



**Ministry of Agriculture, Rural Hydraulics
And Food Security**
Water Resources Management and Planning Department



Final Report

Mobilizing water resources for agriculture in Sangalkam area

Summary



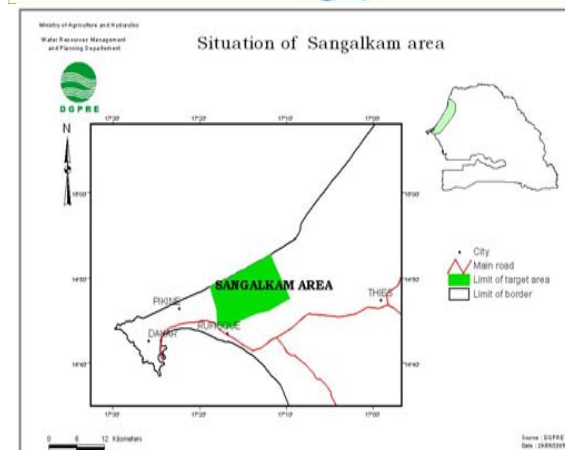
- **Background of the PRP**
- **Narrative summary of the PRP**
- **Amendments of the plan**
- **Inputs conducted**
- **Activities implemented**
- **Summary of output**
- **Knowledge co-creation**
- **Difficulties in implementation of the PRP**
- **Lessons learned**
- **Future plan after the PRP**

Background of the PRP

Situation of the area



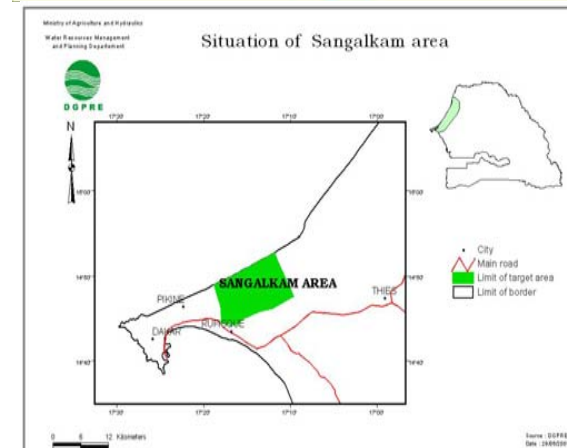
- **Sangalkam rural community is situated in the region of Dakar to the west of Senegal. It covers a surface of 195 square kilometers with a population estimated to 50,000 inhabitants distributed on 28 villages.**
- **Unit market exploitations can be classified in two groups:**
- **small producers: who 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).**



Potentialities



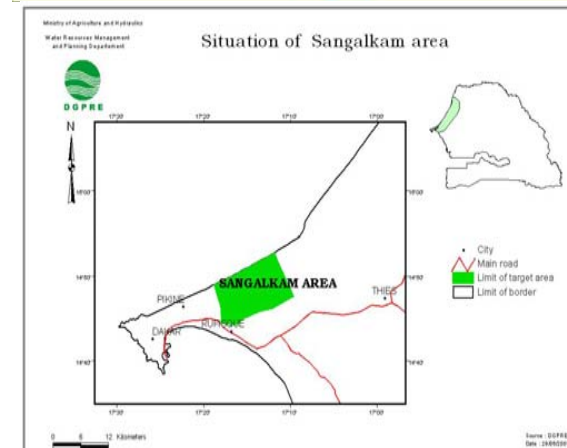
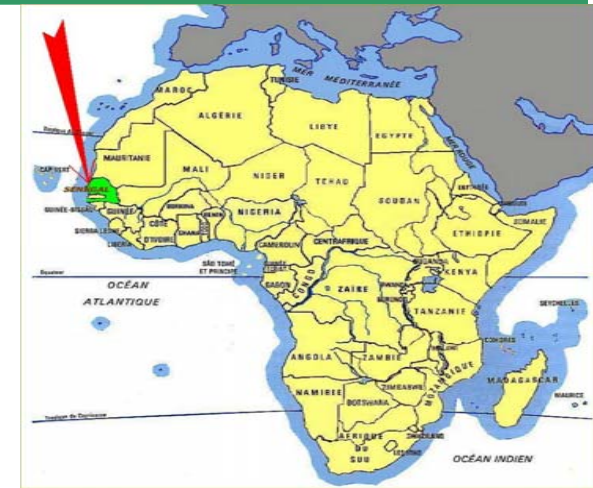
- the climate is favorable to a lot of type of cultures;
- the existence of setting of dialogue (UNMP, URAS, FRAS...);
- the progressive introduction of agricultural techniques modern (system of irrigation drips to drop, choice varietals, manufacture and use of biopesticides, use of stamps...);
- the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



