not exploited. The leathers are also made from multiple fruits

   The Thailand recipes include soaking the banana slices in syrup or coating fried slices with sugar or dipping the banana slices into sugar, salt and margarine solution then frying to change taste, add flavour or diversify the banana products.

   The Thailand recipes were adopted to improve on the taste and diversify on crisp products. The recipes can be said to be improvement of the existing Kenyan recipes. The Thailand crisps like the one utilizing margarine is softer and tastier than what is commonly produced in Kenya

The rolled banana leather from Thailand introduces the making of fruit leather on specific product (banana) and introduces an improvement in terms of presentation or packaging of fruit leather.

2. The prevalent papaya product in Kenya is papaya jam, however the products are not common in the shelves/market. The Thailand recipe was adopted mainly to improve on presentation/packaging of the jam.

The only sauce in Kenya is the tomato sauce. The papaya sauce was adopted to undertake a common practice but on a different product. Also it introduces recipes with a tangy taste. The sweet and sour dried papaya and glazed papaya are completely new recipes from Thailand but sweet papaya builds on Kenyan tastes but gives a variation in terms of products (papaya).

Common glazed products in Kenya are tomatoes and glazed papaya then would be said to build the Kenyan recipe on a different product. Dried papaya is common recipe in Kenya but not the sour dried type- this introduces diversity in the dried papaya product. The papaya leather recipe can be said to follow the banana leather.

3. Pineapple products are widespread at the commercial level. The adoption of the various recipes is to undertake a practice commonly done at large scale level to a small-scale level. Common pastes in Kenya is the tomato paste, the sweet pineapple paste builds on the tomato paste but is a different product. The sweetness fits the Kenyan common tastes.
4. Mango nectar has become a common product in the Kenyan market while mango leather and jam are also trying to penetrate the market. The Thailand mango nectar has a longer shelf life, while the mango jam introduces a common practice but on a different product. The mango sauce and spicy mango leather can be said to be like other recipes described above. The mango chutneys are in supermarkets but the recipe or production at small-scale level is not there. All these recipes will help diversify on mango products and help make use of excess mango most of which goes to waste.

5. Soybean cracker, soybean pudding and soybean dressing salad are relatively new recipes/products. The common crackers in Kenya are made from composite flours (e.g. cassava, sweet potato flour). Fruit puddings are common in Kenya, hence soya pudding can be said to build on these. Common dressing in Kenya are of vegetables and the soya bean dressing can be said to be a common recipe but on a different product. The processing of soya bean in Kenya by the Ministry of Agriculture has been introduced (roasting, boiling and grinding to yield soya beverage products) with little adoption. However various manufacturers are progressing well. Hence the Thailand recipes will bring new tastes and better ways of doing.

In general the Thailand recipe introduces an alternative method of preserving products. What is common in Kenya (at small scale level) is use of lemon juice. The use of alternative food additives e.g. citric acid and pectin increases the level of preservatives per volume of additives and improves on the preservation.

Two products were not initially in the Thailand manual, the mango chutney and the rolled bananas. Some of the original equipment and packaging proposed in the Thailand manual were interchanged with common technologies. For example leaves for packaging were interchanged with polythene papers while juice extractors were added as equipment for juice extraction. No recipe was removed from the original manual, as all looked feasible to prepare, promote and adopt. However this could change with full testing of the recipes.

4.5.2.2 Equipment

Some of the equipment proposed in the manual is common in Kenya. But the Thailand experience has brought the knowledge that you 'don't have to think big' in terms of equipment. Small would be enough for most processing at small to medium level. It also emerged that in this line of equipment agro-processing has not been given the seriousness it deserve in Kenya.

However some equipment and knowledge on making some equipment was adopted for use in Kenya. The potato chipper from Thailand was found to be appropriate and better than what is been used in Kenya; the chipper has been fabricated locally. Also the use of fiberglass for solar dryer tops was found to be better (doesn't break, is efficient and easy to install), the fiberglass has been adopted and used for existing Kenyan dryer designs. There were other equipments that were found to be very relevant to Kenya but couldn't be tried out within the program's time frame because of cost- e.g. packaging equipment. Use of other equipment like digital scales, thermometer and refractometer to better the processing is a concept that was acquired- the equipment are common in Kenya but are rarely used at small scale level.

4.5.2.3 Packaging

In Kenya packaging and labeling has not been given the seriousness it deserves, though many packaging materials are there they are not used or are poorly used. For example packaging materials in Thailand were well designed and labeled unlike in Kenya, and this is a Knowledge acquired. Some packaging was however new but very appropriate to Kenya. Banana fruit rolls are relatively new from Thailand especially the rolling part of the methodology and the packaging of the same, which give a completely new and more appealing method of presentation.

Packaging as a promotion measure has not been taken seriously by the small scale entrepreneurs in Kenya and the packaging methods used by Thailand were an eye opener and a challenge to the Kenyan counterparts

Conclusion

There is no recipe among those given that can be regarded as not feasible and together with those that are new, preparation and processing trials will be carried out to assess palatability, the shelf life, taste and flavor under local Kenyan conditions.

4.6 Difficulties in Implementation of the PRP

4.6.1 Knowledge Co-creation

- Financial constraints in acquisition of some appropriate technologies e.g. on packaging.
- Time and resources to test all the recipes
- Time constraint to fully share the manual with other stake holders.

4.6.2 Project Management and Others

- The restructuring of the ministry caused delay in the implementation of the PRP.
- Timeless of activities not observed because of other overlapping duties.

5. Future Plan after the PRP.

- Testing of the manual and sharing with stake holders.
- Capacity build staff and farmers and other stake holders
- Source, fabricate locally, test and promote technologies/equipment for processing and packaging.
- Support identified (in RRA) entrepreneurs to upscale and be used as pilot and training enterprise.
- Develop a policy on agro-processing.
-

6. Self-Assessment

6.1 Relevance

Food preparation and processing are important to rural community to ensure their food security, to increase variety in people's diets, and as a means of generating diversified income and employment. When successful, processing at village level can create an enhanced quality of life for villagers because of greater prosperity and improved health and nutrition. This will greatly contribute to alleviation of rural poverty, which currently stands at 56 percent of the total rural population. 87 percent of the poor households in the country are in the rural areas (Draft KRDS, 2002).

This is consistent, not only with the Kenya's national development policies as outlined in SRA (2004-2014), ERS (2003-2007), and PRSP (2001), but also with the Japan's development assistance policy to alleviate poverty in the country.

6.2 Impacts

6.2.1 Policies:

The initiatives made through Kenya PRP will assist the country's effort to have higher value added products entering the local and international markets and also contribute more in future policy direction for the informal (Jua Kali) sector in agricultural development.

6.2.2 Institutions:

The output of the PRP has laid a foundation for other interested stakeholders in value-addition as it has outlined the safety and quality standards of the value-added products, and equipments used, as well as contributing to the close linkages among the stakeholders in the agro-processing sub-sector through the already initiated stakeholder forums.

6.2.3 Target Groups:

There is expected to be more involvement of farmers and CBOs in value addition. This will not only improves rural incomes, but also create an opportunity for reducing farm losses through the conversion of perishable commodities into more marketable forms of durable products.

6.2.4 Economy:

As earlier mentioned, about 80 percent of the country's population lives in the rural areas and 75 percent are engaged in agriculture. The important role that will be played by the Agro-processing manual at addressing the question of poverty and food insecurity will entail transforming subsistence agriculture into commercial production. This, among other inter-related sectorial intervention, is envisioned to increase agricultural productivity and economic growth.

6.2.5 Others

6.2.5.1 Community Empowerment to participate in their own development

There was an interactive process in the course of formulating, developing and piloting the PRP final output between the experts and the community to exposed and empowered the community on initiating and managing their own development activities.

6.3 Sustainability

6.3.1 Conditions to Ensure Sustainability

6.3.1.1 Institutional sustainability:

The Agro-processing sub-division of the Ministry of Agriculture in Kenya has embraced the Agro-processing manual and the sub-division intends to take the initiative further and incorporate other agricultural products following the AAKCP initiative.

6.3.1.2 Financial and Technological Adoption: In developing the manuals, the technologies and recipes selected were those that were appropriate, affordable and which can easily be adopted locally and easily fabricated to suit the socio-economic situation of the local community. Private sector has and will continue to be involved in fabrication and/ adaptation of appropriate equipment

7 Lessons Learned

- ✓ There is potential to upscale agro-processing in Kenya
- ✓ Alternative and appropriate processing techniques and equipments
- ✓ Conducive environment to growth of agro-processing industry eg: govt support, enabling policy and regulatory framework,
    - o Strong research linkages,
    - o Developed human capacity,
    - o Effective extension system,
    - o Developed infrastructure
    - o Financing and
- ✓ Strong Public-private Partnerships in areas of research-extension-farmers linkages,
- ✓ Political goodwill

8 References

- ✓ Monthly AAKCP monitoring and progress reports- various
- ✓ Comment from the final AAKCP-RCDS seminar.
- ✓ Manual on processing of Fruits, vegetables and Soya bean.

Annex 1: Project Design Matrix

(1) Outcomes after the PRP

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
(Overall goal) Income of the rural people in Kenya is increased.	Household incomes	Survey report	There is no drastic socio-economic changes that affect the other sources of income in country A's rural areas.
(Expected Outcomes of the Final Outputs) Services provided by the extension workers on value addition of agricultural produces in the pilot project areas in Kenya is improved.	Satisfaction levels of the beneficiaries towards extension services	Questionnaire	There are no drastic changes in the agricultural policies.

(2) Achievements within the Period of the PRP

Narrative Summary	Important Assumption
(Final Outputs) The operational guideline of rural community development focusing on value addition of agricultural produce for extension workers and farmers is formulated.	The guideline is adopted nationally. The extension system remains the same.
(Activities to produce Final Outputs) 3 The Guideline is formulated. 3.1 The draft of the guideline is formulated. 3.2 The draft is locally applied as a trial. The pre-testing of the operational manual will involve • Identifying an already existing self help group with a common interest in value addition • Identify appropriate skills and equipment • Avail the appropriate skill and technology • Training both the extension staff and the community in value addition and in fabrication of the appropriate agro-processing equipments at the local jua kali sector • Monitor the adoption of the acquired technology 3.3 The draft guideline is circulated to stakeholders for comment 3.4 Incorporation of stakeholder comments 3.5 The guideline is finalized taking into account the comments of stakeholder and the result of the trial.	
(Intermediate Outputs) The research papers demonstrating the essential concepts to make rural community development successful are produced as a result of analyzing information collected through the following activities.	**Inputs**

(Activities to produce Intermediate Outputs) 1. The project implementation unit is established. 1.1 Personnel and budget are allocated as planned. 1.2 The plan of operations is formulated. 2 Knowledge exchanges with the Asian partner organization in country B are conducted. 2.1 The study mission is dispatched to the Asian organization. 2.2 The research paper is drafted. 2.3 Resource persons from the Asian organization visit country A. 2.4 The research paper is finalized.	**Kenya's Contribution** • Counterparts – 3 staff from MoA • Local budget (USD) • Office accommodation, telephones, **Country B (Asia)** • Resource persons (numbers, organizations) • Local budget (USD) **JICA** • Experts (numbers, organizations) • Budget support (USD) • Coordinator

Senegal

MINISTRY OF AGRICULTURE,

RURAL HYDRAULICS AND FOOD SECURITY

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Water Resources Management and Planning Department

Under the cooperation with

Huay Hong Khrai Royal Development Study Center, Thailand

Mobilization of Water Resources for Agriculture Sangalkam Rural Community (MWRA)

FINAL REPORT

Asia-Africa Knowledge Co-Creation Program
-Rural Community Development Sub-Program-
JFY 2006

THE GOVERNMENT OF JAPAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table of Contents

1 Introduction

The importance of the cooperation South - South is confirmed now well since the collaboration horizontal South - South and the North traditional vertical collaboration - South.
To the third Tokyo International Conference on the African Development (TICAD II) in September 2003, this cooperation especially between Africa and Asia reaffirmed itself.

Having noted that cooperation did not answer African needs, the Japan International Cooperation Agency (JICA) pushed Asia - Africa Partnership Workshop (AAPW) of the 24 to November 26, 2004 in Nairobi, Kenya. The goal was to discuss better on the collaboration between Africa and Asia.

In spite of such potentialities to share different experiences between Africa and Asia, there were not any particular programs between these two regions.
It is why, JICA introduced in beginning of year 2005 the seminary titled" Asia-Africa Knowledge Co - Creation Program (AAKCP) ". The launching of this program that saw the involvement of about ten African countries, took place March 22, 2005 in Tokyo.

The main objective is to establish a program permitting to install mechanisms encouraging the sharing of the knowledge and different experiences acquired between Asia and Africa in order to lead actions adapted to the context of the some and of the other. These mechanisms will permit to facilitate for every concerned country, the formulation of development strategies that is in conformity with its realities.

In the setting of the AAKCP program, Senegal made validate at the time of the seminary organized during the period of the 22 to July 28, 2005 in collaboration its Asians partners, a document of project title" **mobilization of water resources for agriculture in Sangalkam Rural Community** " of that takes into account the budget put in place.

2 General information

2.1 Socio-economic Context of the Country

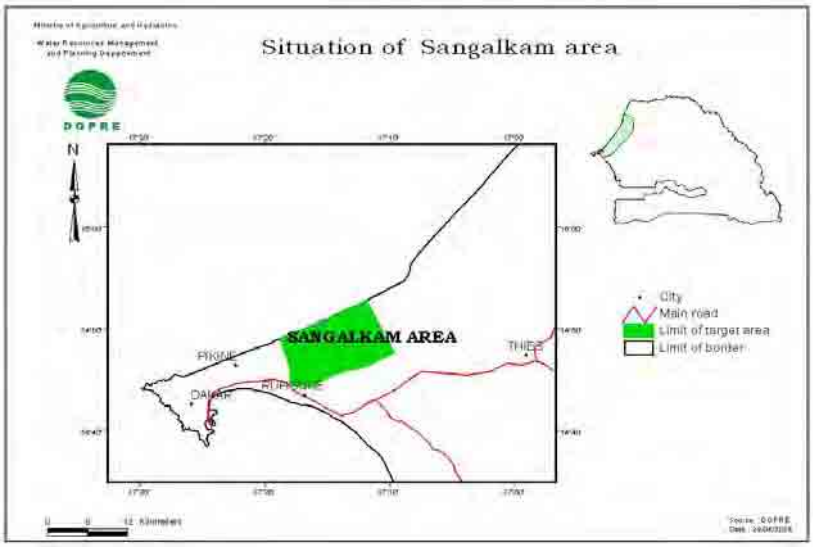
Sangalkam rural community is situated in the region of Dakar to the west of Senegal. It covers a surface of 195 square kilometers with a population estimated to 50,000 inhabitants distributed on 28 villages.
It is included into a vital zone in terms of developing horticulture. The economic function of this zone has another dimension, which is to contribute of the improvement of the social and nutritional status of the vulnerable population. Activities of market gardening make live many people and families.
Unit market exploitations can be classified in two groups:

- ✓ small producers: who have parcels lower to 2 hectares, situated in sandy zones where the watertable is lower than 10 meters. The exploitation of water is essentially manual into traditional wells;
- ✓ big producers: who have modern exploitations with of surface from extent a lot more (2 to 50 hectares), exploiting hydraulic wells, the boring or the network of the Water Society (S.D.E).

Sangalkam area presents enormous potentials concerning agriculture:

- ✓ the climate is favorable to a lot of type of cultures;
- ✓ the existence of setting of dialogue (UNMP, URAS, FRAS…);
- ✓ the progressive introduction of agricultural techniques modern (system of irrigation drips to drop, choice varietals, manufacture and use of biopesticides, use of stamps…) ;
- ✓ the existence of conditioning centers of fruits and vegetables ;
- ✓ the proximity with the metropolis (markets, airport);
- ✓ the existence of mutual of saving and credit.

All along the coast, a protected zone of trees is created to fight against the wind erosion.
The set of features (relief, permeability) does not permit the formation of a functional hydrographic network.
A weak dripping in raining season nourishes sandy depressions sometimes.
The area is an important groundwater reservoir that provided water for the population and. the agriculture
One observes the emergence of local small industry of transformation of horticultural products (dried tomato or in paste) which develop the production more and more.



2.2 The Sector Concerned to the PRP

2.2.1 Current Situations

Senegal has known several types of problems among which insufficient water supply and water for agriculture due to bad water resource management.
Solving those problems required an Integrated Water Resource Management (IWRM) approach.
This approach started at the Rio conference in 1992.
The strategy of IWRM consists of evaluating the water demand typologies of communities, the definition of priorities, the elaboration of useful water resources management plan.
To do so Senegal has created National Water Partnership Committee on November 12, 2002.
Its objectives are:

- ✓ To improve water resources management
- ✓ To guarantee water supply and Sanitation
- ✓ To protect natural resources

National Water Partnership includes all water actors. The secretary is assumed by Water Resources Management and Planning Department.
Recipients of this project are basic local communities.

2.2.2 National Policies and Strategies

The outline of Senegal of the water policy was announced in various reports presented by the Ministry in charge of Hydraulics since 1977.
These principles were realized by a series of programs and projects aiming in particular:

- ✓ the improvement of people living conditions while allowing them to access to satisfactory of drinking water services and adequate sanitation;
- ✓ the fulfillment of requirements out of water for the livestock and the agricultural production;
- ✓ a better management and an adequate protection of water resources;
- ✓ the setting up of an efficient policy aiming the sustainability of the service.

These actions are within the definite macroeconomic framework through the ninth Plan of Strategic Orientations for the Economic and Social Development (1996-2001) of Senegal. To go in this direction, Senegalese authorities made the urgent option to fight for the complete control of water. This dynamic constitutes the base and the framework of the water policy in Senegal.

2.2.3 Institutions

In the dialogue framework between organizations of producers and the reinforcement of their position in the

political dialogue for the management of the market gardening, fruit bearing and forest, the Association of the Market-gardening of the zone finished emerging and starts its phase of consolidation. It takes an increasingly significant part to tables of dialogue relating to the promotion of the market. The association has 16 unions' members for 10,000 producers of where more than 50% are women.

2.2.3.1 Laws and legal dispositions in water domain

- Law n°81-13 of March 4, 1981 related of Water Code;
- Decree n°98-555 of 25 June 1998 related to application of provisions of the Water Code relating to authorizations of construction and using equipment of collecting and discharging water;
- Decree n°98-556 of 25 June 1998 related to application of provisions of the Water Code relating to the Water Policy;

2.2.3.2 Competences transferred to communes

The commune is in charge of the protection of groundwater resources and surface water (article 29, Law n° 96-07 of March 22, 1996).

2.2.3.3 Competences transferred to rural communities

Rural communities are qualified for the creation and the maintenance of artificial ponds and reserves collinear for agriculture (article 30, Law n° 97-07 of March 22, 1996).

2.2.3.4 Methods used to exercise of water management by local communities

Conditions of discharging to effluents are fixed by an authorization delivered by the Mayor after opinion of the town council (article 35, Decree n° 96-1134 of December 27, 1996).

The protection of water resources by the rural community Quarterly controls are regularly carried out by qualified services in zones of bathe to evaluate the degree of healthiness.

Results of these controls are made available of the President of the rural Council, which, in the event of noted pollution, can ask the representative of the State to take measures for purposes to prohibit the bathe in the contaminated zones (article 42, Decree n° 96-1134 of December 27, 1996).

2.2.4 Problems

Today, the potential of watertable suffers an over exploitation due to techniques from non-suitable irrigation and that appears by a progressive folding in depth. Indeed, in Sangalkam rural community the exploitation of the watertable, more and more mechanized thanks to the use of motor-pumps in the individual boring of big exploitations, reduced the volume of the resource whose refeed is tributary of raining conditions.

Moreover, the majority of production of Sangalkam area is non-durable products and sensitive to germs and

infestation of various natures. The insufficiency even the absence of means of conservation, storage and conditioning to the range of the population constitutes in many cases, of constraints to the development of the production and especially of incomes of producers.
In economic part, one notes following problems in the zone:

- ✓ financial resources are limited for small producers (difficulty access to the credit);
- ✓ most inputs (seeds, manure, pesticides, material, etc.) are imported and their elevated costs limit their use by the small producers;
- ✓ most farmers are not owners of lands that they exploit, it limits or prevent all possibility of important investment;
- ✓ the market tariff of water used is very expensive;
- ✓ there are frequent understockings of water to the level of markets perimeters.

In environment part on can note:

- an important reduction of groundwater level;
- a intrusion of salt water in wells of farmers;
- an agricultural pollution by manures and pesticides ;

This tendency could in the long-term compromise the durability of the economic activity and the environment of this ecosystem.

2.2.5 Causes of the Problems

An analysis of the irrigation in the market zones shows a predominance of traditional methods used by farmers.
It appeared than practically everywhere in this zone, as well in exploitations practicing a traditional irrigation that those practicing the aspersion, techniques of irrigation are adapted. Market gardeners seem to obey a strange rule: “More water, more harvest”.
The report is that doses brought in parcels pass from 4 to 6 times needs recommended by researches. There is an enormous waste of water and energy.
The existing center has not necessary human resources to achieve its missions. Technical services are not implicated into training activities of the center. There are not effectively exchange know-how between farmers through the center.

