

Appendix H Summary of Key Informant Interviews

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Key Informant Interview 1 - Mr Sar Rith, Branch Manager, Vision Fund, Kampong Speu, 27 February 2006.

The meeting was held with Mr Sar Rith in Vision Fund's office at Rokar Thom Commune, Chba Mon District, Kampong Speu Province on February 27, 2006.

Vision Fund provides micro-credit to farmers, small business people and traders at a four percent per month interest rate. The organization has a total capital of US\$700,000 and outstanding credit of US\$500,000 mainly to farmers.

Main activities and achievements

Their goal is to improve the incomes and livelihoods of poor farmers through providing loans so that farmers can buy chemical fertilizers and have other small business activities besides planting rice, and so send their children to school.

Their main achievement has been to increase the business activities of farmers who get loans from them. They have helped to improve farmer's living standard by generating jobs for communities through pig-raising and other agricultural activities.

They have encountered many problems related to technical issues, such as the IT system, traveling long distances to villages in remote areas and lack of security for their credit agents.

Vision Fund has 4,500 clients in Kampong Speu Province, 90 percent of them work in rice-based farming, either as farmers, traders, processors or other businesses. The proportion of disbursement is 95-97 percent.

They require collateral in the shape of land title, cows, buffaloes or a certified letter from the local authority before providing a loan. However, the default rate on total loans is still high at 2 percent although the default rate loan to rice-based is lower at 1 percent.

Recommendations & Lessons Learned

According to Sar Rith the main lessons they have learned has been to follow up the loans and to make adjustments to the purpose of the loan. Also bank agents should assess farmers' projects personally and not rely on local authority's letters. The most important factors are the income-generating and project activities they have done in the past, their experiences and also those agricultural support programs that the government has facilitated to support farmers.

Plans for Improvement

Vision Fund's chance of creating sustainability lies with providing good services to foster trust with customers, generate more income and expand branch offices to more districts in the province.

The bank has a clear plan for next three years to open more branch offices in the province.

Constraints

Ranking of constraints:

- IT system.
- Traveling long distances to remote area.

- Lack of security for credit agent traveling to remote areas.

Key Informant Interview 2 - Mr Ung Chhun Try, Farmer, Kampong Speu, 27 February 2006.

A meeting was held with Mr Ung Chhun Try at his farm in Rokar Thom Village, Chba Mon District, Kampong Speu Province on February 27, 2006.

The farm is a medium sized fish and pig farm with two fish ponds and one large pig farm. He can produce 30 tonnes of catfish and 70 pigs in around five to seven months. He employs only three to four workers.

Main activities and achievements

Before starting his fish farm a fish expert advised him to put 100 nursery fish per square meter, but in practice he discovered it better to put less than 50 nursery fish per square meter, that way they grow faster.

Seasonal changes affect fish and sometimes they have diseases, but he lacks knowledge of aquaculture. He produces the feed for the fish and pigs himself and has encountered problems with the feed because it is not as good as the feed supplied by companies in market and so the fish and pigs grow slower than others fed with feed from the market.

He needs some technical support for his farm, but doesn't know where can he find the information. He has asked someone from the Department of Agriculture to help him, but without success.

Plans for Improvement

He has a clear plan for next five years to increase fish and pig production due to annual increases in market demand and his farm is well located close to the market, so the fresh fish need no transportation or refrigeration.

He has made great progress in the last three years. In his area there are several credit institutions such as ACLEDA bank, Amreth credit and Vision Fund, but the interest rate is high and he says that he doesn't need credit because he has enough capital to expand his business when the time is right.

Constraints

Ranking of constraints

- Market information - he has a limited market for catfish.
- Knowledge and skill on fish and pig-raising.
- The quality of feed production for fish and pigs.

Key Informant Interview 3 - Mr Sin Hour, Soy Beans Processor, Kampong Speu, 27 March 2006.

A meeting was held at Mr Sin Hour's soy bean processing factory in Rokar Thom Commune, Chba Mon District, Kampong Speu Province on February 27, 2006.

Sin Hour owns a factory for processing soy bean for preserved vegetables and pig-raising. It is a small scale factory with eight workers processing only three tonnes of raw material (soy bean) manually.

Main activities and achievements

He inherited his business from his parents after getting married. In 2000 he relocated from Phnom Penh to Kampong Speu because there was greater competition in Phnom Penh and the pollution from his processor led to many complaints from his neighbors.