Secteur concerné



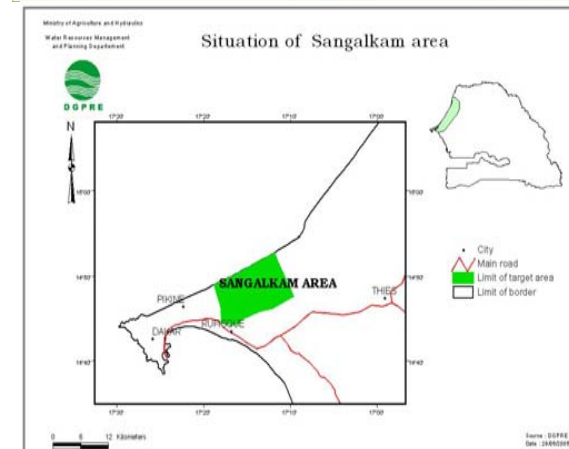
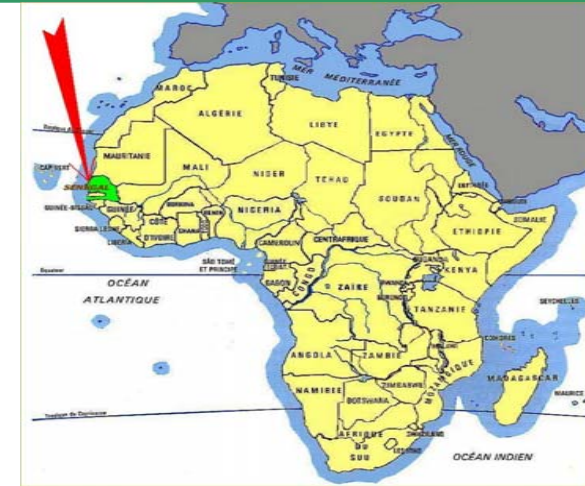
- The strategy of IWRM consists of evaluating the water demand typologies of communities, the definition of priorities, the elaboration of useful water resources management plan.
- To do so Senegal has created National Water Partnership Committee on November 12, 2002.
- Its objectives are:
 - To improve water resources management
 - To guarantee water supply and Sanitation
 - To protect natural resources



Regulatory texts



- 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)



Problems

Economic Problems



- **financial resources are limited for small producers ;**
- **most agricultural 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 all possibilities of important investment;**
- **the market tariff of water used is very expensive.**

Environmental Problems



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

Causes of Problems



- **difficulty to access to the financial credit;**
- **a predominance of traditional methods used by farmers;**
- **Wells are over exploited;**
- **There is an enormous waste of water;**
- **There is not real exchange know-how between farmers through the existing center.**

Narrative summary

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.**

Overall Goal



- **to implement a center which will have the capacity to relieve information between local actors to share their know-how in Sangalkam rural community**

Intermediate Outputs



- **A exchange network will be established between Sangalkam rural community and Baan Pasakgnam community;**
- **A exchange network will be established between Huai Hong Khrai Royal Development Study Center and Water Resources Management Department of Senegal**

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.**

Amendments of the plan



The Strategic Development Plan will be integrated as a part of the Local Development Plan

Or it could be included into the Integrated Water Resources Management Plan

Inputs

Senegalese side



Rural Council of Sangalkam : mobilization of population

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

- **the secretary of the project;**
- **all transportation facility for technical visits;**
- **The coordination of workshops.**