2.3 Narrative Summary

2.3.1 Expected Outcomes of the Final Outputs

- Farmers s’ knowledge is improved in terms of know – how;
- The technology of farmers is improved;
- Farmers’ associations are strengthened;

- The development of agriculture in the area is oriented on food self-sufficiency.

2.3.2 Overall Goal

The strategic plan will permit to implement the center will have the capacity to relieve information between local actors to share their know-how in Sangalkam rural community notably by integrating aspects bound to water resources management and planning for agriculture.

2.3.3 Target Groups and Area

All population of Sangalkam rural community and villages (28) around will be concerned by the project.
Specific extension workers constituted from younger and women will be chosen from the community.

2.3.4 Outputs

2.3.4.1 Intermediate Outputs

- A exchange network will be established between Sangalkam rural community and Baan Pasakgnam community;
- A cartography of the area will be done showing soils occupation and favourable extension lands;
- Identified sites will be planned;
- The center will be reinforced in terms of capacity building and equipments;
- A database about farmers' knowledge will be set up.

2.3.4.2 Final Output

The final output of the project is to formulate a preliminary development plan for rational mobilization of water resources for agriculture in Sangalkam rural community.

2.3.5 Activities

The AAKCP program has been set in motion through seminaries, workshops and fields visits to facilitate the sharing of experiences.

This setting of exchanges showed in a general manner important efforts that Asian countries granted since the Second World War.
Indeed, Asia accumulated an experience proven to be concerning communal development, so much on the exploitation of the natural resources that on the transformation of agricultural products. In the domain of the setting in work of programs of development, research and the capacity of organization, Asia has a lot of things to share.

2.3.6 Amendments of Plan

The Strategic Development Plan will b integrated as a part of the Local Development Plan. It will be budgeted into the Local Budget and the Rural Council has to do a financial request to other partners.

2.4 Inputs conducted

2.4.1 Senegalese side

Water resource Management and Planning Department (D.G.P.R.E) have assured:

- the secretary of the project;
- all transportation facility for technical visits;

2.4.2 Asian side

Exchange experiences has coordinated by Huai Hong Khrai Royal Development Study Center
this concern:

- the mastery of water
- the implication communities into decision-makings
- the diversification of generating incomes activities

2.4.3 JICA side

The budget supported by JICA has been about fifty thousands US Dollars (five million yen.). That includes all Thai and Senegalese activities.

2.5 Activities implemented

The Thai filed visit in Senegal during the period from 21 to 28 of January, 2006
courtesy visits to:

- ✓ the Minister's Cabinet and his staff;
- ✓ the JICA Representative Resident;
- ✓ the agriculture Department ;
- ✓ the horticulture Department ;
- ✓ the Rural Engineering Department.

The objective was to implicate central authorities to thePRP

Work session with Local actors

- ✓ the Rural Council of the Farming Community;
- ✓ the National union marker gardeners (UNPM);
- ✓ Farmers Union of Sangalkam District;

- ✓ Women of Sangalkam District;
- ✓ Committee of Management of the market boring of Beer Thialane;
- ✓ the Executive Local of Dialogue and organization Farmer (CLOP);
- ✓ Formative of the agriculture volunteers;

Work Session with local authorities

This meeting was the opportunity for local actors to welcome Asia partners and to relate different problems to which they are confronted.

Seminar for exchanging

A seminary of synthesis has been organized under the chair of the Sub Prefect to take out again the assets of the zone, his weak points and to make a technical analysis in order to be able to clear axes of reflection on the possible exchanges.

The seminary came out again like strong points of the zone:

- ✓ Climate is favorable for lot of type of cultures;
- ✓ Existence of a small dam (Sébi Ponty) ;
- ✓ Existence of setting of dialogue (UNMP, URAS, FRAS…);
- ✓ Progressive Introduction of agricultural techniques modern (system of irrigation drips to drop, choice varietals, manufacture and use of bio -pesticides (Neem, Tabanani), use of stamps…)
- ✓ Existence of agricultural formation centers;

- ✓ Existence of centers of conditioning of fruits and vegetables
- ✓ Proximity with Dakar metropolis (markets, airport)
- ✓ Existence of mutual of saving and credit

The weak points that are cleared themselves are:

- ✓ financial Resources limited for small producers (difficulty access to the credit);
- ✓ most inputs (seeds, manure, pesticides, material, etc.) are imported and their elevated costs limit their use by small producers;
- ✓ most horticulturists are not owners of their parcels, it limits or prevent all possibility of important investment;
- ✓ a predominance of the traditional methods;
- ✓ the market tariff is very expensive ;
- ✓ frequent water cut into market perimeters, the priority for the Water Society being first to satisfy the needs in drinking water for Dakar;
- ✓ an enormous waste of water and energy (techniques of irrigation non adapted, need in water for plant non mastered);

Seminar of Sangalkam

It was suggested that to look for a multilateral cooperation between Thailand, Japan and Senegal.

Senegalese field visit in Thailand

Thai agricultural model is base on research and sharing know how through six centers installed in the country.

The research on agriculture of each center is oriented on food self-sufficiency.

The program of field visit can be resumed as follow:

Field visits show that:

- the motivation of villagers to go in the front;
- the implication level of communities into decision –makings;
- the know-how of communities;
- the professionalism of technical services;
- the massive involvement of the women to generating incomes activities;

3 Results of PRP

3.1 Summary of the output

The PRP has permit to identify actions sum up thus:

- **Short term actions**

  a) Cartography of the occupation of soils and exploitation of available resources

  b) Works of improvement of sites

  c) Capacity Building

  d) Reinforcing existing center

  e) Setting up of a documentary database

- **Mid and long term actions**

  a) Revitalization of fossil valleys in the zone

  b) Implementation of small dams to strategic positions

  c) Regeneration of natural resources (forest, fauna, soils)

3.2 Difficulties Knowledge Co-creation

Existing center in Sangalkam haven't the institutional capacity to play the future role it should make.

3.2.1 Knowledge Co-creation

The AAKCP program has been set in motion through seminaries, workshops and fields visits to facilitate the

sharing of experiences.
This setting of exchanges showed in a general manner important efforts that Asian countries granted since the Second World War.
Indeed, Asia accumulated an experience proven to be concerning communal development, so much on the exploitation of natural resources that on the transformation of agricultural products. In the domain of the setting in work of programs of development, research and the capacity of organization, Asia has many things to share.

The population is implicated into decision-makings. Yearly dialogue meetings are organized with the population for the scheduling of activities.
Developing a sustainable agriculture consists not only for the local population to understand and to learn their area, but also to reach a real economic profit and to promote the conservation of natural resources.

A group of consumers that grants withdrawals, and fixes rules of use assures the management of the water reservoir.
The using of small dams made with local material (bamboos or stones or in reinforced concrete) is a good idea for developing countries like Senegal to increase capacity of soils retention.

Knowledge used in the PRP may summarize as

- Concepts in restoration deteriorated areas.
- The development on sustainable agriculture in the form of sufficient economics
- The development of community strength, and its participation in self-reliance development

3.2.2 Creation of new Knowledge Co-creation

Many experiences have been acquired in the domain of technology transferring of renewable energies.
One can note the devices of dryer, of the improved furnaces and of systems of incineration of garbage to small scale that clear less smoke and of which the objective to make less pollution. There are also some experiences about solar furnace.

3.3 Difficulties in implementing of the PRP

3.3.1 Knowledge Co-creation

The environmental context is not the same. As most of farmers are not owners of the lands, there are many problems soils occupation.

3.3.2 Project Management and others

The planning of field visits has been changed due to the problem of coordination with South Africa and Senegal which have the same PRP. Therefore, the time of exchange between Thai side and Senegalese side for writing the preliminary document has been reduced.

4 Future plan after the PRP

The future plan is to set up the strategic development plan for a rational mobilization of water resources for agriculture in Sangalkam rural community. It will focus firstly shorts term action which define a operational planning.

The development of community potential in order to develop agriculture.

i. To study the occupation of soils and water resources available, it is necessary to have:

- ✓ cartographic data: satellite images, topographic maps ;
- ✓ complementary data on the watertable: static level, depth ;
- ✓ socioeconomic data: population, activities etc.

ii. Works of planning will be done on four sites to improve their potentiality on water for agriculture. It is about:

- ✓ the site of kagnack
- ✓ the site of the Volunteers farm
- ✓ the site of Diacksao
- ✓ the site of Khaw (Tivaouane Peulh)

These works concern the terracing of sites and supplementary works to make them usable during all year round.

A particular planning that consists in digging some crates all around the lake and cultivating inside will also be made.

Basins of water will be created in the zone where the shallow watertable is little deep to encourage the capacity of retention.

iii. A group of formative composed of four youngsters and two women will be constituted to participate to the training course in Thailand through the bilateral cooperation. It may be done at Paa Pam Community, north in Thailand

According to activities of the center, they will animate works sessions and improve results of research.

iv. Missions of the centre will be redefined by integrating:

- ✓ the knowledge in the agricultural development;
- ✓ the technological transfer appropriated on the development occupational for farmers;
- ✓ the formation for farmers on the agricultural technology and manual expertise;
- ✓ best outputs seeds and raising of animals;
- ✓ activities improving incomes of farmers;
- ✓ a source of education and recreative zone for the population.

Existing polyvalent center

v. A database will be established concerning of all information about integrated agriculture.

Mid and long term actions will require other financial partners and their will take about 7 years. Those actions concern the restoration and the development of water resources

Actions to lead are:

i. Identification and planning of the existing hydrographical network, the cartography will permit to identify and to plan the hydrographic network. The revitalization of fossil valleys will permit to incresae the potential of water in planning sites.

ii. Once the hydrographic network is identified, small dams made in bamboos, in stones or in reinforced concrete will be used to give back the humidity to soil in zones from slopes to strategic places.

The occupation of soil will be managed well through a discriminating reforestation that respects the topography of soil and protection of fauna.

iii. The reforestation as fixing soil will permit to recover four wood types:

- ✓ the wood of fire-chamber;
- ✓ wood for the handicraft;
- ✓ the edible wood;
- ✓ and the medicinal wood.

5 Assessment of the PRP

5.1 Relevance

The last two decades of drought generated in Senegal, a decrease of the shallow aquifer dragging the lowering of most traditional wells on the one hand and on the other hand, the enlargement of the salty zone creates the pollution of groundwater and surface water. This big drought made very precarious the agricultural production of sahelian countries.

To Senegal, the setting up of a strategy of water resources management must fit imperatively in the perspective of social, economic and political development of national strategies. It must be however sufficiently supple to be able to participate actively in the orientation of sectorial policies whose object is notably to answer, in a short term, to a pressing demand of populations for the purpose of agriculture.

The control of orientations of the agricultural development requires that some measures are taken quickly.

It is therefore in this context that the reflection is hired on the development of a national strategy of water resources management: it imposes, in priority, to set in motion an active institutional framework, capable to adapt quickly to the problematic induced by national or local dynamics of development.

The PRP has permit a lot of fruitful exchanges in the domain of the mobilization and the management of water, of lasting techniques of regeneration of soils, of the transformation of agricultural products and the level of implication of the populations in the decision makings.

Senegal authorities count to capitalize all those acquired experiences for Sangalkam rural community to have a good strategic development plan. Therefore, all actors will be implicated to deepen the reflection on different actions identified.

Considering the level of exchange of experiences reaches, Senegal would wish that the setting of cooperation between JICA, Thailand and Senegal (trilateral) is reinforced for a lasting partnership relation in view of a better sharing of experiences.

5.2 Effectiveness

Sangalkam associations are now mobilized to work together to develop the agriculture of their area.. They expect so much of the Strategic Development Plan to make up solutions of their problems. Central and local authorities are very acquainted with opportunities presented by the PRP.

5.3 Efficiency

Humans resources :

- Local people
- Technical services
- Thai experts

Financial resources

- Accommodation (Hotel, restaurant)
- Transportation (Air ticket, Cars)

All resources have been used taking account of the Plan of Operations.

Sangalkam rural community is included in the zone called Niayes. This zone occupies the Atlantic fringe of the Senegalese coast in the North-East of Dakar and extends on a surface of 3090 km² covering four administrative regions and nine departments for a population estimated at 700,00 inhabitants.

The zone of Niayes is a vital zone of production for Senegal in the field of agriculture, of the breeding (dairy and poultry farming) and of fishing production. The economic function of Niayes zone has another dimension, which is that of the contribution to the improvement of the social and nutritional status of the vulnerable strata population.

As it's the same context, actions identified may be applied inside Niayes zone.

5.4 Sustainability

5.4.1 Conditions to Ensure Sustainability

Committee of Dialogue on the Management of water in the zone is a consultative organ that has for mission:

1. to coordinate the implementation of the action plan for the integrated water resources management in the area;
2. to study and to analyze, according to the administrative demand, local collectivities or users, all relative questions of water management in the area.

   Those questions concern:

   - ✓ planning for developing and preserving water resources in the zone
   - ✓ coherent and rational enhancement of water resources in the zone
   - ✓ relative regulation to exploitation, sale, distribution, protection of water resources and land use in the geographical circumscription of the zone;
   - ✓ all other aspects bound to the management and the mastery of water resources in the zone.

All farmers associative are represented into the Committee. It can assure the sustainability of the implementation of the strategic plan by coordinating all actions making.

Since the Rio conference in 1992, Senegal entered into a dynamics of integrated water resources management. This process requires an implication of all actors to succeed to concrete and sustained results.

The Water Resources Management and Planning Department (D.G.P.R.E), which is in charge of the management of water resource at the national level, is carrying out a process of developing an National Action Plan for an integrated management of the water resources (IWRM).
Workshops of information and public awareness based on IWRM concept organized ahead the country. For each region (11), twenty actors of water representing technical services of the State, local communities, NGOs and organizations of farmers were brought together at these meetings.
As results of these seminars, some recommendations have been suggested:

- ✓ the actualization and awareness of the water code;
- ✓ the creation of dialogue frameworks on the regional and local level;
- ✓ the awareness of irrigation systems allowing to save more water (drip by drop);
- ✓ the systematization of the environmental assessment studies of hydraulic infrastructures project;
- ✓ the reinforcement of the technical capacity of local communities.

The National Action Plan must take account into actions identified with the PRP.

6 Lessons learned

The manner which every farmer manages his exploitation as holding counts the following indications: 30% in reservoir of water, 30% in rice field, 30% in arboriculture and 10% in rising, the rest in market gardening and dwellings. The occupation of soil is managed well through a discriminating reforestation that respects the topography of soil.

The monitoring of interests conflicts is very interesting. In fact, rules of uses are fixed in dialogue with populations.

The research on agriculture is oriented on food self-sufficiency. The integrated agriculture holds in account of types of cultures practiced, and other related activities as the reforestation, and the conservation of soil.

The reforestation as fixing soil permits to recover four types of wood:

- ✓ the wood of fire-chamber;
- ✓ wood for the handicraft;
- ✓ the edible wood;

- ✓ and the medicinal wood.

7 References

Report of Thai field visit, January 2006

Report of Senegalese field visit, mars 2006

Annex 1: Project Design Matrix

(1) Outcomes after the PRP

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
(Overall goal) water resources management for agriculture in Sangalkam area will be more efficient	Water level and water quality are managed	Data collected in site	Rainfall remains constant
a permanent dialogue frame will be defined to involve all water users particularly farmers	Regular meeting for raising local population awareness on water legislation and appropriate water management techniques are organized	Technical meetings	Local associations of farmers accept to cooperate

(2) Achievements within the Period of the PRP

Narrative Summary	Important Assumption
(Final Outputs) Preliminary development Plan Report is formulated	Local political system is not changed.
(Activities to produce Final Outputs) 3. Formulation of Preliminary Development Plan Report 3.1. Examination of Draft Report 3.2. Validation of Draft Report	
(Intermediate Outputs) ✓ Questionnaire by Thai side and answer by Senegalese side ✓ Report of Thai Experts on study mission in Senegal ✓ Report of Senegalese Experts on study mission in Thailand o A network for developing cooperation between Water Resource Management and Planning Department and Huai Hong Khrai Royal Development Study Center will be installed to continue sharing experiences on water management.	**Inputs**
(Activities to produce Intermediate Outputs) 1. The project implementation unit is established. 1.1 Personnel and budget are allocated as planned. 1.2 The plan of operations is formulated. 2 Knowledge exchanges with the Thai partner are conducted. 2.1 Information Exchange ✓ Questionnaire from Thai Experts to Senegal ✓ Answer to questionnaire by Senegalese Experts 2.2 Thai Experts study mission to Senegal ✓ Understanding the actual condition of Senegalese agriculture water resources management ✓ Report submitted by Thai Experts with recommendations on Senegalese Water resources management and the appropriate cooperation scenario 2.3 Senegalese Experts study mission to Thailand ✓ Technical visit to Huai Hong Khrai Royal Development Study Center ✓ participation to a workshop ✓ Report submitted by Senegalese Experts with recommendations how to make operational techniques learnt in Thailand to Senegalese water resources management 2.4 Preliminary Development Plan Report is drafted by both sides	**Senegal** ● Technical Experts(Ministry of Agriculture and Hydraulics) ● Transportation facilities ● Office facilities **Thailand** ● Technical Experts(Huai Hong Khrai Royal Development Study Center) ● Office facilities **JICA** ● Operational supports ● Budget supports

Annex 2: Plan of Operations (sample)

Major Events and Activities	2005 June	July	November	December	2006 January	February	March	April	May	June
		Mid-Term Seminar			Implementation of the PRP					Final Seminar
		▼ Project Document		Monitoring Mission				▼ Final Report		
(Activities Before the Commencement of the PRP)										
[0] Formulation of the Project Document										
[0-1] Guideline for the project document is distributed.										
[0-2] 1st draft of the project document is formulated and submitted.										
[0-3] The 1st draft is considered by Japanese side.										
[0-4] 2nd draft of the project document is formulated and discussed in the mid-term seminar.										
[0-5] Final draft is formulated, submitted, and agreed by the three parties.										
(Activities to Produce Intermediate Outputs)										
[1] The Project Implementation Unit is established.										
[1-1] Personnel and budget are allocated as planned.										
[1-2] The plan of operations is formulated.										
[2] Knowledge exchanges with the Thai partner are conducted.										
[2-1] Thai Experts questionnaire										
[2-2] Senegalese experts answer										
[2-3] Thai study mission in Senegal										
[2-4] Senegalese study mission in Thailand										
[2-5] Draft Preliminary Development Report is drafted by both sides										
[3] Development Plan Report formulated										
[3.1] Examination of Draft Preliminary Development Report by both sides										
[3.2] Validation of Draft Preliminary Development Report										
Development Plan Report formulated										

Annex 3: Adjusted Plan of Operations

Major Events and Activities	2005 June	July	November	December	2006 January	February	March	April	May	June
		Mid-Term Seminar	Implementation of the PRP							Final Seminar
		▼ Project Document		Monitoring Mission				▼ Final Report		
(Activities Before the Commencement of the PRP)										
[0] Formulation of the Project Document										
[0-1] Guideline for the project document is distributed.										
[0-2] 1st draft of the project document is formulated and submitted.										
[0-3] The 1st draft is considered by Japanese side.										
[0-4] 2nd draft of the project document is formulated and discussed in the mid-term seminar.										
[0-5] Final draft is formulated, submitted, and agreed by the three parties.										
(Activities to Produce Intermediate Outputs)										
[1] The Project Implementation Unit is established.										
[1-1] Personnel and budget are allocated as planned.										
[1-2] The plan of operations is formulated.										
[2] Knowledge exchanges with the Thai partner are conducted.										
[2-1] Thai Experts questionnaire										
[2-2] Senegalese experts answer										
[2-3] Thai study mission in Senegal										
[2-4] Senegalese study mission in Thailand										
[2-5] Draft Preliminary Development Report is drafted by both sides										
[3] Development Plan Report formulated										
[3.1] Examination of Draft Preliminary Development Report by both sides										
[3.2] Validation of Draft Preliminary Development Report										
Development Plan Report formulated										

Annex 4: Photos

Material and techniques used for increasing soils capacity retention

Implication of communities into decision-makings

South Africa

Final Report

Policy Research Project
on
Soil Erosion and Moisture Retention

Department of Agriculture, Limpopo Provincial Government, South Africa
and
Huay Hong Khrai Royal Development Study Center, Thailand

Asia-Africa Knowledge Co-Creation Program
-Rural Community Development Sub-Program-
JFY 2006

THE GOVERNMENT OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY

1 Table of content

2 Summary

The program is a follow-up on the second seminar of the Asia Africa Knowledge Co-creation Program (AAKCP) which was held in Thailand in 2005. The PRP for RSA (Limpopo) was based on the Soil and water management with special reference to Sekhukhune high land soil erosion.
The operation of the program was divided into 3 (three) phases, and the first phase was the visit to RSA by officials from Huay Hong Khrai Development center in Thailand. The main objective of the visit was to observe the status of natural resources in Sekhukhune District, and how best to assist and come-up with a sustainable developmental plan on soil and water management jointly with RSA.
The second phase was the visit by RSA (Limpopo Province) to Thailand, with the objective of observing and studying the responsible use of natural resources in Thailand and the operation of Hauy Hong Krai development study center, as well as the approach to RSA training. The third phase was the hands on training at the identified pilot project which was carried out by Thai expects from the development center.
The first two seminars were based on plenary of joint activities of the two partners and the implementation within a given time. The visit by South African delegation which includes Mr. Marishane Rocks from Sekhukhune, Mrs. Sekgothe Edith who is a community leader on land issues, and Mr. Matjokana E from Partnerships, commenced on the 11th and ended on the 19th March 2006 as the continuation of the inter action between RSA and Huay Hong Khrai development center.