He said that the situation in Kampong Speu is different and the villagers living around his factory are happy with his business because they can buy his waste to feed pigs and all the families around his factory now have two to three pigs, whereas previously no family had any pigs. He sells half of the waste to the villagers and the other half he uses on his own pig farm.

He supplies the preserved vegetables to the local market and also sells to Phnom Penh. His business faces problems with the low quality of soy bean and the rising price of fuel wood. There is also increasing competition from China and Vietnam, where smuggled goods are cheaper than locally produced ones.

Last year he encouraged the farmers in Kampong Speu to grow soy bean, but the soil in Kampong Speu is not good for growing soy bean and both yield and quality is lower than other crops.

He said that the key constraint to improving his processing is technology to reduce production costs because currently he processes manually and uses wood for fuel.

Plans for Improvement

He has a clear plan over the next five years to increase processing of preserved vegetables and pig production because market demand is increasing annually and he has made great progress in the last five years.

In his area there are several credit institutions, such as ACLEDA bank, Amreth credit and Vision Fund but the interest rate is high and requires collateral. He needs credit to expand his business but can not borrow money because of the high interest rate.

Constraints

Ranking of constraints

- Market information – there is a limited market for preserved vegetables.
- New technology for soy bean processing.
- Quality of soy bean and production costs.

Key Informant Interview 4 - Mr Lim Bunna, Marketing Agent, Acleda, Kampong Speu, 27 February 2006

A meeting was held at Acleda Bank's office in Rokar Thom Commune, Chba Mon District, Kampong Speu Province on February 27, 2006.

The bank acts as a credit provider and provides cash management, money deposit, and consultation services.

Main activities and achievements

They divide their clients into three categories: small credit for loans of less than US\$500; very small credit for loans up to US\$200 and duration of less than three months; and group loans. The interest rate is three percent per month, but for commercial or trading loans longer than one year and up to US\$5,000 it is 17-18 percent.

The bank has 275,900 clients in Kampong Speu province, 80 per cent of whom are in rice-based farming, such as farmers, traders, processors and other businesses. The proportion of disbursement is 98 percent and the bank's total capital in Kampong Speu is US\$6 million.

It mainly provides loans to farmers for pig-raising, planting vegetables and rice and small business processors and noodle processors, as well as commercial and trading loans to rice millers and other industry processors.

Acleda has faced many problems with farmers providing false information and using the money for a different difference purpose than that stated in the loan. So it needs to have robust assessment before providing credit and also in the follow up activities.

It requires collateral in the shape of land title, cows, buffaloes or a certified letter from the local authority before providing a loan. However, the default rate on total loans is still high at four to five per cent and default loans to rice-based clients is 1.5 percent.

Lessons Learned & Plans for Improvement

The main lesson the bank has learned has been to follow up the loans and to make adjustments to the purpose of the loan. Also bank agents should assess farmers' projects personally and not rely on local authority's letters, but most important is that income and project activities they been accomplished.

Acleda's chance of creating sustainability lies with providing good services to foster trust with customers, generate more income and expand branch offices to all districts in the province. The bank has a clear plan for the next five years by increasing income by 25 percent as well as opening branch offices in every district.

The bank plans to provide low interest rate loans to farmers and to make easy access loans and money transfers.

Constraints

Ranking of constraints

- Clients provide false information
- Difficult to make assessment on farmers' projects.

Key Informant Interview 5 - Mr Pa Suong Sao Kun, Deputy Director of the Department for Rural Development (DRD), Kampong Speu, 28 February 2006.

A meeting was held with Mr Pa Suong Sao Kun, deputy director of the Department for Rural Development (DRD), in Kampong Speu Province on February 28, 2006.

Main activities and achievement

The main achievements of DRD have been improvements to the road infrastructure, digging of wells and community ponds, the formation of a Village Development Committee (VDC) and improvements in health and sanitation.

About 50 percent of the un-numbered roads in the area have been repaired, supported by projects such as TRIP, ADB, SEILA or WFP. Each location has established a road maintenance committee, which takes up around 30 percent of TRIP's total budget.

Approximately 40 percent of the rural population has wells for drinking water (one well per 20 families). In addition the community ponds support some villages that are far away from water resources and there are committees for the maintenance of the wells and community ponds. Generally the wells are used for drinking water and the ponds are multipurpose, for drinking, watering small vegetable garden and for animals to drink from.