Thai Side



**Exchange experiences has been facilitated by
Huai Hong Khrai Royal Development Study
Center**

JICA Side



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

Activities implemented

Activities



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

Activities



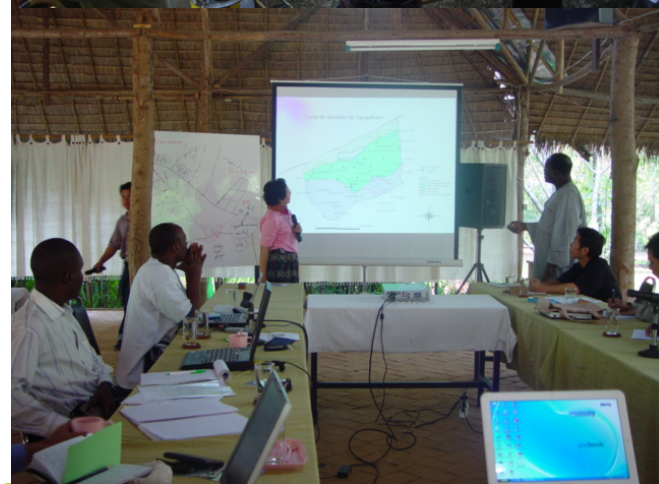
- **Questionnaire from Thai Experts to Senegal**
- **Answer to questionnaire by Senegalese Experts**
- **Thai field visit in Senegal during the period from 21 to 28 of January, 2006**
 - **courtesy visits to central authorities**
 - **Work session with local authorities**
 - **Seminar for exchanging**



Activities



- **Senegalese field visit in Thailand (9 to 20 of March, 2006):**
 - **Study sandy soils for using to agriculture**
 - **Study agricultural system in arid zone**
 - **Study water management into small producers**
 - **The development of river basin for integrated development**
 - **Exchanging with Baan Pasakgnam community**
 - **Study of technology transferring of renewable energies.**

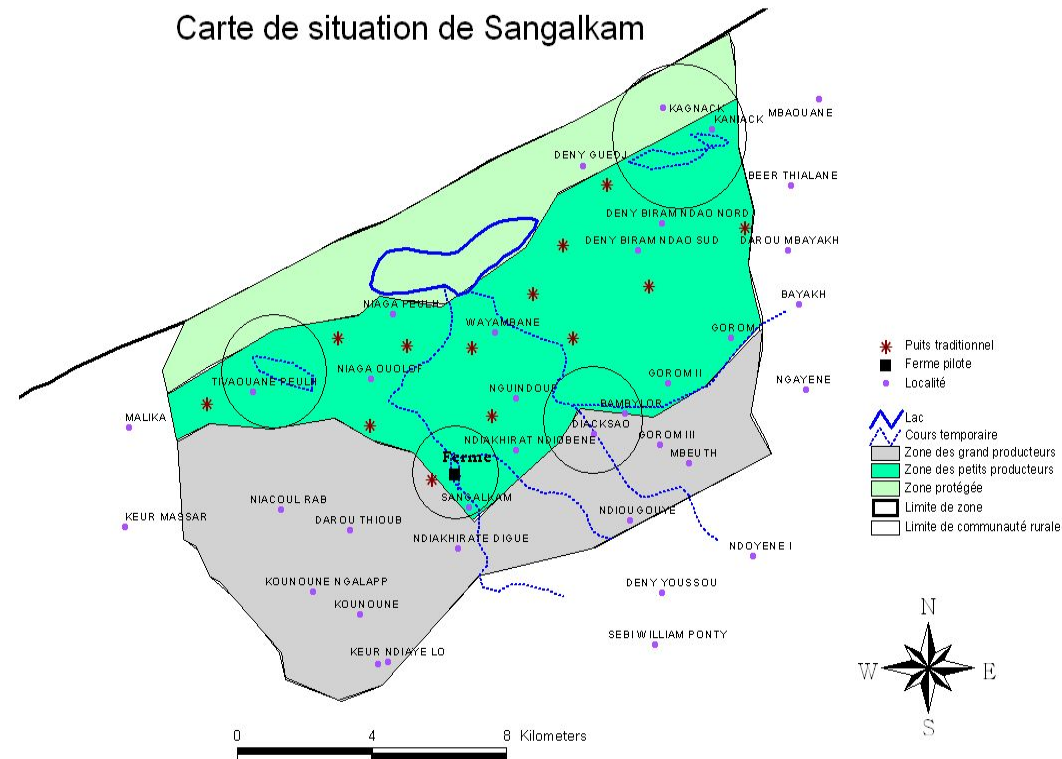


Summary of the Output Actions identified

Grasp of physical conditions



- Map of the soils occupation and exploitation of available resource
- Works of improvement of 4 sites