The continuation of the program started as from the 3rd April 2006 with the main purpose of implementing the training plan which was initiated during the visit by RSA delegation to Thailand.
The Thai expects and the staff from JICA visited the Province in Sekhukhune district for hands on demonstration and training of the communities around Maila Mapitsana.
The importance of the program is to train the communities on different methods of taking care of their environment, including forestation and construction of check dams which serves as water source and also avoid soil erosion.
The program unfolded as follows:

Date	Activity	Objective	Observation
12 March 2006	Arrival	Logistic arrangements meeting.	Well received.
13 March 2006	Briefing on the activities of the Huay Hong Khrai Royal development center. Study on Reforestation	Understanding the Royal initiative, community involvement and integration. Advantages of reforestation.	1. Involvement of stake holders, Departments and mostly the support from Thai King. 2. Participation of youth in

	and check dam's construction.		trainings in the center and care of the environment and natural resources. 3. Theoretical information on the operation and activities of the center.
14 March 2006	Visiting the center's different projects. like irrigation, soil and livestock development	To observe activities of agriculture, reforestation and environmental and natural resource management.	1.Different methods of conserving water and soil formation using natural resources like vetiver grass bamboo ,dead plants, rocks and tires. 2. Compost marking, organic farming and development of organic medicines. 3. Closer cooperation between the center and communities in soil, forest, water management and agriculture.
15 March 2006	Visited Baan Pa Sak Ngam community and overnight at the village to exchange ideas with the community.	Briefing by community leader activities in the community and exchange of knowledge.	1 .Community activities in expanding and implementing the Royal initiatives. 2 .Impact of cultural norms and values on utilization and reservation of natural resources. 3 .Differences between RSA and Thai on soil type and structure, rainfall, natural resources and Land tenure system.
16 March 2006	Visited Land development Regional office 6, Chiang Mai and Mae Rim District.	Study on different methods of soil surface protection and prevention of erosion by utilizing plants. To study techniques on water reservation in agricultural area.	1 .Different technologies used in the highlands on soil and water management. E.g. construction of contours and planting of vertiver grass between crops.
17 March 2006	Huay Hong Khrai center	Concluding the different lessons leant during the stay in Thailand with the staff of the center and communities leaders and members Creating a skeletal action plan to be implemented in S.A (Limpopo-Sekhukhune)	1 .The center and the communities are basically implementing the plan of the Thai King in coordination with Government departments and other stake holders. 2 .Youth trainings on different developmental

			activities while keeping natural resources in perfect balance.
18 March 2006	Departure	South Africa	Arrived save on the 19th March 206

3 General Information of the PRP (Policy Research Project).

3.1 Background of the PRP.

The PRP in Limpopo(RSA) started in 2005 through seminars which were held in Japan and Thailand respectfully. The main objective of the PRP is to assist Africa countries to improve their livelihood through Knowledge co creation in partnership with Asian countries and not only knowledge exchange. The learning together and joint creation of new idea to addressing challenges in rural community development is the key factor of the PRP.

The main problem identified is soil erosion coursed by deforestation, strong runoff, cattle system and weak soil texture in Sekhukhune area.

The PRP in Limpopo has been planned in line with the policy of the Land care and the training will also involve the officials from Land care component and beneficiaries participating in the program as they have already started. The PRP in Limpopo (RSA) will basically augment the efforts of land care committees in Sekhukhune villages.

The PRP in Limpopo is piloted at Mail Mapitsana as the area was considered the hardest hit by erosion. Most members of the communities in Sekhukhune rely on farming, since they also contributes to the national statistics of UN employment.

3.2 Narrative Summary of the PRP.

Communities around Ga Maila Mapitsana were represented in the whole exercise by committee members since the committee comprises of members from different neighboring villages.

The overall goal of the pilot project is to combat soil erosion in high land area to improve the Environment, Livelihood and self reliance of communities.

Formulate proposal on training project.

The operation of the PRP is divided into three phases:

1Visit by Thai Experts to RSA for observation

2 Visit by RSA to HHK (Thai) for observation.

3 Hands on workshop at the pilot project area**.**

3.3 Amendments of the original Plan

In general no significant amendments were effected to the original plan, except some changes in terms of dates, time and venues to be in line with the day to day operation of the district.

3.4 Inputs conducted

The department of Agriculture provided officials from the district office and Provincial office

Asian partners provided two expects from Hauy Hong Krai (HHK) development study centre in Thailand

JICA Funded all the activities of the inter action between the two partners (Asia and Africa).

3.5 Activities Implemented

Phase one:
Thai visited 9 areas for observation of the problem of soil erosion with RAS officials and the community .

Phase two
RSA visited Thai for learning HHK Royal projects and their villages.
Phase three
Thai and RSA had a work shop and trained the communities on techniques of check dam construction in the mountains area.
Communities were also trained on team spirit and self reliance.
Coordination of community activities with land care

4 Result of the PRP

4.1 Summary of the Output

Intermediate output
The extension officers and the communities have knowledge of solving soil erosion by check dams method and have better understanding of the responsible use of natural resources.
Check dams also provide moisture which then result in reforestation.
Community members acquired team spirit and self reliance to can live within their means while taking into consideration the next generation .

Check dams and gabion methods were constructed at the pilot project area.
The idea created jointly through the gabion method and the check dams is placing of gabions at the upper potion of the mountain and check dams at the bottom or interchangeably.

4.2 Knowledge Co-creation

4.2.1 Knowledge Shared with the Asian Partner Organization.

Several methods and techniques of soil and water conservation in Thai villages.
Community leaders provide full support to all developmental programs more especially the responsible use of natural resources with more emphases to water and soil .
The involvement of youth in the programs sustainable community development, the approach is based on the fact that there is no sustainability without youth involvement.
Community participation is the best weapon for self-reliance and responsibility .

4.2.2 Creation of new Knowledge

New aspects have been observed in the program and used to modify the existing knowledge , Like positioning of gabions from low land to high land area.
Technical use of local natural resources, the packing of stones to make check dams and allowing of the gentle flow of water from the mountain with less or no damage to the soil and creating moisture for the vegetation.
Construction of check dams using alternative materials and adaptation of Asian Knowledge into African context.

4.3 Difficulties in Implementation of the PRP.

4.3.1 Knowledge co-creation

The language barrier although not that problematic can always delay events as we some times have difficulties in understanding each other (Asia and Africa).
Communication links between Thai and RSA technically, the communication is only through the internet which is not always available.

- Cultural differences in terms of moral regeneration on care of natural resources.

4.3.2 Project Management and others.

The channel of communication between JICA and RSA is very long and there is no technical advisor working closer to the team in Limpopo on day to day activities as done in other African countries.

5 Future plan after the PRP.

- Involve more communities around the pilot project for short and long term study on soil and water management in the high land area.

- 30% targeted for expansion in Sekhukhune area for more practical demonstration and evaluation of the progress.

- Work closely with the Provincial land care component as the PRP has been planned in line with the policy on Land care which is the creation of awareness on responsible use of natural resources.

- Allow other districts to come and learn from the pilot project more especially community garden members .

- Further co operation with Huay Hong Krai (HHK) centre for further training and knowledge co creation .

6 Self – Assessment

6.1 Relevance

Sekhukhune district is basically a high land area and need such kind of interventions before the degradation of soil; water and vegetation increases. Majority of the communities depend on agriculture for income generation and food, meaning that they need adequate land for survival.

6.2 Effectiveness

The workshop conducted created team spirit amongst community members and coordination with other communities and stakeholders.
The program also created a good relationship between the Land care committee and Community leaders.

The introduction of check dams and positioning of gabions also contributed positively as some of the results have already been observed from the rain.

6.3 Efficiency

The PRP for Limpopo was implemented efficiently more especially the co creation of knowledge adapting it to the local context.
The visit by RSA official and community member played a very important role in the implementation of the PRP since the knowledge was not only technical, but also social as well as adoption of way of attracting Youth the process.

6.4 Impact

The PRP had a positive impact since the process is still going on at villages and the progress there of will be evaluated monthly.
The participation of the community leaders is also another sign of the impact of the program.
The strength of the committees comes about as an output of the pilot project.

6.5 Sustainability

The percentage in terms of the sustainability of the pilot project is presently above 50% since communities start to understand why they should be responsible for their natural resources.
The pilot project has been handed over to the Land care committee to take it further and involve other neighboring communities.

7 Lessons Learned

- Coordination of developmental activities by institutions and organizations.
- Creation of great team spirit and respect, norms and values.
- Involvement of other stakeholders in the community.
- Manufacturing of bi-products and practice of organic farming.
- Responsible use of natural resources considering the next generation.
- Participation of youth in community activities to insure sustainability

8 References

- Reports
- Project visit
- Meetings
- Workshops
- Interviews

Tanzania

UNITED REPUBLIC OF TANZANIA

MINISTRY OF COMMUNITY DEVELOPMENT, GENDER AND CHILDREN

DRAFT FINAL REPORT OF THE

TANZANIA'S POLICY RESEARCH PROJECT

Prepared under the cooperation with Ministry of Public Health, Thailand

DAR ES SALAAM
JUNE, 2006

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DRAFT FINAL REPORT ON THE TANZANIA'S POLICY RESEARCH PROJECT (PRP) JUNE 2006

1 GENERAL INFORMATION OF THE PRP

1.1 Background of the PRP

The Tanzania's PRP is a baseline survey to determine factors leading to HIV/AIDS transmission in Mvomero and Morogoro rural districts.

HIV/AIDS is one of the most prevalent infectious disease that affects human beings. The disease is mainly transmitted through sexual intercourse, blood transfusion and mother to child. It is far reaching and most damaging epidemic that mankind has ever witnessed. Unknown until about twenty years ago, this epidemic has grown, within a short duration, into global tragedy with huge implication in all aspects of human development. Originally perceived as a health problem, HIV/AIDS has insidiously grown beyond the boundaries of the health sector and has left behind a severely damaged and overloaded system due to its direct impact on morbidity and mortality of the general population and on health care workers themselves. The entire world has now awakened to the fact that an effective response to HIV/AIDS requires concerted efforts across all sectors and involving a wide array of actors and disciplines.

Tanzania is among the countries with the highest prevalence of HIV in the world and the infection rate is rising rapidly. The first three cases of AIDS in Tanzania were reported in 1983. Three years later (1986) all regions of Tanzania reported having AIDS cases which was an indicator that the disease was spreading very fast.

According to the Tanzania HIV/AIDS Indicator Survey (2003 – 2004) seven percent (7%) of Tanzania adults aged between 15 – 49 years are infected with HIV/AIDS. Prevalence among women is higher (8%) than among men (6%). The HIV/AIDS pandemic however, shows strong regional variation. Regions with highest HIV prevalence in Tanzania are Mbeya (14%), Iringa (13%) and Dar es Salaam (11%). The prevalence rate of HIV in the study area viz. Morogoro region is 6.7%.

The Tanzania's PRP is an attempt to curtail the fast spread of HIV/AIDS. Its implementation will result into formulation of guidelines to be used by Local Authorities and extension workers in putting up interventions geared to combat HIV/AIDS. This in turn will lead to saving lives of the

country's labour force which would otherwise die in the absence of such interventions. It will also enhance productivity of family members by saving time which would otherwise be spent on supporting and taking care of HIV/AIDS patients who invariably take very long time to die. In short the PRP supports all initiatives with direct bearing on poverty reduction. For that matter it supports achievements of objectives stipulated in the following National Policies and Strategies; National Policy on HIV/AIDS (2001), Community Development Policy, Poverty Reduction Strategy, Women and Gender Development Policy, Child Development Policy and the National Strategy for Growth and reduction of poverty(NSGRP).

1.2 Narrative Summary of the PRP:

Overall Goal of the PRP

HIV/AIDS pandemic is a global disaster which has a very negative impact on socio-economic development. The proposed PRP is a response in combating HIV/AIDS as such its overall goal is to reduce the spread of HIV/AIDS in the country and hence resulting into reduced number of AIDS cases.

Target Groups and Areas.

Implementation of the PRP has been carried out in two sample districts namely Morogoro rural and Mvomero. The two districts are within Morogoro region. They have a total population of 533770 people and 115037 households. Administratively the two districts are divided into 10 divisions, 42 wards and 233 villages. Residents of those two districts are the immediate beneficiaries of the PRP. In a long run however, when outputs of the PRP shall be disseminated and used countrywide then both rural and urban communities in Tanzania shall benefit.

Outputs:

Immediate Outputs:

The immediate output of implementation of the PRP which is already in place is a baseline survey report narrating findings and recommendations. It is through the relevant findings and recommendations that guidelines to be used by Local Authorities in the districts, Non governmental Organisations (NGOs) and extension staff shall be developed.

Final Outputs:

The final outputs shall inevitably be guidelines which will enable Local Authorities in the districts, Non governmental Organisations (NGOs) and extension staff to formulate the relevant interventions geared to address HIV/AIDS related issues as revealed in the baseline survey.

Activities:

In implementing the PRP eight (8) activities out of eleven stipulated in the plan of operation (PO) have been accomplished. They include; Initial preparations, Tanzania experts to visit Thailand, Preparation of survey tools, Sensitization workshop, Conduct baseline survey, Preparation of baseline survey report and draft guidelines(partially done since the draft guidelines are not ready),Thai experts to visit Tanzania and Activities in Asia (communication, materials etc).

.

Inputs:

Tanzania:

Tanzania provided five (5) local lead experts and Office accommodation for the project..

Thailand:

Thailand provided two (2) experts with vast knowledge and experiences in HIV/AIDS related matters.

JICA:

JICA provided financial resources to carter for computers and printers, stationery, photocopiers, Air tickets, allowances and accommodation for both local and international experts.

1.3 Amendments of the plan

The initial proposal as agreed during the midterm seminar was amended when the Tanzania delegation went to Thailand on a study visit in November, 2005. The Thai counterparts noted that the proposal was rather broad as it aimed at addressing three (3) research questions focusing on prevention, care and support. They said it was not easy to carry out such a study considering the time factor. They advised that only one aspect out the three should be addressed. It was finally agreed to zero in on the prevention aspect in order to address the first research question titled “Why don’t people change their sexual behaviour despite the high awareness and knowledge on HIV/AIDS”.

Accordingly the study title, broad objective and specific objectives were restated as follows:

The study title: Baseline survey on sexual behaviour among the reproductive age group in Mvomero and Morogoro (R) districts.

Broad objective: To understand sexual behaviour of the rural communities in relation to persistent transmission of HIV/AIDS in Mvomero and Morogoro district.

Specific objectives of the Study included:

- To study the pattern of sexual behaviour among reproductive age group (Ascertain the knowledge of people on proper use of condoms).
- To identify factors and context affecting the sexual behaviour and HIV transmission (to determine attitudes of the community and the proportion of people using condoms).
- To determine the advantages and disadvantages of condom use.
- To ascertain multiple partners among men and women in the study area.
- To ascertain the relation between STIs and sexual practice.

The expected output remained as guidelines and recommendations developed from the result of the study.

The study population was the reproductive people aged between 15 – 40 years in Morogoro (R) and Mvomero districts.

The sample size to be calculated with assistance from a consultant.

The sample technique shall be random

Research design shall be descriptive cross-sectional

Data collection shall be through;

- Structural Interview (semi structural questionnaire)
- Focus group discussion
- Observation technique.

While developing the survey tools, the Tanzania side revisited again the problem tree to ascertain that the core problem and its associated causes were real. That exercise again necessitated to make slight amendments in the title of the study, its broad objective and the specific objectives as follows;

The study title changed to read "Baseline survey on unsafe sexual behaviors leading to HIV/AIDS transmission in Mvomero and Morogoro districts. The broad objective became to determine factors leading to unsafe sexual behaviors among the sexually active age groups. Finally the specific objectives were rephrased as hereunder;

-To determine knowledge of people on HIV/AIDS

-To determine reasons as to why people entertain having multiple sex partners

-To explore on cultural practices and beliefs that favour unsafe sexual behaviours

-To determine factors leading to improper/lack of condom use

-To determine the extent of the sexually transmitted infections (STIs) in the study area

Notwithstanding all the above changes, the final output remained the same. In fact there was no change in the PDM

1.4 Inputs Conducted:

Two types of inputs were used in implementing the project as follows:

(i) **Human Resource** which included ;

- Five experts from Tanzania (one from the Ministry, two from Mvomero district and two from Morogoro rural district).
- Consultant for preparation of survey tools and data processing.
- Twelve enumerators for collecting the required data.
- Two experts from Thailand for collaboration in the survey design, data analysis and development of the guidelines.

(ii) **Financial resource** to carter for costs pertaining to key issues like allowances, transport, conference facilities, computers and printers, photocopying, stationery, communication and general administration.

These inputs were clearly stated in the project document. There has been no significant change except for the quantity/amount utilized vis-à-vis the planned amount. For example the number of enumerators dropped from the originally planned 20 to 12 after narrowing the proposal. Accordingly the amount of cash utilized also dropped in relation to the planned budget.

1.5 Activities implemented:

As per the plan of operation (PO) a total of eleven (11) activities were to be undertaken in implementing the project. To date seven activities have been successfully accomplished one is still ongoing and the rest three have not started. Those accomplished are as follows;

(i) Initial Preparations;

In the initial preparations authorities in the two sample districts Mvomero and Morogoro rural were informed on the intention of the Ministry to collaborate with them in carrying out the baseline survey. The baseline survey team composed of five members (one from the Ministry, two from Mvomero and two from Morogoro rural) was formed. The team members collected fundamental data on HIV/AIDS in their respective districts and compiled a joint status report on the epidemic.

Study Visit to Thailand

The Survey team members went on a five days study visit to Thailand from 28/11/05 to 02/12/05. The objectives of the study visit were:

- To know about the HIV/AIDS situation and its impacts in Thailand.
- To have better understanding on the national HIV/AIDS policy in Thailand and the Non Governmental Organizations(NGOs) involvement in HIV/AIDS related matters.
- To understand the issues concerning HIV/AIDS Information system at provincial, district and community levels as well as roles of community involvement in HIV/AIDS care and prevention.
- To design baseline survey plan including contents/materials necessary for the survey.

While in Thailand, the team visited the following places;

- JICA office to pay a courtesy call
- Ministry of Public Health to have lecture on HIV/AIDS situation, surveillance and national management.
- Phyathai babies home to see non-health sector involvement in HIV/AIDS related matters.
- Phayao Provincial Public Health Office to have presentations on HIV/AIDS situation, Prevention and alleviation at provincial level.
- Tum Health Centre to get a presentation on Civil Society involvement in HIV/AIDS related matters.
- Jhun Community Hospital to receive a lecture on Day Care Clinic (DCC) for people living with HIV/AIDS.
- Department of Disease Control at the MoPH to meet Dr Petchsri and design baseline survey plan including contents/materials necessary for the survey.

The five days study visit was educative on the Tanzania side. They learned a lot on the use of condoms, ARVs, VCTs and Campaigns in combating the HIV/AIDS pandemic. What Interested them most was the approach on which campaigns are being conducted. The Thai Government deploys organized groups of people living with HIV/AIDS (PHA groups) to campaign against the epidemic

This is probably the most effective means of delivering HIV/AIDS massages because volunteers from such groups have real experience on the pandemic. It is easy for the community members to believe on what they are talking about/campaigning against.

Another advantage associated to PHA groups in tackling HIV/AIDS is their ability to empower group members economically. Through income generating activities and savings and credit arrangements, such groups are able to empower their members economically. This is a break through to AIDS patients who cannot afford costs associated with use of ARVs treatment to prolong their lives especially in poor countries like Tanzania.

Regarding the project proposal, Tanzania delegation had a very fruitful discussion with their Thai partners. They were able to go through the initial proposal and revise it into something manageable.

Tanzania delegation would like to thank their Thai partners for preparing a very good program for the field visit and their active participation in ensuring that it was followed. They would also like to thank JICA for the good co-ordination of the arrangements and the funding of the field visit.

(iii) Preparation of Survey Tools

This activity was done in a workshop which was ably facilitated by a consultant.