The first VDCs were established in 1995. Some are supported by the DRD and some supported by projects like WVI and LWF. Each committee has a member who is in charge of agriculture in the village.

Targeted areas have received training on primary health care, hygiene, sanitation and the environment and some villages have had model toilets built in them.

Problems encountered

Normally community roads start to deteriorate after two to three years if not repaired, some of the roads damage more quickly because of overloaded trucks. Unfortunately most of the committees for road maintenance are not active, unless they get support from projects (20 to 30 percent only). The biggest difficulty is in maintaining roads connecting remote communes.

It is expensive to dig wells in areas where the soil is hard and rocky (approximately US\$1,500 per pond). It is also difficult to get people to contribute in cash, although they are more willing to contribute their labor. The water in the community pond is only clean if there is a fence and generally animals contaminate them.

The mandate for the VDC has expired and the department has no budget to organize the process of re-election. In addition the VDCs lack training and about 20 percent do not even know their tasks or responsibilities. Some departments bypass the committees and form their own committees.

People do not boil water and there is no proper water storage in the house and farmers do not use sanitation toilets.

Main contributions

One of the key achievements is the training of committees on road maintenance. DRD pays more attention to roads that farmers use to take their agricultural products to markets and the traders use to access farmers. Its key achievement has been the improvement of these roads.

The DRD has also strengthened the capacity of the VDCs through training programs on leadership and communication skills, proposal and report writing. It has also trained farmers on using clean water, primary health care and sanitation.

Key constraints

- Lack of communication and road infrastructure between villages.
- Lack of relationship between VDC and farmers, the VDC should clearly understand villagers' needs.

Lessons Learned & Plans for Improvement

The Government should increase the annual budget for rural road infrastructure and small-scale irrigation systems.

Projects should support the real priority needs of the people and work closely with the relevant departments.

Key Informant Interview 6 - Mr Thong Sokha, Branch Manager, Amreth Micro-Finance Institution, Kampong Speu, 27 February 2006

A meeting was held with Mr. Thong Sokha, Branch Manager, Amreth MFI, Kampong Speu province on February 27, 2006.

Amreth started its activities in 1993 under the umbrella of GRET (Group de Recherche et d'Echange Technologique) by providing money to individual and group sugar palm farmers to build cooking stoves. The institution was granted a license to act as a micro-finance institution in 2003.

Main activities and achievements

Amreth provides credit to farmers to improve their livelihoods. Their main activities are receiving deposits and making loans to individual and group farmers for processing and business activities. A typical loan size is 100,000 riel for individual farmers and from 2 - 6 million riel for groups of five farmers. At the end of 2005, the total money deposited at Amreth was about US\$18,000.

Total disbursement of loans, as at the end of 2005, is US\$1.2 million (up from US\$800,000 in 2003) with a maximum loan of US\$5,000 and minimum of US\$25, of this US\$700,000 was loaned to farmers and US\$250,000 to traders. The proportion of total credit disbursed to rice-based farmers is about 90 percent.

Amreth has 40,000 clients of whom 80 percent are farmers. It charges monthly interest at 3 percent on loans from US\$100 to US\$300, 2.5 percent on loans from US\$300 to US\$1,500 and 2 percent on loans above US\$1,500.

Clients have to put forward collateral in the shape of land title or house and the bank will give 30 percent of total value. In general, there is very little defaulting with none for groups and 0.5 percent for individual farmers, normally due to natural disaster or death. In 1993, under the umbrella of GRET, the default rate was about 1 percent.

The farmers who get loans from Amreth have increased their income significantly and stopped cutting down forests, which is of environmental benefit as well as improving their livelihoods.

Plans for Improvement

From 2006 to 2008, Amreth expects to increase its capital to US\$2 million. This is due to increased trust from people and the increasing understating of the benefits of loans and savings.

The institution also plans to expand its services and ease access to credit. Currently there is one central office in the town and three branches in the districts, employing 41 staff, of whom 39 are working in villages.

In the future Amreth will focus on micro-credit to farmers. In the past it lost about 10 percent of existing clients, but picked up 20 percent new clients.