Capacity Building



- **Capacity Building of people of the existing center (6 persons)**
- **Reinforcing equipments of the center**
- **Setting up a database about farmer's know-how**



Knowledge Co-Creation

- **Model 1**
- **To the summit: one has 3 types of plants and 4 profits: food, economic and domestic use, conservation of soils and the local genetic plants;**
- **Middle: plantation for the conservation of the soils with check dams and reservoirs of water protected herbs of vetiver.**
-
- **Model 2**
- **Low: integrated agriculture (lasting sufficiency Economy with profitable cultures, of rice, of market gardening, of mushrooms, of medicinal plants, integrated with raising and the fishing).**
-
- **Model 3**
- **Balanced lasting: of the environmental ecology as the forest, soil, water, the conservation of the genetic plants, the food bank, plantation for the energy, the food and the economy.**
- **Cycle of life: museum living the nature and transfer of lasting agricultural technology**

Knowledge Co-Creation



- The thai center working closely with local communities is a focal area to share experiences;
- Communities are implicated into decision-makings, they fixe rules of use, assure the management of the water reservoir;
- using of small dams made with local material (bamboos or stones or in reinforced concrete)
- The plant called “vetiver” to figth against erosion exists in Sangalkam area, but farmers didn’t used it according to the topography of the land.



Difficulties in implementation



- **Human resources are not sufficiency;**
- **Financial Ressources are limited;**
- **Institutional changing is not evident;**
- **Problems of soils occupation.**

Lessons learned



Experiences from Thailand:

- Professionalism of technicians work into Centers;
- Good implication of local communities into decision-making;
- Communities have a good management of water resources;
- Soil occupation is rational;
- Food processing is very well developed;
- Technology used is based on simple principles.

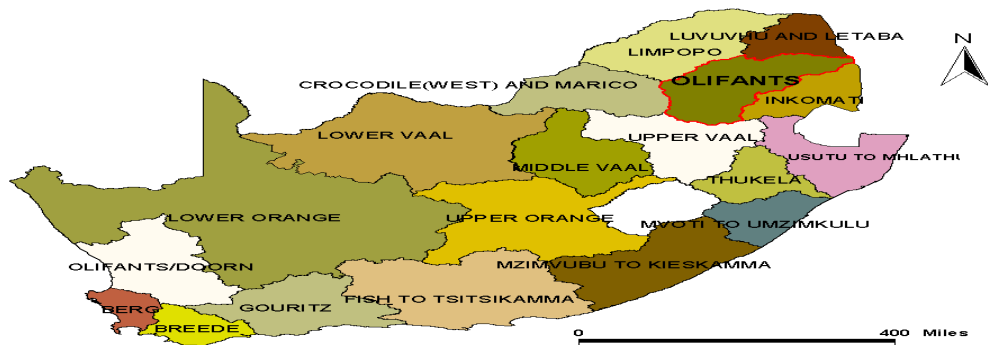


Future plan after the PRP



- The future plan is to setting up the strategic development plan for a rational mobilization of water resources for agriculture in Sangalkam rural community.
- Short term actions,
 - Map of soils occupation and available water resources
 - Works of improvement of 4 sites
 - Capacity Building for extension workers
 - Reinforcing existing center
 - Setting up of a documentary database
- Mid and long term actions:
 - Revitalization of fossil valleys in the zone
 - Implementation of small dams to strategic positions
 - Regeneration of natural resources (forest, fauna, soils)

Thank you for your attention



SOUTH AFRICA (RSA) PRP PRESENTATION 29th JUNE 2006 NAIROBI, KENYA BY M.P. KGOPA / E. MATJOKANA



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DEPARTMENT OF AGRICULTURE

1. Background of the PRP

- The main problem is soil erosion caused by deforestation, strong runoff, cattle system and weak soil texture.
- The PRP has been planned in line with the policy of the Land care .