The exercise started by revisiting the problem tree which is annex iv of the project document of the Tanzania's PRP. The problem tree was transformed into a tree of objectives (future solutions of the problems) and analysed. Through the process workshop participants were able to formulate both the broad objective and five specific objectives as they appear under item 3.3 above.

Finally questions geared to collect information under each specific objective were formulated. These constituted the survey tool or questionnaire.

The draft survey tool was then sent to the Thai counterparts for comments and more inputs.

After receiving the Thai counterparts comments, the tools were finalized. They were later pre-tested in two villages one from each district, but not one of the study areas. Ambiguities detected were collected before the tools were used for data collection in the study area.

(iv) Sensitization Workshop

Before carrying out the baseline survey in the two study districts of Morogoro and Mvomero, a sensitization workshop was conducted to leaders at district, ward and village levels.

Main objective of the Workshop was to inform them about the baseline survey and solicit their support to the whole exercise. It was a one day workshop. Participants had time to work in groups and provide answers to the following pertinent questions on HIV/AIDS pandemic;

Why don't people change their sexual behaviour despite the high awareness and knowledge on HIV/AIDS?

Why should stigma and discrimination continue unabated despite the high sensitisation on how HIV/AIDS is spread and the fact that almost everyone has in one way or another been affected by the pandemic?

What is the way forward in mitigating HIV/AIDS pandemic in the Tanzanian context?

Group answers given to these questions were interesting and provoked a lot of discussion to the extent that time was not enough.

(v) Conduct Baseline Survey

The study was conducted for 15 days from 19th March up to 3rd April ,2006 .Twelve enumerators were deployed to collect the required information from six villages(two semi-urban and four rural) in the two districts.

Semi-structured questionnaire were used to collect information from the respondents. Before a respondent was interviewed, an interviewer introduced him/herself to the respondent, and explained briefly the purpose of the study. Thereafter an individual consent was requested before interview began. Female respondents were interviewed by females, while male respondents were interviewed by males to make respondents feel free in answering sensitive questions.

Another method used to collect information was the Focus Group Discussion (FGD), whereby a group of people with similar interests were asked to respond on several issues regarding to HIV/AIDS transmission.

Data collected was entered and analyzed using an SPSS for Windows Version Statistical package. T-Test was used to perform parametric tests to analyze quantitative data, and variances in all cases were considered equal. –parametric tests were done using Man-Whitney U test and Chi-squared test to analyse qualitative data. All tests were 2 tailed tests done at 95% confidence level.

(vi) Survey Report and Draft Guidelines:

The survey report writing was done immediately after data from the baseline survey were analyzed. In carrying out this activity the team members brainstormed on how should the report be organized viz. the contents of the report. Having done that they divided the chapters/topics among themselves and continued to write the report. The draft report was then sent to the Thai counterparts for comments and more inputs. The report was concluded by incorporating the counterparts comments and additional information. The team however failed to prepare the draft guidelines due to time factor. In addition it was not clear how the guidelines would link with the baseline findings. The Thai counterparts however volunteered to prepare framework for the guidelines in order to shade light for the Tanzania side to accomplish the activity.

(vii) Thai Experts Study visit to Tanzania

The Thai delegation made a five days study visit to Tanzania as one component of the Tanzania's Policy Research Project (PRP). It was held from 08 – 12th May, 2006 and graced by participation of two officials from JICA Regional Support Office Nairobi.

The Objectives of the study visit were:-

(i) To visit the study area and see community involvement in controlling the spread of HIV/AIDS.
(ii) To provide Technical Support in data analysis.
(iii) To provide Technical support in preparing the guidelines.

While in the country the Thai delegation visited the following places:-

- Tanzania JICA Office, Ministry of Community Development, Gender and Children, Mvomero and Morogoro Rural District Councils to pay a courtesy call.
- Ngerengere Health Centre in Morogoro (R) to see a VCT and a group of people living with HIV/AIDS.
- SHIDEPHA a community based organization which links PLHA and service providers such as VCTs, Health Centres and Hospitals.
- HACOCA another CBO dealing with PLHA. Among other things the organisation provides VCT services and takes care of AIDS patients who are discharged from hospitals for lack of treatment.

- Mlali information resource centre which is a meeting place for PLHA to share information and console themselves.
- The Tanzania Institute of Education to attend a workshop on the baseline survey report writing and preparation of the guidelines.

It is difficult to mention what the Thai side learned from this visit, however, the Tanzania side benefited a lot through knowledge and experience sharing with their Thai counterparts.

Some of the things that Tanzania side learned from Thai experts were as follows;

- People living with HIV have an equal chance to work and collaborate with other individuals.
- Capacity building is needed to district workers in the areas of research i.e. methodology, communication and counselling skills.
- We learned on data analysis, important variables required during making a conclusion and limitation of open ended questions.
- NGOs working for HIV/AIDS control need support as mentioned by a group of people living with HIV/AIDS.

2 Results of the PRP

2.1 Summary of the Output

The Policy Research Project (PRP) was conducted in the two districts namely Mvomero and Morogoro Rural districts. The main objective of the study was to determine factors leading to unsafe sexual behaviours among the sexually active age groups. The specific objectives of the PRP were:-

- To determine knowledge of people on HIV/AIDS
- To determine reasons as to why people entertain having multiple sex partners
- To explore on cultural practices and beliefs that favour unsafe sexual behaviours
- To determine factors leading to improper/lack of condom use
- To determine the extent of the sexually transmitted infections (STIs) in the study area

A cross-sectional survey was conducted in three villages randomly selected from each district. In each village at least 50 respondents were randomly selected and subjected to a semi-structured administered questionnaire. In total 301 respondents, among which 147 were males and 154 were females, were interviewed. Their distribution by sex and district are as shown in Table 1. below.

Table1: Study areas and Sample size randomly selected in Mvomero and Morogoro (R)

District	Location	Study area	Sex of respondent		Total
			Male	Female	
Mvomero	Rural	Melela	23	27	50
		Manza	29	21	50
	Semi-urban	Changarawe	36	14	50
Morogoro	Rural	Fulwe	21	29	50
		Kiroka	25	25	50
	Semi-urban	Mkambarani	13	38	51
Total			**147**	**154**	**301**

Here below are the main findings as per specific objective:-

Objective 1: To determine knowledge of people on HIV/AIDS

Main Findings

- On whether they have ever heard about HIV/AIDS, 95.0% admitted to have heard about HIV/AIDS.
- On whether they knew the signs and symptoms of HIV/AIDS, 88.7% admitted to know the signs and symptoms.
- On the Knowledge on how HIV is transmitted:-
  - 88.1% answered at least 1 correct answer
  - 88.6% rejected misconception that HIV can be transmitted by shaking hands or eating with PHA.
  - 75.3% rejected misconception that HIV can be transmitted by mosquito bites
- Other means through which HIV/AIDS can be transmitted as mentioned by respondents were as follows (Some misunderstandings on how HIV/AIDS can be transmitted):-
  - When wounds touch each other/gets into contact
  - Sharing clothes especially inner clothes/underpants
  - Use of condoms as they are purposely infected with HIV
  - Overnight celebrations and excessive drinking
  - Biting insects such as mosquitoes, bed bugs, etc.
  - Sharing cigarettes
  - Shaking hands or touching a person infected with HIV
  - Friction
  - Through getting into contact with body fluids from an infected person
  - By not testing
  - By not fearing HIV/AIDS

- Poverty and low income
- Sharing toothbrushes
- Ritual teachings given to adolescents are not good
- Rape
- Anal sex
- Richness
- Prostitution

• On the Knowledge of HIV/AIDS can be prevented, 95.4% answered at least 1 correct answer.

Other means by which HIV/AIDS can be prevented as mentioned by respondents were as follows (Some misunderstandings on how HIV/AIDS can be prevented):-

- Getting tested
- Pray God
- To avoid drunkard ness or luxury
- To be given seed money for establishing/starting small business
- To follow the teachings of the wise/elders
- To follow the commandments of God
- To be transparent/to expose people who are infected with HIV
- To play sex gently to avoid abrasions
- To eat well/Good nutrition
- To work hard to raise our economic status
- To avoid using condoms, as some are purposely infected.
- To abolish night long celebrations
- To provide employment to youths
- To get satisfied with life
- To be treated whenever you get sexually transmitted diseases
- To avoid temptations

• Responding on the question of if they have ever seen AIDS patients and how they felt after seeing the patient, the responses were as follows:-

- 74.8 % had ever seen AIDS patients
- 78.0% felt sympathetic
- 18.8% felt worried
- 3.1% felt normal

Conclusion

- Quite high proportion of people had knowledge about HIV/AIDS.
- Still certain proportion had misconceptions about HIV transmission:-
  - 24.7% had misconception that HIV transmitted by mosquito bites (This may lead to panic)
  - 11.4% had misconception that HIV transmitted by shaking hands or eating with PHA (This may lead to discrimination)

Consideration

- Standard knowledge for Tanzania people
- Knowledge linking to behavioural modification
- Afraid of getting HIV infection vs. Do not discriminate PHA, PHA can live normal life (Campaign consideration)

Objective 2: To determine reasons as to why people entertain having multiple sex partners

<u>Main Findings</u>

- For the purpose of this study, Multiple sex partners was considered as having >1 sex partner. It includes:-
  - Married and have >1 wife - 8.5%
  - Married and have lovers outside marriage - 14.7%
  - Not married and have >1 boy friend/girl friend - 11.1%

- Overall, 15.6% of respondents were having more than 1 sex partner.

- When responding to a question why did they have lovers outside marriage/cohabiting partners, reasons given by 37 out of 45 respondents having lovers outside marriage/cohabiting partners were as follows:-
  - Family sexual life
    - Burning desire/socializing/relaxation - 34.3%
    - Lack of satisfaction/has another woman/spouse not settled - 17.1%
    - The wife has a young baby/sick/ in her menstrual period - 8.6%
  - Family conflict: misunderstanding between couples - 8.6%
  - Mobility: separated by his/her spouse or when the spouse is away - 7.1%
  - Others: failed to have children - 2.9%

- On the question of how old were the respondents when they got married, the results were as follows:-
  - Mean age at which respondents got married were as follows:-

- Male: 25 years
- Female: 20 years (min 13, max 32)

– Mean age difference between spouses - 6 years

Conclusion

Lovers outside marriage might be a main reason leading to the transmission of HIV/AIDS `within families.

Objective 3: To explore on cultural practices and beliefs that favour unsafe sexual behaviours

Main Findings:

- In total, 19.6% of respondents had multiple sex partners as per definition given above.
- Comparison between religions: Moslems vs Christians on their cultural practices and beliefs, it was found that 25.6% of Moslems had multiple sexual partners compared to 13.9% of Christians ($P = 0.03$). On the use of condoms there was no significant difference between the two religions. ($P = 0.680$). Majority of people in all religions did not always use condoms when having sexual intercourse.

Conclusion:

- Although the results indicate that Moslems were more prone to have multiple sexual partners than their Christian counterparts, this does not mean that religion had an influence on multiple sexual partners. The results may be due to a fact that Moslems are allowed to have more than 1 wife (10.6 % had >1 wife) while most Christians were not.
- Condom use is not allowed by both religions. However, very few abide with this rule.

Objective 4: To determine factors leading to improper/lack of condom use

Main Findings

- First sex
  - Mean age (male: 17.6 yrs, female: 17.8 yrs)
  - Condom use (male: 16.3 %, female: 22.3 %)
- Last sex
  - Condom use
    - Male: 22.1 %
    - Female: 20.4 %

- Always use condoms: male: 24.6 %, female: 19.5 %

Further analysis indicated that:-

- Condom use at last sex
  - Male:
    - With spouse: 4.6 % (n=88)
    - With girl friend: 56.4 % (n=38)
    - With just met person: 30.0% (n=10)
    - With sex worker: 0 % (n=2)
  - Female:
    - With spouse: 16.0 %
    - With boy friend: 35.6 %
    - With just met person: n=0
    - With sex worker: n=0

- Reasons given for not always using condoms
  - Male: (N = 92)
    - Due to Trust of their partners: 82.6 %
    - Lack of partner co-operation: 2.2 %
    - Negative attitude toward condom use: 1.1 %
    - Lack of Knowledge: 2.2 %
    - Unavailability of condoms: 6.5 %
    - Related to birth control: 0.0 %
  - Female: (N = 100)
    - Due to Trust of their partners: 71.0 %
    - Lack of partner co-operation: 12.2 %
    - Negative attitude toward condom use: 4.0 %
    - Lack of Knowledge: 1.0 %
    - Unavailability of condoms: 1.0 %
    - Related to birth control: 8.0 %

- On the question to determine where the respondents obtained and availability of condoms, the responses were,

  Partner brings condom: male: 0. 0%, female: 10. 0%

  Pharmacy shop: male: 27. 1%, female: 25. 0%

General retail shop: male: 58. 3%, female: 45. 0%

Health facilities: male: 10. 4%, female: 12. 5%

AMREF project / UMATI: male: 4. 2%, female: 7. 5%

Available in the area: 87. 1% of respondents admitted that condoms were available in their areas.

- On where the condoms should be placed for easy accessibility, There was no difference between sexes in their preferences. The preferences for both sexes were in the order of ranking to be pharmacy shops, health facilities, and retail shops.

- On the question of affordability, 14.3% males and 21.1% females said that condoms were obtained free of charge. 86.4% male and 78.2% of females who use condoms said that the prices of condoms were affordable.

- On whether the respondents could purchase or ask for condoms in the presence of others, e.g. in a retail shop, the responses were:-

Not ashamed to buy in presence of others

- Male: 25.2%
- Female: 15.4%

– Reasons not ashamed

- Get used to: 7.6%
- For protection: 6.4%
- Encourage others to use condoms: 2.1%
- Depend on situation/place/sellers, use concealing language: 1.3%

– Reasons ashamed

- Sex is a secret action / not normal commodities: 66.1%
- Afraid to be seen as a prostitute: 4.7%
- Religious faith: 0.4%
- Depend on situation/place/sellers: 1.3%

On whether they could explain how condoms were used, the results were, the following percentages explained at least 1 correct answer;-

- Male:
- Female:

On the question on what problems were encountered when using condoms, the responses were:-

Burst / torn / penis abrasion	-	52.7%
Rash / itching	-	21.1%
Unpleasant smell	-	5.3%
Reduced libido, strength / abdominal pain	-	5.3%

- On the attitude of the respondents on the use of condoms, the results were as follows:-
  - Enjoy when using condoms (male: 53.3%%, female: 35.4%). The results show that more women (64.6%) did not enjoy sex compared to only 46.7% of males who did not enjoy sex when using condoms during sexual intercourse ($P = 0.033$).

- Reasons given for not using condoms always were:-
  - Used to his/her sexual partner/trust each other - 76.6%
  - Partner does not want condom use - 7.3%
  - Condoms used only for Family Planning - 4.1%
  - Not available/not prepared for the act - 3.6%
  - Don't enjoy sex - 1.0%
  - Don't know how to use - 1.0%

Conclusion:

The main reason for not using condom is the trust the partners have to each other. This need to be discouraged unless they are very faithful to each other, which is not the case in many instances. Therefore stickiness to one partner should be emphasized otherwise they should be emphasized to use condoms always.

Objective 5: To determine the extent of the sexually transmitted infections (STIs) in the study area.

Main Findings

- In total, 18.9% of respondents admitted to have ever acquired STI in their life time, out of which 79.5% knew from whom they acquired the infection. Concerning the treatment seeking behaviour, 63.8% got treatment from health facilities. Only 27.7% of the total infected got treatment with their partners, while 8.6% just bought medicines from shops and treated themselves.

Conclusion

The number of respondents who have suffered from STIs is relatively small (18.9%). But however small, this indicates that there are still people who play sex without protection. Therefore condom use still need to be emphasized through education campaigns, especially among youths. Another thing which needs to be emphasized is the treatment of both partners. Only 27.7% got treatment with their partners. This may propagate transmission of STIs in the study area if not controlled. The habit of treating themselves by buying medicines from shops without medical check up and getting proper prescriptions should be discouraged as this may lead to the development of resistant strains and hence drug resistance.

2.2 Knowledge Co-creation

2.2.1 Knowledge Shared with the Asian Partner Organization

Study visits were the only forums where the partners could meet and share knowledge and experiences on HIV/AIDS related issues. The Tanzania side benefited a lot from the two study visits. Among the knowledge and experience learned from the Asian partners include:-

- Condoms are used extensively in combating HIV/AIDS through the 100% Condom Use Programme in Thailand.

- STIs, TB and HIV/AIDS Programmes are integrated to facilitate efficiency in their management.

- ARVs are extensively used in combating HIV/AIDS (The Thai Government offers subsidies to ARVs)

- VCTs are available up to community level (dispensary) and people understand the importance of checking their sero status.

- Surveillance is important on HIV/AIDS related matters as it facilitates in establishing the trend of the pandemic. In Phayao Province, surveillance started in 1989. At the beginning male incidences were higher than female incidences but all were below 100 cases. The trend went up unabated until it reached climax in 1997 where male HIV/AIDS cases were slightly below 500 as compared to 200 for female. Then the trend dropped until it merged in 2002 at 150 cases for both men & women. Since then it has stabilized.

- Prevention is also important as it minimizes the incidences of new cases. In Phayao province it was done through campaigns by FBOs, NGOs, and village volunteers. Through campaigns people are urged to adhere to the ABCD slogan. Where A stands for Abstinence, B for be faithful, C for condom use and D for don't use drugs.

- Use of ARVs in controlling the HIV/AIDS epidemic has proved to be successful. In Phayao province, use of ARVs has helped to control the mother to child transmission by over 90%. Other people using ARVs has gained strength and be able to return to work.

- Formation of people living with HIV/AIDS groups (PHA groups) through assistance of Faith Based Organizations (FBOs). PHA groups are Instrumental in tackling HIV/AIDS related issues by: Delivering health education on HIV/AIDS to PHA and their families. Empowering group member economically through income generating activities such as arts and crafts. Through such activities members are able to receive dividends every year. In addition they can borrow money from the group through savings and credit arrangement. Organizing celebrations of PHA day where campaigns against HIV/AIDS spread are normally delivered.

  - Involvement of the Civil society mainly NGOs and FBOs in combating HIV/AIDS. The FBOs mainly monks of Buddhist play key role in fighting the HIV//AIDS Pandemic through: Consolation of the affected (spiritual assistance). Providing moral and material support to orphans especially those who have lost their parents through HIV/AIDS. Delivering HIV/AIDS education to school pupils.

  - Establishment of Day Care Clinics (DCC) with the view to: Providing comprehensive and continuous care to HIV/AIDS patients at each stage of the disease including their family. Increasing HIV/AIDS patient's capacity in self care. Supporting and strengthening PHA groups and peer support (Information and counselling). Co-ordinating service units in government organizations(GO) & NGO.

    - The outcomes of establishing DCC are:

      - PHA and relatives can practice self care & family care from DCC demonstration
      - The PHA group members contribute as volunteers working in DCC and community as care givers and counsellors.
      - PHA empowered to be positive speakers in schools and communities.
      - PHAs got comprehensive and continuous care since DCC act as centre for referral to welfare section, health centre, NGOs and so forth.

From the useful knowledge and experiences gained from our Asian partners, we hasten to recommend that:

(a) The Government through Ministry of Health to provide guidelines on integration of STIs, TB and HIV/AIDS this will facilitate good management of cases;
(b) To make collaboration between the government and private sectors to make available and accessible VCTs to the community vicinity;
(c) Condom use is essential and promotion of condom use in the community should be intensively initiated through multisectoral approach.
(d) Encourage the government and other civil society organizations to establish orphanage centers.
(e) Empowerment of PHA and community sensitization on avoiding stigma and discrimination.
(f) Tanzania should also start income generating activities to PHA;
(g) Care Treatment Clinics in Tanzania should involve family members in education concerning care of PHA in their particular families.

Local Government and other actors in HIV/AIDS control to be sensitized and unable them to conduct operational researches concerning HIV/AIDS control activities.

Other findings apart from knowledge obtained through the sharing are that Thai people are hard working, knowledgeable, very committed, and are ready to co-operate and work with foreigners**.**

2.2.2Creation of New Knowledge

Knowledge co-creation through designing research proposal, and during data analysis; during research design Tanzania side had a broad proposal, through knowledge sharing it was narrowed down to a manageable proposal. When Thai side visited Tanzania data analysis was jointly done together and hence effecting co-creation knowledge.

2.3 Difficulties in Implementation of the PRP

2.3.1 Knowledge Co-creation

(1) Time constraints

Time allocated for the implementation of the PRP was limited to accomplish each activity e.g. the time was very short for discussion to enable come up with the proper conclusion.

(2) We were unable to cope with the co-creation method as it was the first time to come across the co-creation method.

2.3.2 Project Management and Others:

Bureaucracy in signing of contract documents led to delay in implementing the PRP; according to the plan of operation the project was too short in November but due to bureaucracy the project started in January

3 Future Plans After the PRP

First JICA should continue to support the Ministry so that the final output of the PRP which is the guidelines should be accomplished and disseminated accordingly.