Recommendations

Thong Sokha had the following suggestions, based on previous errors:

- The design should be systematic, namely the integration of financial and technical assistance, information sharing among organizations, organization of workshops, provision of credit or loans to farmers and other people involved in rice-based farming.
- A government institution such as the Ministry of Agriculture, Forestry and Fisheries should play the role of facilitator/coordinator of all stakeholders.

Key Informant Interview 7 - Mr Oeung Sok, Manager, Rice Noodle Processor, Kampong Speu, 27 February 2006.

A meeting was held with Mr. Oeung Sok, noodle producer, in the village of Psa Chas, Svay Kravan commune, Chbarnon district, Kampong Speu province on February 27, 2006.

Oeung Sok set up his enterprise, which produces noodles as a primary activity and raises pigs as a secondary one, in 1994.

Main activities and achievements

Oeung Sok learned this profession from his parents and now works with his wife and mother. In 1994 he only produced about 12kg of noodle per day but he expanded production before peaking in 1997 when he was producing up to 150kg/day. However production has now decreased to around 50-70kg/day, which he attributes to political events.

At the peak of his production he sold noodles in Trapaing Kraleng market, about 20km from his home. But nowadays, he sells only in Kampong Speu market about 2km from his home. He only sells to regular customers.

The price of noodle in December 2005 was 1,400 riel/kg, which allows him a margin of around 300 to 400 riel/kg. He uses the waste to feed 10 pigs.

The main problems that he has encountered are:

- The low income of villagers during natural disasters (drought, flood), which have damaged crops and led to very low crop yield. This has led to a decrease in the quantity of noodle sold at the market.
- Competition with noodle traders who import higher quality noodle from Phnom Penh.
- Government regulations preventing him from using chemicals, which can improve the quality of noodle, but also damage human health.
- Lack of technique for noodle production, which used to be a higher quality.
- Lack of capital to purchase new machinery and equipment.

Recommendations

From his experience he thinks that it would be good to:

- Modernize machinery and equipment, which can produce more, better quality noodle.
- Provide better services to customers aimed at selling more products.
- Keep close contacts with other stakeholders, such as farmers, rice traders and millers.

Key Informant Interview 8 - Mr Suong Bunhor, Head of the Department of Administration and Planning, DOWRAM, Kampong Speu, 27 February 2006.

A meeting was held with Mr. Suong Bun Huor, Head of the Administrative and Planning Office, for the Provincial Department of Water Resources and Meteorology, in Kampong Speu Province, on February 27, 2006.

Main activities and achievements

In 2005, the department received funds of 80 million riel, of which 30 million riel was allocated for the rehabilitation and repair of existing irrigation systems. The government also approved a budget of 200 million riel for 2006 of which 130 million riel is allocated for rehabilitation and repair work.

From 2001 to 2005, the department established 318 small projects for the rehabilitation and repair of irrigation systems in Boseth, Kong Pisey, Samrong Torng, Chhba Morn, Phnom Sruoch, Uddong, Thporng and Oral districts.

Forty-seven canals and dikes have been repaired to a total length of 40,565 meters. It has also rehabilitated and constructed 37 water gates, 8 spillways, 19 bridges, 2 culverts and 457,758 meters of canal, which can irrigate 18,310ha of paddy.

It has also established 13 water user groups. These are key to the sustainability of irrigation systems. When established, the members of group are responsible for the operation and maintenance of the irrigation systems. It has also provided training for 13 staff members.

Pumps have been introduced in case of drought, as each year farmers face the risk of drought at some stage during cultivation.

Problems encountered

Last year, the department encountered natural disaster, limited funding, lack of participation from water user group (WUG) members, lack of trust from farmers towards the WUG, limited contributions from farmers, lack of capital for investment and training, old construction equipment, and under-skilled staff in relation to proposed works.

Therefore, the department needs increased capacity to provide more training related to water management, operation and maintenance of existing irrigation systems, participation and problem solving. Funds should be provided on time according to the approved work plan, making farmers understand their roles and responsibilities towards the irrigation systems.

Plans for Improvement

The department plans to construct and rehabilitate small and medium irrigation systems, which will allow farmers access to irrigation water and thus diversify their activities. The plan for 2006 to 2010 includes 221 projects at an estimated cost of US\$3,800,089.

It will also aim for timely intervention in case of drought and to continue establishing new WUGs and strengthening existing ones. It wants greater participation from local authorities in irrigation work including irrigation system rehabilitation and repair and to organize more meetings with farmers to get more participation in the existing irrigation systems and provide on-the-job training.