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2. Narrative Summary of the PRP

- A village Ga Maila Mapitsana has been chosen as the target group since it is the most hard hit by erosion in the high land area.
- Most of the community members here rely on farming as source on income and food.
- The overall goal is to combat soil erosion in high land area for Environment, Livelihood and self reliance.
- Formulate proposal on training project.
- The operation of the PRP is divided into three phases:
- 1 Visit 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.

General information of the PRP cont.

3. Amendments of the Plan

- In general no significant amendments have been effected to the plan except some changes in terms of dates time and venues to coordinate with other plans of the District.



General information of the PRP cont.

4.Inputs Conducted

	Human resource	Financial	Facilities
RSA	2 officials and community leaders.	-----	Transport and conference hall.
HHK	2 experts from the center.	-----	Center and villages.
JICA	2 officials RSA		-----



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.

RESULTS OF

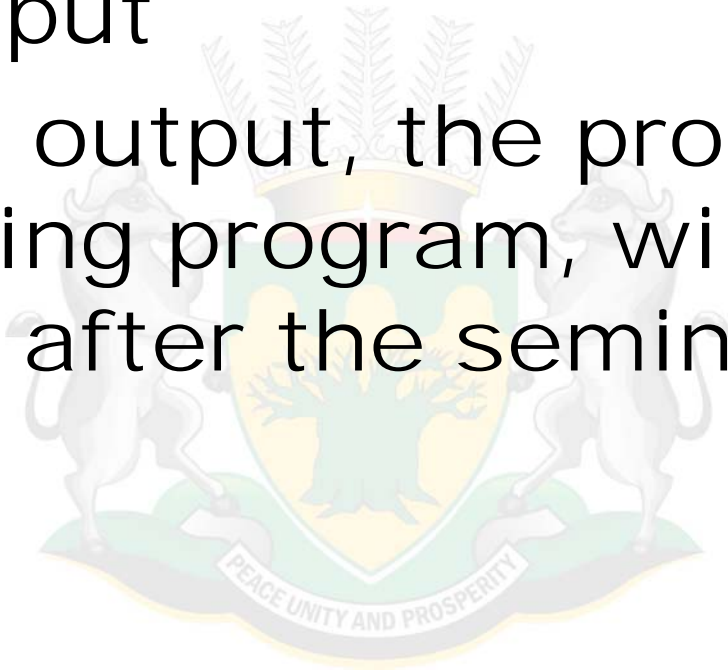


1. Summary of the Output Intermediate output

- The extension officers and the community have knowledge of solving soil erosion by check dams method.
- Community members acquired team spirit and self reliance.
- Check dams and gabion methods were constructed at the pilot project area.
(the effectiveness of the check dams have been observed at the pilot project).

RESULTS OF THE PRP 2/2

- Final output
- The final output, the proposal on the training program, will be finalised after the seminar.



RESULTS OF THE PRP cont.

2. Knowledge Co-creation

Knowledge obtained from Asian part

- Several methods and techniques of soil and water conservation.
- Support from the community leaders.
- The involvement of youth in the program.
- Community participation.

Knowledge Co-creation

The reason Why the knowledge is useful:

- New aspects have been observed in the program.

How the knowledge is useful:

- Technical use of local natural resources.
- Activities become simple to implement.
- For continuity of the activities.
- Self reliance of communities.

Knowledge



Creation of new knowledge

1 Modification of existing knowledge

- Positioning of the gabions from low land to high land area.

2 Adaptation of Asian knowledge into African context

- Construction of check dams method by using alternative materials.



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RESULTS OF THE PRP cont.

3. Difficulties in implementation of the PRP.

Knowledge co-creation

- The language barrier although not that problematic can always delay events.
- Communication links between Thai and RSA technically.
- Cultural differences.

Project Management and others.

- The channel of communication between JICA and RSA is very long and there is no technical advisor.

LESSONS LEARNED

- Coordination of developmental activities by institutions and organisations.
- Creation of great team spirit and respect, norms and values.
- Involvement of other stakeholders in the community.
- Manufacturing of bi-products.
- Responsible use of natural resources.