Secondly, the study done has revealed that there is still a gap that needs to be filled in terms of knowledge and practice towards fight against HIV/AIDS in the two districts. In particular, condom use is still a stigma among the population, both in rural and semi-urban areas alike, and especially under the disguise of trust among the partners.

It is therefore recommended that a special campaign program be initiated in the two districts, covering both rural and semi-urban areas, main focus being on the following:-

1. An extensive awareness creation on how HIV/AIDS is acquired transmitted and can be prevented. The campaign should focus on educating people through families, schools, peer groups, religious gatherings, public meetings, and other social groups in the community.
2. Escalated campaign on the condom availability and use. Major issues to be addressed include how to make condoms readily available and accessible by all groups of people and of all ages.
3. Identifying vulnerable groups at risk of getting HIV infection and devising ways of helping them either through initiating small scale projects to alleviate their economic status or through establishing recreation centers that will attract youths away from doings that may expose them to the risk of contracting HIV/AIDS.
4. Standard knowledge for Tanzania people on HIV/AIDS
5. Knowledge linking to behavioral modification
6. Afraid of getting HIV infection v.s. Do not discriminate PHA, PHA can live normal life

(Campaign consideration) .

4 Assessment of the PRP

Self assessment will be carried out when the PRP is ready in the sense that its output which is guidelines on HIV/AIDS control is in place and being used by the target groups.

Uganda

FINAL REPORT

POLICY RESEARCH PROJECT
(PRP)
FARMERS' EMPOWERMENT THROUGH CAPACITY DEVELOPMENT OF DOHO RICE IRRIGATION SCHEME FARMERS' ASSOCIATION AND AGRICULTURAL EXTENSION WORKERS
UNDER
ASIA – AFRICA KNOWLEDGE CO-CREATION PROGRAM
(AAKCP-RCDS)

RURAL COMMUNITY DEVELOPMENT SUB-PROGRAM (RCDS)

Under the cooperation between
Ministry of Agriculture, Animal Industry and Fisheries, Uganda
And
Department of Agricultural Extension, Ministry of Agriculture and cooperatives, Thailand

7th July 2006

Ministry of Agriculture, Animal Industry and Fisheries
P.O. Box 102,
Entebbe – Uganda.

Table of Contents

Project Summary: -

1. **Policy Research Project (PRP) Title:**
   Capacity Development of Doho rice Irrigation Scheme Farmers Association and Agricultural Extension workers, under the;

   - Asia Africa Knowledge Co-creation Program (AAKCP)
   - Rural community development sub-program (RCDS)

2. **Project Purpose:** (i) Farmers improve the yield and income from irrigated rice integrated with fish.
   (ii) Suppress rice import through increasing domestic production in environmentally friendly methods.
3. **Target Area**: Doho Rice Irrigation Scheme in Butaleja District
4. **Beneficiaries:** 50 Farmers and10 Extension workers.
   Total: 60 people.
5. **PRP Duration**: 6 months i.e. from December 2005 to May 2006.
6. **PRP Budget**: US $ 41.604 =Ug. Sh.74, 887,200/=
7. **Implementing Organization:** Ministry of Agriculture, Animal Industry and Fisheries **(MAAIF - Uganda).**
8. **Asian Partner** Organization: Department of Agricultural Extension (DOAE) of Ministry of Agriculture and Cooperatives (MOAC), Thailand.
9. **Budget Supporters:** Japan International Cooperation Agency JICA

Introduction:

Poverty is the key problem in Uganda. It is mainly a rural phenomenon with 96% of the country's poor living in the countryside and 39% of the rural population living below the poverty line.

The Agricultural sector has a very big contribution to the National Economy in that 76.5% of the population is employed in this sector and it contributes 85% of the total export earnings.

The employment and incomes from the Agricultural sector are critical not only for eradicating poverty and improving the quality of life but also for generating demand for manufacturing industries, yet the land and labour productivity is very low. Hence, Agriculture has a major role in the Government effort to eradicate poverty, ensure food security and protect the environment.

Therefore, Agriculture has to be transformed from the traditional subsistence oriented farming system towards a more market-oriented production based on knowledge, greater specialization, and farmers' empowerment. Such transformation cannot be achieved without the sound application of modern technologies like irrigation and water management, better agronomic practices, food nutrition, and farmers' empowerment. It was on the basis of the above background that Uganda chose to focus on the issue of farmers' empowerment through capacity development of the farmers' Association and the technical extension staff through training.

The PRP was in line with the National Agricultural Policies and Strategies of Modernizing Agriculture (PMA) and Eradicating Poverty (PEAP). Consequently, Uganda welcomed and appreciated the Asia–Africa Knowledge Co-Creation Program- Rural Community Development Sub program (AAKCP-RCDS) initiated in 2004 and supported by JICA and other Asian partner countries i.e. Thailand, Malasia, Indonesia and Japan. Two seminars were consequently conducted in Japan and Thailand in March and July 2005 respectively. It was through these seminars that the Uganda Policy Research Project (PRP) among other PRPS for the other African participating countries was conceived, developed and formulated. Uganda chose Thailand as its Asian Partner. Actual Implementation of the PRP was from January to May 2006.

Results of the PRP:

The activities carried out during the implementation period were:-

i. Mobilization and sensitization of stakeholders.
ii. Study missions in Thailand and Uganda in January and March 2005 respectively.

iii. Training workshops in various disciplines.
iv. Establishment of a sample fishpond integrated in rice paddy field.
v. Monitoring and evaluation.
vi. Report writing

The above PRP activities yielded the following results:-

i. Both are Field study visit in Thailand and training workshop in Uganda (Doho Rice Irrigation Scheme) increased the knowledge of the participants in areas of Agricultural Production systems, and Irrigation strategies for increasing rice production integrated with fish rearing in paddy fields. Some knowledge and skills were also acquired on group dynamics, Home Economics and Mushroom growing.

ii. The field study visit to Thailand and training workshop at Doho resulted into initiation of a demonstration plot where fish rearing was to be integrated in a paddy field.

Other results of the PRP:-

- Increase in the number of farmers adopting recommended rice cultivation techniques, from 40% to 60%.
- Farmers improved in seed selection, Nursery bed preparation, Timely transplanting, Number of seedlings planted per hill and spacing.
- Farmers' water users committees were formed at Doho Rice Irrigation Scheme comprising of 11 members per block, hence 110 members for the scheme.
- Farmers' trust in the Farmers' Association (DORSFA) improved as indicated by the increase in the number of farmers registering as members, prior to the election of new executive Board of the Association on 23rd May 2006. (i.e. from 5% - 10% and more are expecting to register within this season.
- The participants in the training workshops made joint recommendations for improvement in the management and production at the scheme.
- A Project Proposal Document for Technical Cooperation between Uganda and JICA was formulated.

However, the PRP has not yielded substantial increase in farmers' incomes and this is mainly due to the insufficient training because of the short life span of the PRP i.e. 6 Months. The budget of 41.604 US $ was not sufficient to enable the project management to effectively carry out many trainings to cover more farmers. However, basing on the results so far realized from the PRP, there is need for implementation of a new and bigger project proposal for addressing the problem of the still low incomes of the farmers of DRS and other neighboring schemes.

1. General Information on the PRP

1.1 *Background:*

The PRP identified Low farmers' incomes as being the key problem. The PRP targeted farmers and extension staff of Doho Rice Irrigation scheme in Butaleja District Eastern Uganda.

The causes of this problems were:-

i. Income generation skills and knowledge of farmers are low.

ii. The technical capacity of extension workers is still inadequate due to lack of specialized staff training and the problems are compounded by extension workers' lack of appropriate logistics i.e. transport and demonstration materials.

iii. Weak Farmers' Association due to farmers' lack of trust in the Association and also due to low technical and management skills of the Association leaders.

iv. Farmers' lack of appropriate production and processing tools to enable them have sufficient quantities of high quality products.

Hence, the PRP tackled the above problems by capacity building through Field study visits and training workshop, which were in conformity to the National Policies–Plan for Modernization of Agriculture (PMA), Poverty Eradication Action Plan (PEAP) and National agricultural Advisory Services (NAADS).

1.2 Narrative Summary:-

- Target area – Doho Rice Irrigation Scheme in Butaleja District – Eastern Uganda.
- Target group: Farmers' Association and Group leaders, Key farmers, and technical extension staff. A total of 30 farmers and ten extension staff were targeted but attendance changed from 30 to 50 farmers due to much interest.
- Project purpose

i. Farmers in Doho Rice Irrigation Scheme improve the yield and income of irrigated rice following farmer training and extension approach developed at the scheme.

ii. Rice import of Uganda is suppressed through increasing domestic production of rice in environmentally friendly ways.

Final output:-

A project proposal on technical cooperation between Thailand and Uganda prepared.

Intermediate outputs were:

i. Key stakeholders and target farmer groups were willing to improve management of Doho Rice Irrigation Scheme.

ii. Ugandan Key stakeholders understood the direction of irrigation scheme management.
Extension workers and targeted farmers adopted the contents of training i.e. rice cultivation, rice-fish culture, farmers group dynamics, agro processing.

Activities carried out during PRP implementation were:-

i. Mobilization and sensitization of key stakeholders and target groups.

ii. Field study mission in Thailand where two officials (Commissioner Farm Development and the Manager of Doho rice Irrigation Scheme) and two DORSFA executive members; had a two weeks intensive field visit from 15th to 29th January 2006.

iii. Field study visit and training workshop in Uganda – at Doho rice Irrigation Scheme. Two Thailand experts visited Uganda and facilitated in the training workshop from 19th March to 1st April 2006. a total of 60 people (farmers and extension staff) attended the training workshop.

iv. Establishment of a pilot rice field integrated with fish rearing. The rice field fish pond made is 800 m2 and rice was transplanted when the seedlings were 28 days old- stocking of the fish will be made on 23rd June 2006 (1,500 catfish were stocked at 3 weeks old).

N.B. Over flooding of the scheme due to the broken water control embankment and the blocked spill ways caused a delay in making the rice nursery beds and hence affected timing of the subsequent activities.

v. Monitoring and evaluation.
The Ministry of Agriculture, Animal Industry and Fisheries, the Project Management and Extension Staff of the scheme and the Farmers' Association monitored the progress of the PRP and the adoption of skills and technologies taught during the training.

vi. Reports and reporting. The project management unit was able to make monthly reports on the progress of the PRP. Reports were made for the months January/February, March and April and eventually this report –Final Report.

1.3 Amendments of the plan of operation:

The following amendments were made.

(i) Time for field visit in Uganda changed from February to March 2006 because of the presidential and parliamentary elections which were held in February 2006.

(ii) Number of fish ponds changed from 2 (two) to 1 (one) because of budgetary constraints.

(iii) Number of farmers attending the training workshop changed from 30 (thirty) to 50 (fifty) because of high enthusiasm of the farmers.

1.4 Inputs:

The following inputs were involved in order to ensure implementation of the PRP.

i. Ugandan side:

- Five-counterpart staff as training –facilitators one each for Irrigation and rice cultivation, fisheries, Home Economics and Extension methodology.
- Two project managers i.e. the project coordinator (Manager Doho Rice Irrigation scheme) and the Project Supervisor (Commissioner Farm Development).
- Facilities e.g. training venue, office for resource persons and land for demonstrations.

ii. Thailand Counterpart Side:

- Two facilitators for the training in Uganda. One for rice/ fish culture. Mr. Tharmoon. One for extension- Mr. Surat – He also made arrangements for the Uganda Field study visit in Thailand.

iii. JICA Side: Provided budget support totaling US $41,604. Also provided contact person – Mr. Tomitaka and one facilitator for rice cultivation – Dr. Tsuboi.

Inputs Conducted:

No.	***Planned input***	***Actual input***	***Reason for change***	***Impact on PRP***
1	Facilitators:5 Local and 2 Thailand	As planned	-	-
2	Training venue	As planned	-	-
3	Thirty partner trainees	60 farmers attended training	Many farmers pleaded to be allowed to get the knowledge and skills	More people were trained and hence wider spread of the knowledge
4	Inputs for field study mission in Thailand	As planned	-	-

5	Project budget (US $ 41.604.	As planned	-	-
6	Demonstration materials:- 1. Fish pond (2 ponds) 2.	One fish pond Soil testing kit was purchased though it was not in original plan	Inadequate budget Farmers apply fertilizer on their soils without knowledge of nutrients lacking in the soil. The study visit in Thailand impressed the Ugandan delegation when they met a farmer equipped with a soil testing kit.	Exhibition limited in that area where pond is located. Farmers in the scheme will be applying fertilizer based on which nutrients are missing in the soil.

1.5 Activities implementation:

i. Mobilization and sensitization of stakeholders and target group.

This was carried out from November 2005 up to February 2006, through meetings. It was found out that many people were very much interested in the Project as indicated by the number of farmers requesting to be included in the trainings. This will ensure faster and wider adoption of skills and knowledge in the PRP.

ii. Exchange visits.

These visits were made in Thailand and Uganda. It was found out that Thailand Geographical and environmental conditions were almost similar to those of Ugandan, and yet Thailand had greatly exploited their resources to faster quick economic development. Ugandan delegation learnt the experiences and conditions, which facilitated Thailand to develop faster.

iii. Training of extension workers and farmers at Doho Rice Irrigation Scheme in Uganda.

It was found out that many people have the will to get knowledge and skills is in certain situations affected by lack of relevant facilities like proper tools, proper water control due to

worn out irrigation infrastructure. Hence improvement of the Irrigation infrastructure will lead to faster and wider adoption of PRP inspired skills and technologies.

iv. Training carried out at Doho rice Irrigation Scheme from 19th March to 30th March 2006.

The training was carried out as below:

Topic	*Facilitators*	*Impact*
i. Fish Farming	Mr. Thernoon Boankaison Mrs Faith Wabulya Kiboneka Mr Kilama Teddy	Trainer Appreciated As seen from course evaluation.
ii. Rice cultivation	Dr Tsuboi Mr Sagula Wiberforce	As above.
iii. Extension techniques & Group Dynamics	Mr Surat Sanguansub Dr Mudusu	As above
iv. Home Economics	Mrs Kalule Abby	As above

A field day was also conducted at the Doho Rice Irrigation Scheme. Key Farmers, extension staff and Thailand facilitators guided the farmers during the Field Day activities. Farmers were able to see and learn about the following:-

(i) Impact of rice seedling age at time of transplanting on the crop performance and eventual yield. Farmers found out that seedlings transplanted between 21 and 28 days old give highest yields.

(ii) Impact of Urea fertilizers dosage, on crop performance and eventual yield, Farmers observed plots where dosage of 30,60,90 and 120kg of N per hectare was applied. Farmers found out that 60kg N/Ha leads to good crop performance.

(iii) Comparison of performance of different rice varieties i.e. K98,K85,K5,NAM 1, NAM 3, and NAM 5. Farmers observed that, the old varieties (K98,K85 and K5 were still doing better than the new ones.

(iv) Plant population test. Framers saw plots of rice transplanted at different spacing of 20cm x 15cm, 20cm x 20cm and 30cm x 15cm. It was learned that 30cm x 15cm is good for weeding with Rotary weeders.

(v) Method of getting pure seeds from a rice plot having mixed seeds. Farmers were explained and shown how to get pure seed by sampling a small area of 70sq meters to get seeds for planting 1 acre.

(vi) Rice integrations with fish rearing. Farmers were explained and shown how an ideal rice fishpond is prepared.

The training was very effective and it enabled the trainees to improve their knowledge and skills. The trainees expressed eagerness to practice what they had learned. However, lack of facilities such as credit for starting income generating activities was highlighted as a possible bottleneck.

2. Result of PRP:

2.1 The workshop participants improved their knowledge and skills on rice Cultivation. Adoption increased from 40 to 60%.

Rice Cultivation integrated with fish rearing was sensitized to the farmers and demonstration rice/fish culture pond was set up at Doho Rice Irrigation Scheme.

Three farmers also started preparing their rice plots to have integrated fish-rice farming.

- ❖ Irrigation water users' groups committees were formed as comprising of eleven members per block.
- ❖ Farmers' trust in DORSFA (Association) improved as members increased from 100 to 200.
- ❖ Recommendations were made on ways for improvement in the management and production at Doho Rice Irrigation Scheme.
- ❖ A draft Project Proposal on Technical Cooperation between Uganda and Thailand and JICA was formulated, aiming at increasing incomes of Farmers through integrated Rice Production at Doho Rice Irrigation Scheme.

2.2 Knowledge Co-Creation:-

Knowledge shared with Thailand Partners**.**

2.2.1 Knowledge and experiences learned from the Thailand Partners.

i. Knowledge and experience on Agricultural production having main export crops, and new alternative crops. Agricultural production in Thailand was very well planned, coordinated and facilitated. Extension system was also very efficient covering all parts of the country and Extension staff was well facilitated in term of good remuneration and appropriate transport.

ii. Knowledge and experience on irrigation and water management. Water for irrigation has been given top priority in Thailand as construction and maintenance of the major irrigation infrastructure has been done by Government of Thailand.

Farmers' participation through water users groups and Associations is well established and has led to improved maintenance and operation of irrigation facilities.

iii. Knowledge and experience on rice cultivation. All stages from seed selection up to harvesting and processing were well emphasized.

iv. Knowledge and experience on integration of fish farming in paddy fields. The Field Study visit in Thailand and training workshop in Doho Rice Irrigation Scheme created awareness about this practice, which can greatly lead to increase in the farmers' income and also improvement in the level of Nutrition of the rural people.

v. Knowledge and experience on the King's new Theory of Land and Water Management in which 3 steps were stressed i.e. (a) Land allocation to various uses, (b) Marketing and (c) Value addition through privatization.

vi. Knowledge and experience on income generating projects for women groups. Such projects we visited included; food processing projects like processing and preservation of banana chips, corn milk, vinegar production, silk textile production, mushroom production, vegetables, fruits and flower production projects were also visited..

vii. Knowledge and experience on production of sweet corn, Asparagus and biofertilisers. The study visit in Thailand exposed the Ugandan delegation to knowledge and experience in the production of sweet corn and Asparagus, which are high value crops.

Knowledge and experience provided from the Ugandan Side to the Thailand Partners.

- **Irrigation water control**: There is plenty of water from river Manafwa to facilitate irrigated rice production integrated with fish rearing. However, the irrigation infrastructure in Doho Rice Irrigation Scheme has to be rehabilitated to enable proper and effective water control.
- **Rice Cultivation:** The farmers' of Doho have some knowledge of rice cultivation because they have been growing rice since the Second World War times. Production can be improved by applying the local indigenous knowledge (on rice varieties, palatability and pest and disease resistance) to the Asian knowledge and skills to come up with new production technologies.
- **Cultural Control of Crop pests and diseases**: Farmers of Uganda have indigenous knowledge and skills on use of some local materials like; ash to control crop pests. Some

plant leaves can be crushed and mixed with water, and then sprinkled on crops to control insect pests.

- **Hand crafts**: Women groups have local knowledge and skill of make various types of hand crafts like; baskets, mats, table clothes. They need to supplement their knowledge and skills with that of Thailand to improve their production.
- **The knowledge and experience from Thai Partners** is useful because Thailand and Uganda have almost similar geographical conditions and yet Thailand has made tremendous progress on related areas of rice/fish culture, irrigation and water management, Agricultural production and support to Farmers' groups in generating income through high value enterprises. Modification of existing Ugandan African knowledge by adapting the Asian knowledge into the African knowledge can greatly improve the quantity and quality of production for high-income generation. For example there is a farmer who through trials, has discovered that a certain plant can be crushed, and mixed with water and the mixture can be used to control the notorious pests in paddy fields. Pests so far being targeted are the leeches. So modifying this knowledge and experience by adapting Asian knowledge can lead to Co-creation of new knowledge on such pest control.

- **Additional findings**:
  - Irrigation infrastructure in Doho Rice Irrigation Scheme is faulty. It needs to be rehabilitated in order to have proper water control. Government of Uganda has promised to rehabilitate some critical areas this Financial Year.
  - Presence of fish predators; there are many predators such as the wild birds and foxes which have to be controlled if fish rearing has to succeed. The project management and DORSFA are in process of fencing the pilot rice/fish site to protect the fish from predators.

2.2.2 Creation of new knowledge.

- New knowledge was created for example by applying the existing knowledge on rice cultivation by the farmers of Doho and improving upon this knowledge by adopting of the relevant Asian knowledge and skills. This will increase rice production of high quality.
- People of Uganda and Doho in particular are good eaters of fish and they have been using local methods of catching fish from the river and other water bodies. This interest in fish facilitated creation of new knowledge of rearing fish paddy fields by adapting the Thailand knowledge to improve on the local knowledge. This concept of knowledge co-creation was

successfully implemented because the rice/fish culture pond was successfully prepared, where rice was transplanted and fish introduced in the rice plot.

- Culture of togetherness i.e. group concept has been in existence among the Rural Community in Uganda. This local knowledge was utilized and it eased the adoption and adoption of the Thailand knowledge and skills to set up and strengthen farmers groups such as the water users' committees and the women and youth groups.

2.3 Difficulties encountered in implementing of the PRP.

1. Knowledge Co-Creation.

Knowledge Co-Creation both during the Field Study visits and the training workshops encountered some difficulties as outlined below;

i. Time lag*:* The time for the Field Study visit in Thailand was not sufficient such that the program tight, rushy and it was difficult to have adequate and effective exchange of knowledge and experiences with the Thailand personnel of the areas visited. The most affected areas were;

a) Suphamburi Rice Experimental Station
b) Fish in Paddy Fields rearing in Phimai district.
c) Fish breeding Unit in Kosum phisai district.
d) Narkhon Agricultural Technology Transfer Centre.
e) The Agricultural Messium

ii Logistics: Some materials for facilitating knowledge co-creation were not readily available. For example lack of documented indigenous knowledge.

Communication barrier: This was encountered because many Thailand officials where we visited were not conversant with English language, and hence they could not effectively express their ideas. As a countermeasure, a Thai official was signed to do the translation. Further more, most of the manual, pamphlets and books were written in Thai Language, and therefore they could not be of use to us though they contained very good knowledge. However the Thailand partner organization tried their best to solve the above problem by preparing documents translated into English before hand.

2.4 Problems encountered on project management.

The PRP was successfully implemented. However, the following problems were encountered;

- ❖ Delay in release of project funds.

Project implementation was supposed to start in November 2005 according to the PRP schedule of implementation. Unfortunately the first release of funds was given to the Ugandan Project Management in February 2006, however, the project management managed to go on with the activities of mobilization and sensitization of stakeholders and target farmer groups as planned.

- Change in plan for Field visit to Uganda and training workshops. This was originally supposed to be carried out February 2006. However, was adjusted to 19th March – 1st April 2006. This change was brought about because of the National Presidential and Parliamentary elections which was held in February 2006. This change an impact on the timing of the subsequent operations.
- Inefficiency in irrigation scheme due to the broken water control embankment on the main irrigation canal. This led to serious flooding of the scheme in the month of April and it caused a delay in rice nursery bed preparation and subsequent operations in our demonstration site for the rice/fish culture plot.

  As a countermeasure, farmers were mobilized to repair the affected part by use of bags filled with soil and this improved the situation though not completely. So stocking of fish in our rice field was delayed because this has to done at least two weeks after transplanting the rice. Transplanting was done on 29th May and stocking the field with fish fry is expected to be done by the 15th of June 2006.

- Problems in monitoring and evaluation of adoption of PRP knowledge due to lack of appropriate transport for the project coordinator. A motorcycle could have been appropriate. However, the coordinator (Doho Rice Irrigation Scheme manager) and the supervisor (Commissioner Farm Development) did their best to accomplish the task.
- Delay in receiving guidelines from JICA-Tokyo, report and also for the formulation of the new project proposal. This caused inconvenience in rushing to compile the reports and sometimes submitting those reports without fulfilling the deadlines set.
- Delay in reports compilation and submission due to the frequent electricity power failures. As a countermeasure we had to use places with standby generators and these charge highly.
- Lack of power-point project for use during the training workshop and also for other subsequent trainings. As a remedy Mr. Tomitaka lent us his personal projector for use during the training workshop. However, there is need to have one for the scheme since we usually have many farmers training.
- Lack of digital cameras. We were requested to accompany all PRP reports with pictures or photographs of some of the PRP activities. However, this has not been possible because of lack of the cameras.

3. Future plans.

- Implementation of the new proposed project.

Implementation of the new proposed project which will focus on increasing Farmers rice yields and incomes through strengthening Farmers' groups and Associations, agricultural extension systems, appropriate farm machinery for proper and timely land preparation

- Capacity building of extension staff and farmers through training work shops, field visits and field tours.
- Improvement on institutional set up through strengthening Farmers Association, Women and Youth groups and Water users' committees.
- Improving on rice yields through adoption of recommended rice cultivation techniques.
- Enhancement of rice cultivation integrated with fish rearing.
- Setting up of a rice seed community centre in order to improve on the quality and purity of rice planted.
- Utilization of animal power and small tractors for proper and timely land preparation.
- Production of manuals for farmers and extension staff in the fields of rice cultivation integrated with fish, water management, mushroom production, aquaculture and value addition through agro processing.
- Establishment of an agricultural technology transfer centre for purposes of training and guiding farmers and extension staff.
- Extending the benefits of the project to near by out grower schemes in Butaleja districts and beyond.

4. Assessment of the PRP.

4.1 Relevancy: -

The PRP was relevant in that it focused on the important issue of capacity building among the Farmers' Association leaders, extension staff, key farmers and some selected farmers. It was anticipated that this capacity building would lead to improvement in the management and production level of Doho Rice Irrigation Scheme.

Consequently, the key problem of low incomes of the farmers is to be tackled by ensuring high rice/fish yields of high-grade quality.

The PRP was also relevant in terms of the target groups and area. Doho Rice Irrigation Scheme was suitable for the PRP because of the following:-

(i) The availability of potential suitable requirements for integrated rice cultivation with fish rearing. This is mainly because of the presence of permanent water source (River Manafwa) which is necessary to provide water for the fish.

(ii) Presence of suitable fertile sandy clay soils also provides a suitable environment for rice cultivation and also for rearing fish.

(iii) The interest and will of the farmers in rice farming contributed to knowledge co-creation by adding the Asian knowledge and skills to local indigenous knowledge to create new knowledge.

(iv) The PRP was line with the Government Development Policies like the Poverty Eradication Action Plan (PEAP). Plan for Modernization of Agriculture (PMA) and the National Agricultural Advisory Services (NAADS). The logistics of the PRP i.e inputs, outputs expected, target group were appropriate. The final output (new project proposal) is very much valid for future development of the target area to be implemented as a model project and to be expanded to cover other farmers within the scheme area and beyond.

(v) The PRP project management personnel were available and showed dedication to project work through out the PRP life span.

4.2 Effectiveness:

The PRP has been effective in that the planned final output has been accomplished. A draft project proposal on increasing incomes of farmers of Doho Rice Irrigation scheme through integrated rice production, under technical cooperation between Uganda, Thailand and JICA, has been made. The Government and stakeholders supported the PRP.

The factors, which facilitated effectiveness of the PRP are outline in 4.1 above i.e. from (i) to (v).

4.3 Efficiency:-

The PRP was implemented with commendable efficiency as evidenced from inputs, which were injected in the project. These inputs included: -

- The facilitators for the training workshops. Both Thailand and Ugandan facilitators performed well as expected.
- Arrangements for the Field Study visits. This was very well arranged. Thanks go to JICA, Department of Agricultural Extension in Thailand and Uganda – Ministry of Agriculture Animal Industry and Fisheries for the good coordination.
- Project funding; 41.606 U$ was injected in the project and it was utilized to implement the PRP activities as planned.
- Timing of the inputs was appropriate as they were utilized to produce the planned out puts. However, the money for demonstration materials was inadequate, and so it wasn't possible to make a second fishpond as it had been planned.

4.4 Impact of the PRP.

The PRP had positive impacts for example;

(i) Many farmers appreciated the importance of integrated rice/fish farming. So far three (3) farmers had started making fish ponds in their rice fields. Many more have indicated adopting the practice in the subsequent seasons.

(ii) The PRP demonstration fish/rice culture plot got established.

(iii) Adoption of PRP training packages by farmers increased to 60% i.e. adopting recommended rice cultivation techniques, leading to getting higher yields and better incomes.

(iv) The management of the scheme was improved as a result of the improvement in the performance of the Farmers' Association and putting in place irrigation water users committees.

(v) A strong women's group of 50 members was formed at Doho Rice Irrigation Scheme.

(vi) The PRP enhanced the Government implementation of policies like the Poverty Eradication Action Plan (PEAP) and the Plan for Modernization of Agriculture (PMA).

4.5 Sustainability: -

The benefits of the PRP will continue to be utilized even after the end of the PRP. Details of how this sustainability is to be achieved are as below;

(i) Staff and farmers ensuring that the fishpond site is well protected from predators.

(ii) Staff, DORSFA and key Farmers publicizing the results of the practice emphasized in the PRP. The pilot rice/fish culture project initiated by the PRP will be developed by expanding it to cover more farmers by at least having (two hundred) 200 rice/fish acre plots and two (2) ordinary fish ponds in the scheme by the end of 2007. The benefits of the PRP will be sustained (continued) through involvement of all the local Sub-County districts and National

(iii) DORSFA providing the funds for the fish/rice plot up to harvest time. This is especially with regard to purchase of fish feeds as those bought by PRP funds may not be enough.

(iv) Administrative and political leaders in sensitizing and mobilizing the farmers and providing financial and technical back up where necessary.

5. Lessons learned as a result of the PRP.

- PRP Time Frame (duration) was too short.
- Awareness on local knowledge was realized
- Approach of AAKCP (study missions enabled participants to observe and gain more knowledge and experience
- Process of knowledge co-creation takes a long time than anticipated

- Knowledge is not new the problem is how to adopt that knowledge to suit the local conditions
- Participants were able to learn and improve on their skills on project formulation
- There is need to have an efficient, adequate and well facilitated extension service.
- Farmer's participatory approach in management, operation and maintenance of irrigation infrastructure is of paramount importance for good scheme management.
- Capacity building through trainings (both staff and farmers leaders), Field visits, Farm tours is a pre-requisite for causing a change in farmers production levels and hence improvement in their living standards.
- There must be a strong Farmers' Association to which all farmers must be registered as members.
- There must be a strong water users Association.
- Irrigation fee paid per acre has to be increased.
- The funds injected into the PRP by JICA will be justified by farmers adopting the knowledge and technical skills in order to cause a reasonable economic status of the farmers.

6. References: -

i. The PRP document.
ii. Report on Study visit in Thailand.
iii. Report on Study visit and training workshop in Uganda.
iv. PRP Monthly Reports.
v. New Project Proposal Draft.
vi. Manual for Uganda Field visit to Thailand.

7. Annexes

(i) Project Design Matrix
(ii) Plan of operations
(iii) Implementation structure of PRP
(iv) Budget for implementation of PRP.
(v) Organogram for Doho Rice Irrigation Scheme
(vi) Materials and information obtained from Thailand Partners

ANNEX 1. PROJECT DESIGN MATRIX (PDM)

(1) Outcomes after the Project.

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
(Overall goal) **1. Farmers in Doho Rice Irrigation Schemes improve the yield and income of irrigated rice integrated with fish rearing following farmer training and extension approach developed at Doho Rice Irrigation Scheme.** **2. Rice import of Uganda is suppressed through increasing domestic production of rice in environmentally friendly manners.** **3. Food Nutrition improved**	**- Household incomes** **- Rice production data** **-Rice trade data** **-Fish production data** **- Fish consumption data** **- Fish trade data**	**Survey report** **Statistic data**	**The will of the Government and farmers on improving rice-farming community maintained.**
(Expected outcomes of the final outputs) **A project proposal on cooperation between Uganda and JICA for comprehensive rehabilitation of Doho Rice Irrigation Scheme.**	**- Both Governments and stakeholder farmers support the idea.**	**Questionnaire**	**There is no drastic drop of rice and fish price.**

(2) Achievements within the period of the Project.

Narrative Summary	Important Assumption
(Final Outputs) **In Doho Rice Irrigation Scheme:** **1. Management of the Scheme Office and the Farmers Association is improved.** **2. Incomes of rice production farmers are increased.** **3. Rice-fish culture is established.**	**Doho Rice Irrigation Scheme is jointly managed by the Government and the Farmers Association.**
(Activities to produce Final Outputs) **1. Monitoring the adoption of the contents of training by the ex-participants.** **2. Evaluate the short-term impacts of the training among ex-participants and other farmers.** **3. Preparation of a project proposal for impacts of interventions to other farmers of Doho Rice Irrigation Scheme and to have comprehensive rehabilitation of the scheme..**	

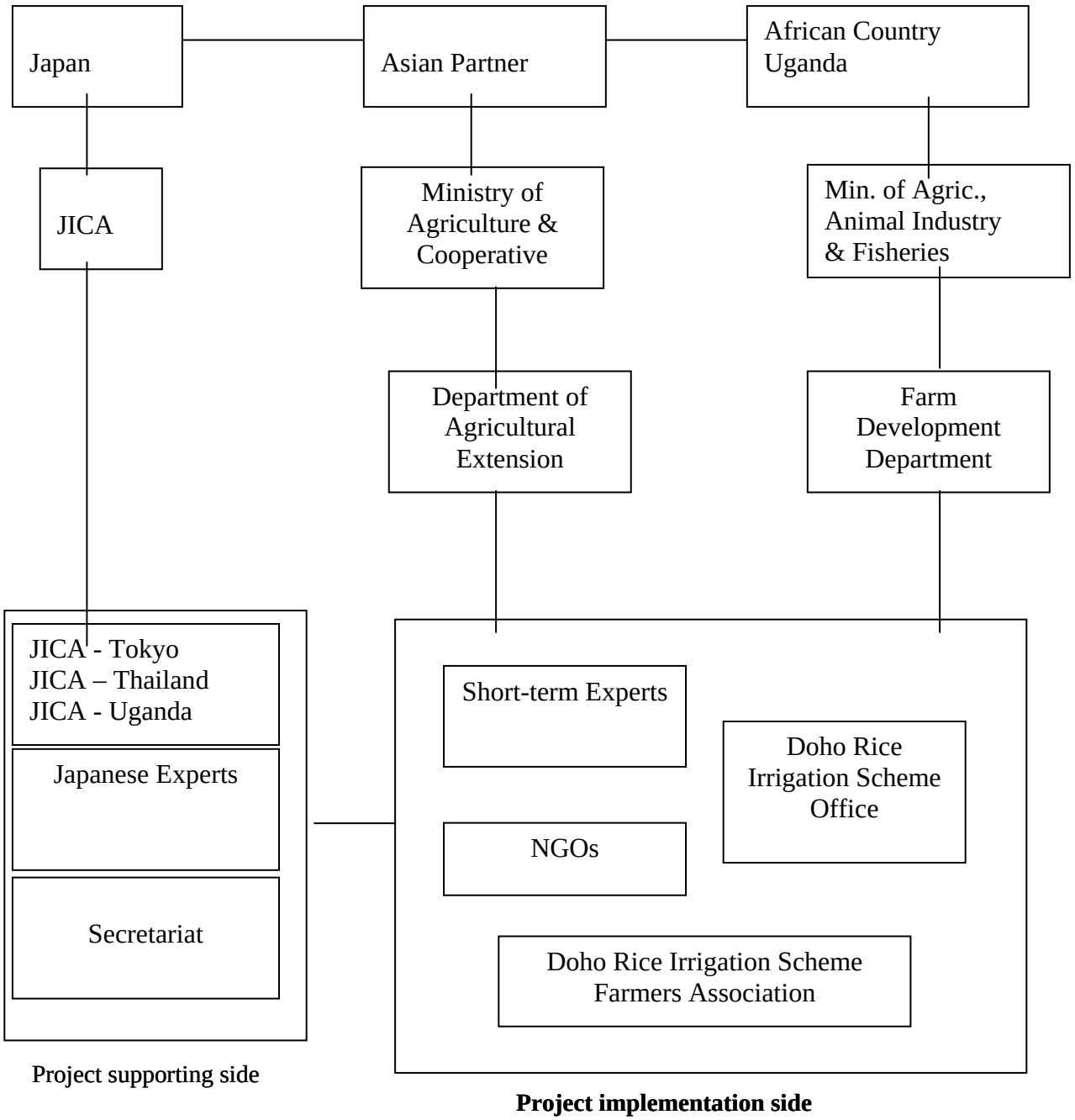
(Intermediate outputs) **4. Key-stakeholders and target farmer groups are willing to improve management of Doho Rice Irrigation Scheme.** **5. Ugandan key-stakeholders understand the direction of irrigation scheme management** **6. Extension workers and selected farmers adopt the contents of training (e.g. farmers association, rice cultivation, rice-fish culture, agro-processing).**	
(Activities to produce Intermediate Outputs) **1. Mobilization of stakeholders** **1.1 Consensus building among key-stakeholders** **1.2 Identifying target farmer groups** **2. Exchange visits of Ugandan key-stakeholders and Thai experts** **2.1 Ugandan key-stakeholders visit Thailand for acquiring knowledge and experiences of sustainable development of irrigation project (6 persons including 3 farmer representatives)** **2.2 Thai experts visit Uganda for training (3 persons including an expert in fish-rice culture development)** **3. Training of extension work and selected farmers (totally 400 persons participate for 2 weeks)** **3-1 Develop extension pamphlets** **3-2 Workshop for extension workers** **3-3 Training for selected farmers** **3-4 Support the activities of ex-participants**	Inputs Uganda • **Counterpart staff (5) i.e. irrigation, rice cultivation, fisheries, home economics and extension delivery** • **Facilities: Training venue at Doho Rice Irrigation Scheme excluding accommodation of participants** • **Office for resource persons** Thailand • **One resource person for extension methodology (farmers association)** • **One resource person for fish farming in paddy fields** • **Arrangement for a study tour** JICA • **Budget support: US$200.000 (within the limit of 5 million yen)** • **One resource person on rice cultivation techniques and water management** • **One contact person for coordinating between JICA offices and the Project Administrators**

***Notes:**

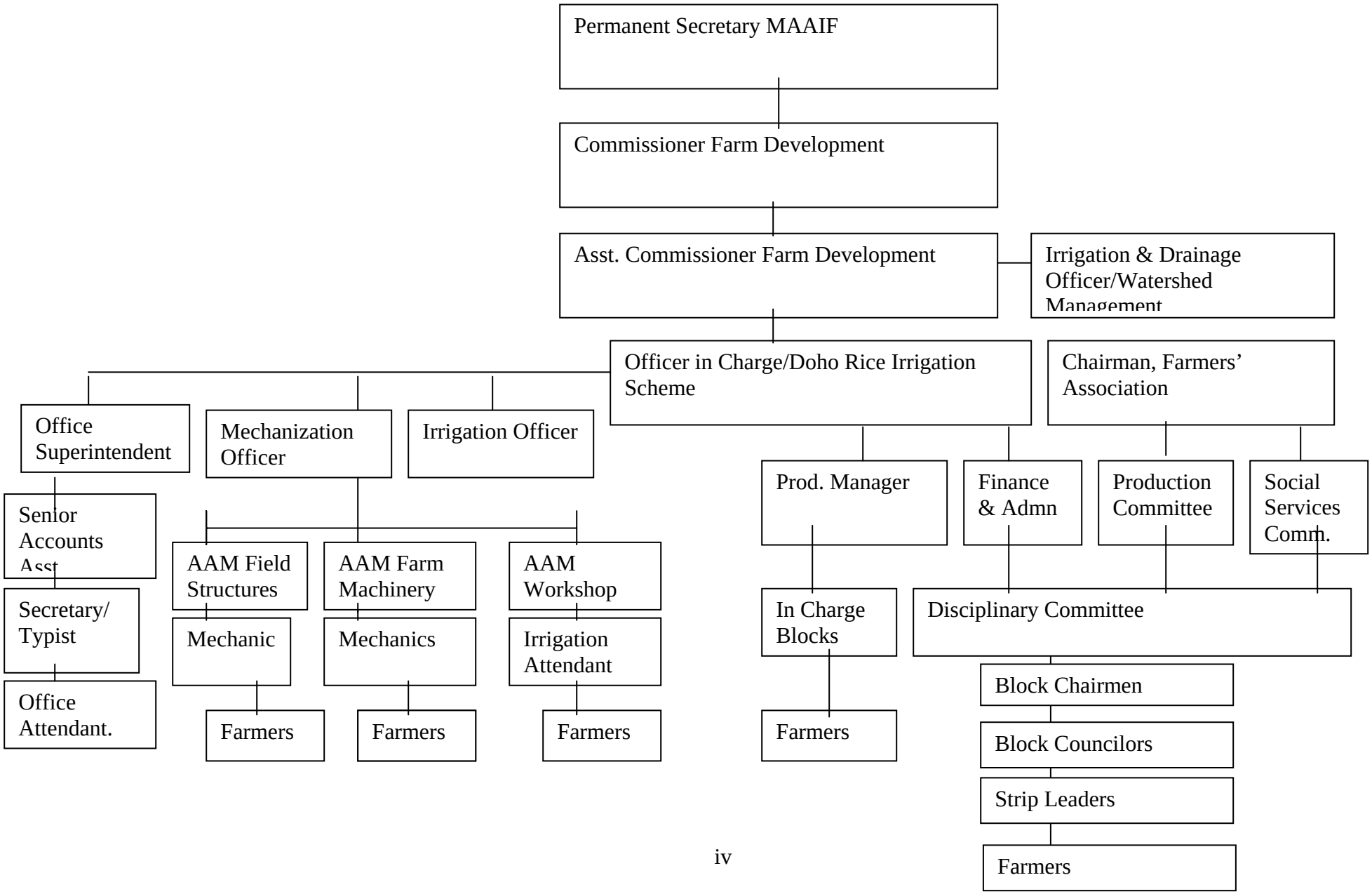
(1) The PDM is subject to modification in due course of its implementation (if necessity arises).