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.
- Work closely with the Provincial land care component.
- Allow other districts to come and learn from the pilot project.
- Further co operation with HHK.
- Final proposal will be finalised and submitted to UCA



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RECOMMENDATIONS TO JICA

- We wish for your continued partnership in this regard.
- Strengthen the links between the department of Agriculture and Huay Hong Khrai Royal development study center.
- Communication between JICA and RSA should be simplified.



THANK YOU



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Reviewing General Information on AAKCP RCDS

Basic concepts of new approach for knowledge co-creation:

- Endogenous – not exogenous
- Improvement – not replacement

Objectives of AAKCP/RCD:

- To share the output and process of each PRP among participating organizations
- To extract lessons learned through analyzing the process of each PRP
- To discuss future plans to utilize PRP outputs in order to contribute to rural development in Africa To establish a new model of capacity development to replace traditional transfer model

Kenya PRP

Goal: To increase income of rural people by focusing on value addition of agricultural produce

Final Output:

Agro-processing Manual

Lessons Learned:

- Potential to upscale agro-processing in Kenya
- Government should provide enabling environment and political goodwill
- Development of human capacity to ensure an effective extension system

Knowledge Co-creation:

- Adoption of specific knowledge e.g. fibre glass for dryers and hand chippers
- Use of appropriate packaging to market the product
- New and alternative preparation of products to increase shelf life

Comments from Thai partners and JICA

Thailand

- Local preferences must always be taken into consideration, i.e. taste, cultural acceptance
- Due to time and logistical constraints the Murkutwa Fruit Processors in the Kerio Valley were not engaged in this phase of the project

Advisory Panel / JICA

- No clear indication on whether knowledge was duplicated or co-created.
- What was borrowed from the Thai manual and what was tailored towards the indigenous needs?
- The manual is very much at organizational level: how can it be applied to other knowledge levels?
- Must be very sure of target market and viability of agro-processing in subsistence economy

Uganda PRP

Goal: To improve yields and income from irrigated rice

Final Output:

- Project Proposal for Technical Cooperation

Lessons Learned:

- Farmers involvement in project development crucial to success
- Must enhance capacity of staff and farmer's leaders thru training
- Need for strong Farmer's Associations and strong Water User's Associations

Knowledge Co-creation :

- Awareness of integrating fish into rice farming
- Income generating projects to supplement rice and rice/fish farming – mushrooms, sweet corn

Comments DOAE & JICA

Thailand

- Rice fish culture introduced by Thailand and application of small tractors are in line with the PAEP of Uganda
- Water users group must be strengthened to enable effective water management
- Animal power should be utilised to supplement small tractors
- Establishment of rice seed centre is necessary to produce quality rice seeds to increase rice yield
- Trial on rice-fish culture must be further implemented

Advisory Panel /JICA

- Are there plans for modification of knowledge of the rice fish cultivation into an indigenous project?
- Do you see the project extending to cover more of the development problems in this area?
- Are technologies available in sub-Saharan Africa for rice cultivation?

Thailand International Development Co-operation Agency (TICA)

South-South Co-operation policy focuses on:

- Agriculture
- Public health
- Income generation

This is done through

- Bilateral co-operation
- Trilateral co-operation
- Asia-Africa co-operation (AAKCP)

Tanzania PRP

Goal: Reduced spread of HIV/AIDS in the country

Final Output:

Guidelines to prevent and manage HIV/AIDS

Lessons Learned in Thailand:

Effective HIV prevention education i.e., extensive use of condoms

Improved Management / Awareness of the disease

Knowledge co-creation:

Adaptation of survey techniques and questions

Community and civil society involvement

Integration of AIDS related reproductive health issues such as STIs, TB

Comments from Thai partners and JICA

Thai MoPH

- Difficulties in implementing national frameworks at district and community level, multi-sectoral collaboration necessary within the government
- Evidence-based approach is needed for effective implementation
- Guidelines should be usable at all levels including the community

Advisory Panel / JICA

- The presentation must follow the structure of the draft final report
- Intermediate output is baseline survey - final output not completed

Questions:

1. Have similar surveys been done already within TZ?
2. What input you have applied from Thailand to the survey you conducted in TZ? (what knowledge has been “co-created”?)