(2) Contributions from the Farmers Association on possible resources are expected.

ANNEX 2. IMPLEMENTATION STRUCTURE OF THE POJECT.



ORGANOGRAM OF DOHO RICE IRRIGATION SCHEME



Materials and information obtained from Thailand Partners.

(i) Knowledge on rice-fish culture
(ii) Knowledge on value addition to banana, maize by women groups
(iii) Knowledge on group dynamics
(iv) Knowledge on soil improvement by use of organic and inorganic fertilizers (compost and Farm yard manure)
(v) Training manual for Uganda field study mission to Thailand
(vi) Soil fertility testing kit
(vii) Manual on agricultural extension system in Thailand
(viii) Knowledge on Agricultural production in Thailand
(ix) Knowledge experience on irrigation and water management
(x) Manual for Uganda Field Study Mission to Thailand Knowledge on rice-fish culture
(xi) Knowledge on value addition to banana, maize by women groups
(xii) Knowledge on group dynamics
(xiii) Knowledge on soil improvement by use of organic and inorganic fertilizers (compost and Farm yard manure)
(xiv) Training manual for Uganda field study mission to Thailand
(xv) Soil fertility testing kit
(xvi) Manual on agricultural extension system in Thailand
(xvii) Knowledge on Agricultural production in Thailand
(xviii) Knowledge experience on irrigation and water management
(xix) Manual for Uganda Field Study Mission to Thailand

Zimbabwe

ZIMBABWE POLICY RESEARCH PROJECT (PRP)

CAPACITY BUILDING FOR AGRICULTURAL EXTENSION IN ZIMBABWE

FINAL REPORT

ASIA – AFRICA KNOWLEDGE CO-CREATION PROGRAM: RURAL COMMUNITY DEVELOPMENT SUBPROGRAM (AAKCP-RCDS).

MINISTRY OF AGRICULTURE (ZIMBABWE)

And

KASETSART UNIVERSITY (THAILAND)

Supported by

Japan International Cooperation Agency (JICA)

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2.0 Summary

Agriculture is the driving engine and backbone of the Zimbabwe economy and the majority (about 70 percent) of the country's population lives in rural areas. Most of rural residents depend directly on agricultural activities for employment and income generation. It follows therefore that raising production and productivity of Agriculture, particularly crop production, is fundamental for raising the standard of living of the average person in the rural community and the agricultural sector. Since the attainment of independence by Zimbabwe in 1980, there has been general emphasis on agricultural commodities and technologies suited to small-scale farming in rural communities but agricultural production has not responded adequately.

Agricultural extension has been identified as a vital driving force for agriculture rural community development in Zimbabwe. Extension workers, who are the agents for development as they attend to and deal directly with problems facing farmers, are themselves facing problems of lack of reference materials such as operational manuals for use during training of farmers in various aspects of farming. To respond to this problem, Zimbabwe is participating in the JICA funded Asia-Africa Knowledge Co-creation Program: Rural Community Development Sub-program (AAKCP_RCDS) with the aim to producing an operational manual for the extension workers, starting with Masvingo Province. The Policy Research Project (PRP) entitled "*Capacity Building for Agricultural Extension in Zimbabwe*" has been implemented with collaboration from Kasetsart University and Ministry of Agriculture and Cooperatives of the Kingdom of Thailand and JICA Regional Support Office based in Kenya.

Implementation of the Zimbabwe PRP began in February with preparations for an operational manual (OM) stakeholder workshop which was then held in March in Masvingo Province. The workshop coincided with the study visit to Zimbabwe by a three member team from Thailand's Kasetsart University (KU)and Ministry of Agriculture and Cooperatives (MOAC). The Thai experts were taken on a two-day field tour of the province to familiarize them with the agricultural (especially extension) and farming systems of Zimbabwe before they participated and significantly contributed during the three-day workshop. During the field tours, the Thai team identified challenges facing the agricultural system in the project area and proposed three areas for further collaboration between Zimbabwe, Thailand and JICA as follow-up to the AAKCP-RCDS. These ideas were refined into two project proposals for further collaboration between Zimbabwe and Thailand.

It was during the workshop that the output of the Zimbabwe PRP (an Operational Manual for field extension staff) was formulated. Drafting of the manual commenced soon after the workshop and the first draft was completed by end of April and was distributed to stakeholders including the Asian Partner Organization (APO) for comments and amendments. A study mission from Zimbabwe was dispatched to Thailand at the beginning of May 2006 to learn about the Thai Agricultural system and

discuss the OM and the modalities for further collaboration between the two countries. Comments were obtained from the APO and JICA and these have been incorporated into the final output of the PRP. Two project proposals are being formulated by the Zimbabwe side for joint implementation with the APO as an area for further collaboration between Zimbabwe and Thailand.

3.0 General Information of the PRP

3.1 Background of the PRP

The majority of the Zimbabwean population is dependant on agriculture for employment and income generation with about 70 percent of this population resides in rural areas and earns a living largely from agriculture. It follows therefore that raising production and productivity of Agriculture, particularly crop production, is a major condition for raising the standard of living of the average person in the rural community and the agricultural sector of Zimbabwe in general. Since the attainment of independence by Zimbabwe in 1980, there has been general emphasis on agricultural commodities and technologies suited to small-scale farming in rural communities but agricultural production has not responded adequately.

Zimbabwe embarked on a massive Land and Agrarian Reform Programme in 2000, meant to redress the colonial injustice and imbalances in landholding between the minority settlers and the indigenous people. The programme has seen may landless Zimbabweans being resettled on prime agricultural land and the subsequent easing of pressure on communal lands and other resources. Many new farmers emerged due to the land reform and these require skills for profitable and sustainable farming. These farmers therefore need direct technical guidance from extension agents in order to achieve higher yields above the subsistence levels. The current extension worker to farmer ratio of 1:800 has undoubtedly been overwhelmed by the demand for technical assistance by farmers, the majority of whom are still new in the field. The current ratio makes it difficult for the extension worker to pay attention to the individual farmer as an exclusive approach.

There are various constraints and challenges facing the smallholder farmer community in Zimbabwe amongst which shortage of skilled extension staff ranks top. There is a shortage of skilled man power in the agricultural sector in general while the need is high to strengthen and broaden extension services to enable them to adequately respond to the needs of farmers, particularly smallholder farmers. The normal training programme for extension workers takes a lot of time, hence the request by the Department of Agricultural Research and Extension Services (AREX) for the Government to introduce apprenticeship programmes to fast-track the training. The current extension worker to farmer ratio makes it difficult for the extension worker to pay attention to the individual farmers as an exclusive approach.

AREX has not been able to extend its services to all the farming areas, thereby generating discontent among farmers. Sometimes farmers ended up taking wrong decisions during crisis situations thereby compromising on their ability to cope and produce. Responding to this demand, the government recently approved apprenticeship training for extension workers in a bid to reduce the extension worker to farmer ratio to reasonable and productive levels. The Agricultural Extension Apprenticeship Trainees lack operational manuals and extension guidelines for reference while on training. The same also applies to Agricultural College students employed to work as extension workers, especially in relatively new areas.

3.2 Narrative Summary of the PRP

The target areas for the PRP were initially Masvingo and Manicaland Provinces. It was later decided that the project be implemented in Masvingo province alone due to the short timeframe and budget constraints. Masvingo Province is located in the marginal south eastern part of Zimbabwe and it is vital that the project in its targeting contributes meaningfully to the development of the rural communities this drier region. The direct target group of the PRP are frontline extension workers who are interact with farmers more frequently as they conduct their daily duties. There are about 300 extension workers in the province. All extension workers lack adequate and comprehensive training materials for use when assisting farmers in solving their problems. The project has therefore targeted all categories of extension personnel from established to trainees.

The overall goal or purpose of the PRP is to raise the standard of living in rural areas of the country, beginning with Masvingo province. The indirect but important beneficiaries in this project are the farmers themselves, whose livelihoods need improvement. The standards of living for the rural communities are expected to improve as the capacity of their agents of development (extension workers) is developed. Capacity development of extension workers enhances effectiveness and efficiency in their execution of duties which mainly involve dealing with problems of underdevelopment, low agricultural productivity, food insecurity and poverty in rural areas. The final output of the project is an operational manual for field extension workers, which guides them during their training of farmers in various aspects farming.

Activities of conducted to achieve the final outputs included the following:

- Establishment of a Project Implementation Unit in the project area.
- Formulation of the plan of operations.
- Knowledge exchanges with the Asian partner organization through exchange visits.
- Conducting the Agricultural Extension Capacity Building Workshop in the project area.
- Formulation and drafting of the operational manual.

- Sending the draft manual to the Asian Partner Organization for comments and editing.
- Incorporation of the comments and finalization of the document.
- Printing of initial copies of the draft manual.
- Final stakeholder consultation (receiving feedback from extension workers)

The inputs came from the Zimbabwe side (coordination), Thai side (technical support and advice), and JICA side (financial and technical support). The Ministry of Agriculture coordinated the activities of the project with all the stakeholders. The visit by the Kasetsart University opened up discussions on the roles and expectations of stakeholders concerned with the project. The Asian Partner Organization provided technical expertise and advice during the formulation to the implementation of the project. They were consulted from time to time for advice during the course of the project. The JICA side provided financial resources to finance activities undertaken during formulation and implementation of the project. Besides financial resources, JICA also provided technical expertise through the Regional Support Office for Eastern and Southern Africa.

3.3 Amendments of the Plan

The initial plan of the Zimbabwe PRP was to target two areas for implementation (Masvingo and Manicaland provinces) and cover about 500 extension workers. The plan was later amended for the project to be implemented in Masvingo Province alone and to cover about 300 extension workers. The project also intended to produce two outputs, an operational manual and a training program for agricultural extension workers but plan for the training program was later dropped. These plans were not met due to the constraining implementation timeframe and the budget constraint. According to the plan, the project was supposed to wind up at the end of May 2006 but this was not achieved as some project activities such as printing and distribution of the Manual are still pending. The printing and distribution will be conducted early July.

3.4 Inputs Conducted

Zimbabwean Side:

- Ministry of Agriculture coordinated and implemented the activities of the project through provision of project personnel. Three officers from the Head Office coordinated activities of the PRP and six personnel from the project area drafted sections of the manual while two provincial authorities coordinated project activities at the provincial level.

Asian Side:

- Three Experts from Kasetsart University (2) and MOAC (1) of Thailand visited Zimbabwe to assist in the initial stage of developing the OM.
- The experts were from time to time for technical support consulted until finalization of the PRP products.

JICA Side:

- JICA provided financial support to the project to the tune of ¥5 million (approximately US$50 000).
- JICA expert in AREX (Mr. Yoshitake Shimbo) and JICA Regional Support Office for Eastern and Southern Africa (two Experts) provided technical expertise to the project.

3.5 Activities Implemented

The major activity of the Zimbabwe PRP was an Agricultural Capacity Building Workshop, which was held at Kyle View Holiday Resort in Masvingo under the Asia-Africa Knowledge Co-Creation Program – Rural Community Development Sub-program (AAKCP-RCDS) which is being funded by JICA. The aim of the workshop was to produce, in collaboration with Asian partner organization, an Operational Manual for agricultural extension staff in Masvingo Province. The workshop attracted participants from Field Extension staff, Agricultural Research Stations, other Agricultural Departments in Masvingo, Agricultural Colleges, AREX Provincial and Head Office, JICA Zimbabwe Office, JICA Regional Support Office for Eastern and Southern Africa in Nairobi-Kenya, the Embassy of Japan in Zimbabwe and Thailand's Kasetsart University and Ministry of Agriculture and Co-operatives.

Draft sections of the operational manual were produced during the workshop and work on completion of the manual was undertaken by a provincial team selected at the workshop. The manual was drafted and consolidated before the end of April 2006 and sent to Thailand for editing and comments from the Asian partner organization (KU).

Two days before the workshop, the visitors were taken on field tour of the province. The field tours were meant to have the Thai and JICA Experts familiarize themselves with the farming systems in the project area and also to observe agricultural extension workers at work. It was during the field tours that the Thai Experts identified challenges facing the agricultural system in the area and proposed three areas for further collaboration between Zimbabwe, Thailand and JICA as follow-up to the AAKCP-RCDS. These areas are:

i) Community Based Development (CBD) for Agricultural Extension System in Masvingo Province,
ii) Maize Seed Development Project, and
iii) Food Security for Poverty Alleviation at Community Level.

These three ideas were consolidated into two project proposals for possible funding by JICA after the PRP, with the assistance of JICA Project Formulation Advisors.

Three AREX officials from Masvingo Province then undertook a one-week study visit to Thailand

(exchange visit) from the 8th to the 17th of May 2006. The following officers were nominated for the study visit: Mr N. Pambirei (Provincial AREX Officer), Mrs M. Kwanai (Agronomist) and Mrs N. Takawira (Head of Chiredzi Research Institute).

4.0 Results of the PRP

4.1 Summary of the Output

The output of the Zimbabwe PRP is the Agricultural Extension Operational Manual meant to aid field extension personnel in their day-to-day interaction with farmers. The OM is comprised mainly of three sections namely, the Crops, Livestock, and the Agricultural Engineering and Economics Sections that dwell mainly on the agronomic, animal husbandry, and farm practices in general.

4.1.1 The Crops Section

This section covers crops that are mainly grown in the project area and in communal areas of Zimbabwe in general. All the agronomic issues involved with each crop are described and explained in greater detail for easy understanding by the field extension personnel. The crops section is further subdivided into Cereals, Small Grains, Cash Crops, Oilseeds, and Horticultural Crops. Under each crop such agronomic aspects as Optimal Growth Requirements, Cultivar Selection, Land Preparation, Fertilization, Weed Control, Disease and Pest Control, Harvesting, Packaging and Storage are described. The following crops have been included: Maize and Wheat (Cereals), Sorghum, Finger and Pearl Millets (Small Grains), Cotton (Cash Crops), Groundnuts, Soyabean, Jatropha and Sunflower (Oilseeds), and Leafy vegetables, Fruit vegetables and Tuber/Bulb and Root crops (Horticultural Crops).

4.1.2 The Livestock Section

This section looks at the general husbandry aspects of livestock production and development. The Livestock Section is comprised of ten subsections, which are:

i) Cattle Production and Management, which describes and explains the general techniques of proper rearing of cattle on smallholder farms,

ii) Dairy Production – looks at the best practices that extension workers should know and be able to teach farmers for hygienic and profitable milk production,

iii) Calf Management – focuses on the management techniques that should be followed by farmers to reduce mortality rates and hence improve the national herd,

iv) Pig Production – touches all aspects of proper and profitable pig production,

v) Poultry Production – encourages imparting of relevant skills to farmers for viable poultry production.

The other subsections under the livestock section include, vi) Sheep Management techniques, vii) Goat Management Techniques, viii) Rabbitry, ix) Aquaculture (the rearing of fish), and x) Apiculture (the raising of bees).

4.1.3 The Agricultural Engineering and Economics Section

This section has an Agricultural Engineering section which describes the various types of farm equipment that can be used by smallholder farmers. Aspects of utilization, storage and maintenance of these farm machinery and implements are described explained. A subsection on Soil and Water Conservation has been included to describe the various conservation techniques that farmers can be encouraged to use to conserve their natural resources for sustainable agricultural production. The third subsection is on Agricultural Finance and Marketing, which dwells much on farm records keeping, credit accessing and debt servicing. It also looks at the production economics and marketing issues of agricultural commodities. The final subsection considers the main issues concerned with irrigation development.

4.2 Knowledge Co-creation

4.2.1 Knowledge Shared with the Asian Partner Organization

The participation of Thai resource persons at the Agricultural Extension Capacity Building workshop opened up new ideas on Agriculture and Rural Development policy and programs implementation. Presentations were made by both the Ministry of Agriculture and Cooperatives and Kasetsart University experts at the workshop on their experiences in Thailand. Much emphasis was put on agricultural extension as a vehicle for community development. It was noted that intervention for the purpose of development or problem solving in rural communities can only be done through agricultural extension since it is the only public service that has personnel at the grassroots level. It was shared that farmers are an important component of the agricultural research and extension system in any agricultural system. They (farmers) should therefore be involved at all the stages of the research and extension process i.e. from planning through implementation to dissemination of information and technologies (participatory approach). Extension workers will be encouraged to engage farmers in planning their duties for their operations to succeed. This idea will enhance research and extension service delivery in the agricultural sector of the country.

The comprehensive OM is a new concept to Zimbabwe and is a product of active participation and contributions from both the Thai and Zimbabwe sides. Several comments, such as how user-friendly the manual should be, were given by the Thai experts during the formulation and drafting of the manual. The new ideas contained in the manual were developed and modified to suit local conditions

since in some cases, some aspects of agricultural operations, such as use of draft power, were found to be different. In Thailand, buffaloes are used as draft power while in Zimbabwe cattle and donkeys are used. This also implied that the implements used with these animals tend to differ to some degree. The OM produced is expected to contribute immensely to the development of capacity for extension workers. Even though some manuals obtained in Thailand could not be read, these contained some pictures and illustrative diagrams which may give alternative explanations. It is said that a picture explains a thousand words.

From the Thai experience, it was noted that linkage between the political, agricultural research & extension, and farming systems has great implications on the development of agriculture. This is a concept which is being proposed for introduction as policy recommendations to policy makers in Zimbabwe for adoption and incorporation into the mainstream policy.

4.2.2 Creation of New Knowledge

The comprehensive operational manual is relatively new concept to Zimbabwe. The familiarization with the Zimbabwe situation by the resource persons from Thailand led to close analysis of the problems facing agricultural extension. The major problem was discovered to be lack of reference materials by extension workers when they conduct training with farmers. Several crop and product specific handbooks were found to be available but these were not user friendly and as comprehensive and all-encompassing as the one that was later advocated for during the study visit to Zimbabwe. The manual was then designed taking into consideration ideas from the experience in Thailand where extension personnel make use of such manuals to effectively conduct their duties.

The visit also led to identification of two project ideas for intervention in rural community development problems in Masvingo province. The Thai experts were taken on a guided field visit in three districts in Masvingo province to observe extension personnel at work and generally to familiarize themselves with the farming systems and other agricultural activities being undertaken by the farmers. Recommendations were made after the field tours to suggest solutions and intervention methods to these problems. The solution was suggested in the form of two project proposals as a follow-up to the AAKCP. The two project proposals are as follows:

i) Project for Establishment of Integrated Farming Model in Rural Communities of Masvingo Province. This will be a two year project aimed at establishing an integrated livestock-fishery-crops production or farming model in a village for the purpose of upgrading food security at the household and community level. The project shall involve training of Zimbabwean Extension workers in Thailand or on-job training in their areas.

ii) Project for Rural Community Development. This will be a three-year project aimed at

establishing a model of Local Community Development through participatory approaches to improve the livelihoods of rural communities. The project shall involve the training of extension workers in Thailand, Zambia or Zimbabwe through on-job training.

These two projects shall entail collaboration among Zimbabwe, Thailand and JICA through dispatch of JICA third country experts from Thailand and or Zambia to assist in implementation of the projects and conduct training programs for the extension workers and farmers in Zimbabwe.

The Thai agricultural research and extension system is being tested to the Zimbabwe context, with modification, especially the leading farmer concept. This may be helpful in tackling agriculture and rural development problems in Zimbabwe. The Thai Agricultural and Rural Development programs have been very successful; if these could be adapted to the Zimbabwean situation rural community development problems could be tackled.

4.3 Difficulties in Implementation of the PRP

4.3.1 Knowledge Co-creation

No major difficulties were encountered during the course of the Zimbabwe PRP, which might have resulted in termination of the project. Exchange visits with our Asian Partner Organization resulted in the discovery that climatic conditions are quite different between the two countries. These may require that some modifications be undertaken to adapt the Asian systems to our local systems. Thailand is much wetter and receives more rainfall than Zimbabwe. This makes the agricultural systems in the two countries different, for example, rice is the most important crop food crop grown in Thailand while in Zimbabwe it is maize, and while cattle and donkeys are used for draught power in Zimbabwe, in Thailand they use buffaloes.

It will be difficult to exchange crop varieties and other germplasm as there are biotechnological regulations that need to be complied with, especially in Zimbabwe. Some Asian technologies require highly sophisticated equipment and machinery which may not be available in Zimbabwe. These require a bit more time for adaptation to local conditions in Zimbabwe as personnel may need training on how to operate and utilize the equipment and implements. Currently, the country will depend on the knowledge and experience of the trio that visited Thailand in disseminating these new technologies and modifying this new knowledge to suit the conditions that prevail locally. There are some communication barriers being posed by difference in ways writing between the two countries' agricultural systems. Most documents in Thailand such as operational manuals and food processing handbooks are written in Thai, which makes it difficult for Zimbabweans to understand. Culture and religion are different between Zimbabwe and Thailand. It will be difficult for some practices such as

the volunteer lead farmer to be fully adapted to the Zimbabwe situation due to different cultural practices.