Zimbabwe PRP

Goal: Formulation of operational manual for agricultural extension workers

Final Output: Operational Manual

Knowledge Co-created:

- Comprehensive manual is new concept and ideas from Thailand were adapted for local manual
- “Lead Farmer” concept is being modified to Zimbabwean context

Lessons Learned:

- Integrated agricultural development - link between policy makers, agricultural research and development and farmers is vital for successful implementation of development projects
- Crop diversification and value - added products are farm level are vital to poverty reduction

Comments from Thai partners and JICA

Kasetsart University

Four steps to successful development:

- Comprehension and understanding
- Replication of tools
- Analysis of the knowledge
- Synthesis of experience

Research should be demand-driven hence vital to involve farmers in technology development

Manual needs to be field tested before printing more

Advisory Panel/JICA

- Has the manual been modified sufficiently to be context specific to Zimbabwe?
- Which parts of the Thai manual have been modified to suit the local context? (knowledge co-creation)
- There should be a section on how to use this manual at the front, can Thai experts assist in manual revision?

Asia - Africa Cooperation in Practice: UNCRD

Objectives:

- Research and training centre in local and regional development in Africa
- To improve regional economies and strengthen local capacity
- To provide a forum for experience sharing between African and African scholars and policy makers and Asian and African scholars and policy makers

Activities:

- Research into alleviating current regional problems - case studies and textbooks
- Senior policy seminars, African Training Course (ATC) on local and regional development planning and management, in-country training courses

Africa-Asia Exchange Programme:

- Designed to create and strengthen links between African and Asian research and training institutions and promote south-south collaboration

Senegal PRP

Goal: To improve Integrated Water Resource Management (IWRM) in Sangalkam, Senegal

Final Outputs:

- Preliminary development plan

Knowledge co-creation

- Different types of models from Thailand adapted as strategies for IWRM
- Simple technology from Thailand adapted for local context - i.e., types of dams, materials used

Difficulties

- Lack of skilled human resources, financial support, institutional culture is not supportive of change

Comments from Thai partners and JICA

Thai DOAE

It is important to make water suitable for agricultural production
Make use of naturally occurring resources to ensure sustainability
Plan for activities for IWRM needs to involve all aspects of IWRM -
reforestation, appropriate crops, dams etc

Advisory Panel/JICA

Final outputs for the PRP need to be different from the final outputs for the
strategic IWRM plan
Plan should start with situational analysis, socio-economic profile, national
policies and strategies re water resource management and local needs and
priorities
There should be a section on how to use this manual at the front, can Thai
experts assist in manual revision?

South Africa: Soil Conservation

Goal: To implement effective soil conservation techniques to combat erosion

Final Output : Proposal on Training Programme

Lessons Learned:

- Co-ordination of developmental activities
- Creation of team spirit
- Involvement of other stakeholders
- Responsible use of natural resources

Knowledge co-creation

- Technical use of local natural resource – construction of check dams
- Modification of existing knowledge – positioning of gabions

Comments Thai Partners & JICA

Thailand

- Communities should participate in the building of gabions and check dams to ensure community ownership of the project.
- There were limitations in what could be done because of lack of natural resources and human resource expertise
- There are several different kinds of check dams and RSA selected one that would suit their needs and then modified it using local material

Advisory Panel/JICA

- Will solving the soil erosion problem in a small community lead to a solution for this geographical region?
- How will we have a sustainable solution if the community lacks cohesiveness of philosophy?

Group Discussion 2

Types of Asian Knowledge	Technology, practical production plans, marketing plans, manuals
Methods of Knowledge Sharing	Exchange visits, practical demonstration, direct observation
Existing knowledge and Differences	<ul style="list-style-type: none">- Asian technology is more sophisticated than African- Lack of value added agricultural products in Africa- Lack of implementation of national development plans in Africa
Knowledge not utilised in co-creation	Farmers have traditional knowledge but do not know how to plan and implement in a cohesive manner
Methods of knowledge creation	<ul style="list-style-type: none">- Experimental research- Adaptation of Thai knowledge to African context
Facilitating and Impeding conditions	<ul style="list-style-type: none">+ Positive attitude and mindset, political will,- Lack of capacity and infrastructure, time constraints, communication barriers, availability of technical and financial support
Lessons Learned	Enabling environment, participants involved in decision-making