4.3.2 Project Management and Others

One of the project personnel who initiated the project left the Ministry in February 2006 when implementation was about to begin, leaving the other partner, who had earlier on indicated his commitment with postgraduate studies, to continue with project activities. This impacted negatively on project activities as a new partner had to be sought to assume project activities as a counteractive measure. The new project officer also seemed to be very committed until he finally dropped out at the end of April 2006 because he could not make meaningful contribution to the project. This lead to delays in implementation of project activities as some activities had to be postponed to suit the study program of the remaining officer. This also led to delay in submission of the final report and failure to meet the deadline for completion of the project. The project was supposed to wind up at the end of May 2006 but some project activities are yet to be finalized. The final output is yet to be printed and distributed to the final users.

5.0 Future Plans after the PRP

At least 300 copies of the operational manual will be printed and distributed to the extension workers in the project area. An evaluation sheet shall be incorporated as annexure in the manual for the purpose of receiving feedback from the end users (the extension workers). The feedback shall be used to improve the manual before it can be disseminated to all the other provinces of the country. A proposal will be made before the start of the fiscal year, which begins January every year, to the treasury for funding to replicate the outputs to other provinces of the country. This request will be made simultaneously with other requests for budget allocation by AREX. This manual is specifically for Masvingo Province but will need some further development to suit all the provinces of the country. This will be done by AREX through its own resources.

An Agricultural department of a local university (Midlands State University) will be engaged for collaboration in research and extension with AREX Masvingo Province. Negotiations are currently underway and the modalities and terms of engagement are being worked out between the two. It is expected that research will begin to be conducted jointly between the two departments with AREX benefit from training of its personnel at the university while the university will benefit from the field experience of AREX. It is also expected that as the idea takes root, some farmers will be sent through the University for training just like the Agricultural Technology Transfer Center at Kasetsart University.

Two projects for further collaboration between Zimbabwe, KU and JICA have been identified and

project proposals are being formulated by the Zimbabwean side for submission to JICA for financial support. These are:

i) Project for Establishment of Integrated Farming Model in Rural Communities of Masvingo Province for upgrading food security at the household and community level. The project shall involve training of Zimbabwean Extension workers in Thailand or on-job training in their areas by experts from Thailand.

ii) Project for Rural Community Development through participatory approaches to improve the livelihoods of rural communities. The project shall involve the training of extension workers in Thailand, Zambia or Zimbabwe through on-job training.

These two projects shall entail collaboration among Zimbabwe, Thailand, JICA and possibly Zambia through dispatch of JICA third country experts from Thailand and or Zambia to assist in implementation of the projects and conduct training programs for the extension workers and farmers in Zimbabwe.

6.0 Assessment of the PRP

6.1 Relevance

The PRP has been a valid intervention to the problem of lack of capacity in the agricultural extension service of the country. Extension personnel have been lacking comprehensive technical manual to use while conducting their duty. The PRP which has given birth to the operational manual will help tackle problems being faced by farmers in rural areas of through capacity building of their agents of development. Since the Government of Zimbabwe has specified extension as a vital link to the development of the agricultural sector, it is therefore crucial the extension be strengthened to adequately provide for the needs of farmers following biased extension provision to communal areas during the colonial era. It is expected that the output of this PRP will be a milestone for development agriculture and rural communities through effective service delivery by extension workers. The implementation of the PRP in Masvingo province is only the beginning and pilot project. It is expected that after evaluation and impact assessment in Masvingo province, the manual will be amended and refined before it is disseminated to benefit all areas of the country.

6.2 Effectiveness

The final output of the Zimbabwe PRP has been achieved as originally planned. It is still premature to evaluate the effectiveness of the PRP since the operational manual is still to be distributed and assessment of the impact to be done. It will take longer before feed back can be obtained from the end users who need time to apply the manual and self-evaluate the effectiveness thereof. The overall indicator will be the livelihoods of the rural communities as these are the overall target of the whole

program (AAKCP_RCDS). The manual is a product of collaboration and active contribution by both the Zimbabwe and Asian sides. This implies that Asian knowledge and experiences were incorporated into the manual even though some modifications were made to suit conditions and resources in Zimbabwe.

6.3 Efficiency

The inputs injected into the production of output of the PRP include allocation of a budget amounting approximately to US$50 000 to project activities. This budget was mainly administered by JICA Zimbabwe office as per the agreement. Some project activities had to be scaled down to suit the budget and the outputs narrowed down to match the budget and time constraints. The Asian Partner Organization provided technical expertise to the project and their input came in as planned. Human resources from the implementing organization were allocated according to the requirements of the project. There were no inputs that were not utilized during implementation of the Zimbabwe PRP. The timing was very appropriate but the timeframe itself was the one which was constraining. It is still early to determine the appropriateness of the proportion of inputs that were used to produce the output since the volume of the output is still to be determined.

6.4 Impact

The impact of the outputs of the PRP is still to be realized since some final activities are still pending. The manual is still to be distributed to the extension workers so that evaluation can be carried out to determine the impact.

Cross cutting issues	Description
Policy aspect	No changes have happened to the policy aspect but efforts are being made to have the outputs of the PRP incorporated into the mainstream economy. The outputs of this project shall be disseminated to other provinces and benefit the whole country. This is expected to immensely build the capacity of field extension workers and improve agricultural extension services delivery in the country. This will generally improve the performance of agriculture and hence the livelihoods of those who depend on it, especially smallholder farmers.
Technological aspect	No improvement in technology has so far been realized.
Environmental aspect	The impacts on the environment are also yet to be realized since the output is still to be applied as a trial.
Socio cultural aspect	Changes will be observed as the outputs are applied.
Institutional and management	Same as above.

aspect	
Economic and financial aspect	Same as above.

6.5 Sustainability

Final activities of the PRP are still ongoing and plans have been put in place to replicate or disseminate the outputs to other areas of the country until the whole country benefits. The output will be tested and modified according to the outcome of the impact assessment to be conducted from time to time as dissemination is conducted. The plans will be implemented until the target beneficiaries of the AAKCP – RCDS (farmers and rural communities) are covered. A proposal is being pushed to have the outputs of the PRP duplicated to benefit the whole country through funding from the treasury. Modification of the manual shall be done according to the comments that are going to be received as feedback from stakeholders so that it can be extended to cover the entire country. The manual is expected to be received well among the extension workers since most of them are enquiring about it even before its publication. Follow up programs after the PRP have been put in place taking into consideration the lessons that were learnt from the Thai experiences. These lessons will be modified to suit local conditions.

The two project ideas that were born out of interaction with the Asian Partner Organization are now being developed into fully fledged project proposals to be submitted to JICA for possible funding. If these projects get approval for implementation, they will provide space for further collaboration between Zimbabwe and Thailand. Further collaboration will present an opportunity for concrete knowledge co-creation. The projects are expected to be implemented as pilots in two districts in Masvingo Province. It is expected that the government of Zimbabwe will be heavily involved in these projects through provision of both financial and human resources. The two projects are participatory in nature, which means that the target beneficiaries will be fully involved during implementation. The projects will provide adequate time for knowledge co-creation because of longer implementation timeframes.

7.0 Lessons learned

It was learnt that there are two categories of knowledge which are:

i) Conceptual or Theoretical Knowledge, which is knowledge acquired without one being practically involved in the generation or demonstration process, and

ii) Practical knowledge, which is knowledge acquired through demonstration or learning by doing or physically taking part.

Demonstration is the most effective way to share, generate or co-create knowledge hence the need to involve the intended beneficiaries in the generation of practical knowledge. New ideas were generated

both by the Thai team that visited Zimbabwe and the Zimbabwe study mission to Thailand as they observed extension practicals as well as activities of the farmers on the field. This implies that farmers are an important component of the agricultural research and extension system, therefore, the need to involve them at all stages of technology generation and dissemination. There is need for close collaboration between research and extension institutions and farmers (a lesson from the ATTC experience in Thailand).

There is vast endogenous knowledge in every country and this need blending with new (exogenous) knowledge from other parts of the world for development. It has also been learnt that in Africa knowledge is not adequately shared as it is mainly kept at the individual level and not the societal level. The more the knowledge is shared, the more the chances for improvement in the body of the knowledge. Knowledge co-creation is a process which takes longer as collaborating organizations need more time, first to familiarize with each other's operational systems, before practical knowledge can be shared and exchanged. Continued interaction and collaboration between Asia and Africa is necessary for extensive knowledge co-creation. Crop diversification and value addition at farm level are imperative for poverty reduction as farmers improve their chances of earning more from their produce.

Annexure 1: Table of Achievement

Activities (Planned in PO) / Period / Achievement ratio	Commencement of PRP - February		March		April		May	
	Planed (%)	Actual (%)	Planed (%)	Actual (%)	Planed (%)	Actual (%)	Planed (%)	Actual (%)
[1-0] The Project Implementation Unit is established.								
[1-1] Personnel and budget are allocated as planned.	100	85						
[1-2] The plan of operations is formulated.	100	100						
[2-0] Knowledge exchanges with the Asian partner organization in Zimbabwe are conducted.								
[2-1] Resource persons from the Kasetsart University visit Zimbabwe.			100	100				
[2-2] The Operational Manual Workshop is conducted.			100	100				
[2-3] The OM is formulated and drafted			100	75	100	95		
[2-4] The study mission is dispatched to Thailand.							100	100
[3-0] Finalization of OM document								
[3-1] The Draft OM is sent to Thailand for comments.							100	100
[3-2] The draft is locally applied as a trial.							100	0
[3-3] The OM is finalized taking into account the result of the trial							100	80
[3-4] 400 copies of the OM are printed and distributed.							100	0

Annexure 2: Plan and Progress of Operation

Production of Operational Manual (OM)	**Feb-06**	**Mar-06**	**Apr-06**	**May-06**	**Jun-06**
1.Preparation for OM Workshop					
2. Seminar/Workshop with EW, Farmers, Policy Makers & Stakeholders					
3. Visit by Thai Experts					
4. Assign stakeholders to draft specific sections of OM					
5. Collating Seminar/Workshop reports & recommendations					
6. Draft OM					
7. Sending draft OM to Thailand for their comments					
8. Visit to Thailand by Zimbabweans					
9. Prepare final document (OM)					
10. Final stakeholder consultation (Receiving feedback from Extension workers)					
11. Printing & Distribution of OM					

Annex 3: Report of Study Visit in Thailand

Summary

The Study Visit to Thailand by the Zimbabwean team was conducted from 7th- 13th of May 2006 and 3 members took part. The broad objective of the Study Visit was for the Zimbabwean side to have a clear understanding of the agricultural systems operating in Thailand. Thus, agricultural policies and programs being implemented there, how they work, their successes and reasons for such and possible adaptation to Zimbabwean set up. At the same time the structure and contents of the extension manual were also discussed for possible refinement.

The five-day study visit was educative to the Zimbabwean team. The team learnt about the Agricultural Technology Transfer Center (ATTC) extension methodology, which equips the lead farmer and he becomes the mode of technology transfer to fellow community members. This is a very sustainable methodology indeed. The team also learnt much on the strategies that Thailand is using to ensure food and seed security at community level.

Discussions after the study tour gave birth to 2 possible projects for collaboration, which are: Community Based Extension Approach Project and Food Security Project. The Thai team advised the Zimbabwe team to further prioritize on urgent problem and work on the proposals for submission to JICA.

The Thai team also gave comments on the extension manual that the Zimbabwean team was working on. Major emphasis was put on incorporation of pictures and illustrative diagrams into the manual.

■Duration: 7th- 13th May 2006

■Country: Thailand

■The Objectives of Study Visit :

(i) To discuss and finalize the extension manual extensively as well as understand the monitoring tools Thailand uses to get feedback after distribution of such manuals to field staff.

(ii) To establish extension manuals the agricultural extension in Thailand uses and bring copies of such

(iii) To have a better understanding of the agricultural systems, policies and programmes being implemented in Thailand their work structures, successes, technologies packaging and transmission to farmers and explore possible adaptation to Zimbabwe

(iv) To explore areas of further collaboration between Thailand and Zimbabwe.

(v) To further discuss the project ideas formulated by the Thai experts as well as project formulation and work out implementation modalities.

Zimbabwean delegation composed of three staff members as follows:

Name	Designation	Organization
1.Mr N.C Pambirei	Chief Agricultural Extension Officer	Department Of Agricultural Research and Extension (AREX) –Masvingo Province
2.MrsM.N Takawira	Head of Agric. Research Station	Chiredzi Research Station - AREX
3.Ms. M. W. Kwanayi	Provincial Crop Specialist	Masvingo Province - AREX

Date	Activity	Lessons Learnt
8th May 2006	Visited national maize and sorghum research centre at Suwan farm. Briefed by the Director and specialists on current on-farm research programmes Research farm tour	Strong linkage between research, University, Extension, private sector and farmers in both technology transfer and generation. Farmers have opportunity to asses variety and give feedback before release Strong breeding programmes to improve the different corn types (sweet corn, pop corn, baby corn and waxy corn) Broad research programme covering corn, sorghum, cotton and farm equipment Use of thorn less mimosa (*mimosa invisa*) for improving soil fertility, moisture and maize yields Sorghum important for stock feed and export Strong training programmes for Msc , Phd ,farmers, public and private staff The station is working hard to reduce use of chemical fertilizers to be more organic Suwan 231 a corn hybrid is drought tolerant and suwan11 a local variety is tolerant to corn leaf blight. On farm value addition and marketing for sweet corn through an on farm shop by roadside.

	Visited Pakchong Horticultural Research Station	Collection and conservation of hybrid and local varieties of fruit crops. Desuckering of banana using appropriate technology Selection and breeding of fruit crops (mango ,annona ,papaya) Use of vetivar grass in orchards for soil erosion control Use of Indonesian varieties which are polyembryonic(3 plantlets from one seed) hence quick to establish root stock Off season mango production by use of chemical applied to mango basin and induces flowering and then fruiting.
9th May 2006	Visited Institute of Food Research and Product development	Value addition options for mulberry , soy bean and corn into snacks , juice , tea and milk respectively Quality tests important to verify nutritional value of foods.
	Visited the Provincial Agricultural Extension Office and had discussion with Extension specialist	Organisational structure of province has similarities and dissimilarities with Zimbabwe Various specialist agriculture technologies (crop, livestock, engineering) all channelled to the farmer through extension thus avoiding confusion and replication to farmer Ratio of A.E.W: Farmer is very high (1:1113) but the extension staff are highly mobile Extension methods more or less similar to Zimbabwe only that they emphasize on training of lead farmers who volunteer based on self actualisation. Extension works more with area committees than individuals and the role of extension is more of facilitation Information is packaged into pamphlets, brochures, booklets and manuals Source of funding and project implementation done together by central government and local government and governor assists Inputs procurement by farmers mainly through cooperatives (within the ministry) and private companies. Farmers mainly classified as farmers (usually male), women farmers and youth /young farmers. Research agenda is driven by farmer problems Have mobile clinic, which incorporates various specialisation areas depending on farmer problem. Farmers thus get opportunity to meet with specialists and ask questions on their problems

		80% of the farming population owns the land and this facilitates investment
10TH May 2006	Visited the Royal Study Centre an initiative by the monarch and briefed on projects for water resource and soil development as well as forestry and community and occupational development Visited 2 lead farmers (Agricultural Technology transfer centres) who toured us around their farms showing us the different technologies they are demonstrating to their communities	Traditional leadership have critical role to play in initiating, encouraging and implementation of rural development. Vetivar has multiple use: soil erosion control, soil structure improvement ,repellent for rats and for composting Over a period of time (e.g. 3 years) use of organic matter leads to drastic soil structure and fertility improvement New farm theory for self sufficiency: land divided into 30% water resource, 30 % paddy /food crop, 30% other activities, 10 % home garden/indigenous chicken Thai communities are well informed and very health conscious hence strong drive towards organic production. Organic farming reduces production costs. Some components are compost making, legume green manuring, biopesticides, use of vetivar grass as repellent , bio fertilizer . Use of bio extract for enhancing flowering and fruiting in fruit production Indigenous knowledge can be effectively used for pest and disease control/management if explored e.g. neem tree extract for pest control and Mexican marigold for nematode control Aquaculture (fish and frog farming) – pond types and production systems Thai farmers are united and give support and respect to the lead farmer who in turn is sacrificial. Thai strong cultural family ties enhances technology adoption More than 50% of Thai women participate in farming and are diligent as well as eager to learn. Farmers can be mode of technology transfer once trained and when farmers are taught by fellow farmers they learn faster and accept technology easily Sustainable to use farmer to farmer training because technology transfer continues even when government has no adequate funding for Agricultural extension worker to be regularly in the field.
11th May 2006	Visited the Muang District community rice seed production and promotion	Production of good quality rice seed by farmer community Community food and seed security Variety very high yielding (5.3t/ha) compared to Zimbabwean varieties Farmers doing simple research on their own

	centre	Local competitions for ATTC (Agricultural Technology Transfer Centre) and sub ATTCs thereby enhancing learning Farmer Field School approach only intensify meetings at beginning and subsequently less regularly thus making it sustainable Study tours are farmer needs driven.
	Visited the community women banana processing group	Banana can be processed into a range of products viz : rolls ,chips and roast Cooperatives can work if members are committed to development
	Visited the Food bank in Suan Pung district	Food made available at community level thus increased food security Intensified fish farming by use of cages Nature conservation Integrated farming system Hands-on experience through letting the farmers do it themselves Food security as a broad subject (fruit tree crops, field crops, vegetables, nature conservation, livestock production)
10th May 2006	Wrap up discussion with Thai team on : -Manual discussion - Observations /lessons learnt from visit - Possible areas of collaboration - General Comments	Thai team recommended that pictures and illustrations be added in the manual and more comments would be sent via e-mail to the Zimbabwean team. Possible collaborative areas came out as follows: Corn varietal testing and improvement, community seed production, ATTC concept (incorporating soil fertility improvement, value addition of corn, banana, improved fruit varieties –sugar apple & jack fruit) , mobile clinic ,fish farming , food bank and linkage between Kasetsart and Midlands state university. The Thai team had the following comments to make: - 1. Testing of different promising technologies - A research programme is important. Arex and local university to cooperate. Thai team can trigger and possibly select a seminar topic and Arex can invite the University and discuss the options for applied research - Testing of different promising technologies e.g. local maize breeding, community seed multiplication, testing of suwan 1-5 in Masvingo and possibility of combining features with the local sticky white variety to come up with product which locals can use 2. Poverty reduction - Food security programme to increase food supply (varieties, legume soil fertility, planting densities, organic production, bio-

		extracts) - Chief's homestead can be used as food bank. Food produced and then stored for use by community in case of hunger - Increase protein supplement – small stock production, poultry, geese guinea fowl, fishery - School feeding programme: educate children on agriculture they produce at school and have food at lunch – a balanced diet - Processing and preservation which can be done for a range of products such as fish, banana, pork, corn - Community approach (ATTC extension approach)- need to bring communities to assess their problem both off farm and on farm then facilitate possible ways of solving. Need to think of the outside technology /research results that are there that can solve their problem. - Mobile clinic: there is need to assess the different needs of the various communities and integrate the specialisations for the clinic - Thus the possible projects are in line with the earlier on suggestion by the Thai expert team and are as follows: 1. Community development approach project Food security project.
	General discussion	There are lots of useful informative Thai manuals, which the Zimbabwe team could take back home for use but they need to be translated first. During the study visit the Zimbabwean team could not read any of the manuals which were presented to them since they were in Thai language so in the broad projects translation of literature/materials need to be included. Need for the Zimbabwe team to sit down and prioritise and finalize what is the urgent need for their communities Need for Zimbabwe extension to emphasize on all farmers (male ,youth, woman) Since the culture for the Zimbabwean farmers is always to do things in anticipation to receive something from donor then lead farmers need to be given an incentive such as award but definitely not cash or inputs. Zimbabwe team needs to draw up a conceptual framework Possible project forms: - 1. Bilateral between Zimbabwe and Japan and a 3rd country

		expertise in this case Thailand 2. Trilateral cooperation between Japan, Zimbabwe and Thailand - Zimbabwe team to discuss with JICA representative in Zimbabwe on the possible option of the two.

Concluding Remarks

The five day study visit was very educative and an eye opener to the Zimbabwe team. The team learnt about the ATTC extension methodology which equips the lead farmer and he is mode of technology to fellow community members. A very sustainable methodology .Also the team learnt much on all the strategies Thailand is using to ensure food and seed security at community level.

Regarding possible projects and proposal development, we had a very fruitful discussion with the Thai partners. It was possible for us to discuss the projects and the Thai team advised us to put down some conceptual notes together for forwarding to JICA and at the same time consult with JICA Zimbabwe on project form i.e. bilateral or trilateral.

We are very thankful to the Thai partners for preparing a very educative programme for our study visit and their active participation as well as their hospitality to us. We are also thankful to JICA for the good co-ordination of the arrangements and the funding of the study visit.