Recommendations

He recommended that the team concentrates on water issues and integrated farming system and that the program design is market-orientated.

Key Informant Interview 9 – Lutheran World Federation, Kompong Speu, 27 February 2006.

A meeting was held at the office of LWF (Lutheran World Federation), Cham Bark Village, Cham Bark Commune, Phnom Srouch District, Kampong Speu Province on 3 March 2006 with the administration and finance officer Mr. Meuk Chantha and human resources development officer Mr. Kamsan.

Main activities and achievements

LWF has four main activities relating to farm field schools, IPM, small-scale irrigation and income generation schemes.

The farm field schools were started in 2000 with the objective of sharing experiences to do rice planting techniques, livestock raising, aquaculture, and how to make compost fertilizer.

IPM has identified pests and beneficial insects and applied the use of organic fertilizers and pesticides as well as identifying the negative impacts of chemical fertilizers and pesticides.

The small-scale irrigation scheme has increased water supply for rice farming which has allowed farmers to plant rice and other crops through the dry season. It involves digging canals, ponds for family and communities and building pump stations, water gates and spillways.

The income generation scheme has increased household incomes by about 5,000 riel/day through providing small loans to generate household income and providing training on small business, hairdressing, food processing, motorcycle repairs and scarf weaving.

The main contributions of the PDWA to the improvement in incomes and livelihoods of the poor has been the provision of training skills, providing loans to IGP, education, training, capacity development, school construction, improvements to the water infrastructure and awareness of people's human rights.

Problems encountered

Farmers have not attended the farm field school meetings, due to lack of participation, and interest and reluctance to share their experiences. The more experienced members do not think that they can get any more information and so will not learn from the group. Consequently the less experienced members cannot gain the benefit of the wisdom of the more experienced farmers.

The benefits of the IPM project is limited to the participants as there is no secondary dissemination of the technology to other farmers

As regards irrigation, the farmers do not follow the guidelines, for instance when they use water they are supposed to pay 2,000 riel/ha for pumping water from the river after the harvest. But farmers default and consequently there is no money in the water users group to pay for fuel.

Finally In respect to the Income Generation Program (IGP), many skills are needed but there is fierce competition between the farmers and the Chinese at the market. The market traders have a lot of practice in business that the farmers lack. So people tend to trust the

traders and also the farmers lack a marketing network, although LWF helps to find markets for them both domestically and overseas in Finland, Denmark and Germany.

Constraints & Plans for Improvement

The key constraints are the lack of available rainfall and an underdeveloped irrigation system and the lack of participation by local people in development.

They plan to improve the income and livelihoods of the poor by providing more raw materials, vocational training, financial assistance, capacity building and empowerment. Specifically they will build pump station and open wells. LWF is now focusing mainly on advocacy and human rights awareness.

Recommendations

The Project Team should find water resources and provide water for farmers, diversify the varieties of crop and livestock, provide more training and education and avoid mistakes, such as insufficient training, appropriate methodologies for illiterate people and insufficient attention to motivating of participants.

Key Informant Interview 10 - Ms Kong Lyna, Administration Assistant, World Vision International, Kompong Speu, 27 February 2006.

A meeting was held with Ms. Kong Lyna, assistant to the project's administration and finance officer, at the office of World Vision International (WVI) office, Chba Morn District, Kampong Speu Province, 27 February 2006.

Main activities and achievements

WVI has only one farming systems program, which started in 1990, and relates to food security. Its main activities are to do with providing rice seed (about 12 tonnes per year) and rice grain to families; the provision of a water supply, which concentrates on wells, dams, streams and provision of clean water to households during dry season; and a nutrition project aimed at pregnant women and children. The program covers Audong, Ang Snoul, Samrong Tong and Phnom Srouch.

WVI's rice seed activity provides emergency food only, which is difficult to target and there is a problem with non-beneficiaries becoming envious. Sometimes people sell the seed rather than plant it. This is a problem that needs investigation and suitable beneficiaries identified. There is also a similar jealousy from non-beneficiaries in the rice grain activity.

There is a genuine lack of irrigation so this is a priority area, but the low education of the people necessitates following up to ensure effective use of water resources provided by the project, which needs to provide technical assistance as well as money.

There is also confusion among locals between World Vision and Vision Fund, with many thinking it is the same. Kong Lyna felt that Vision Fund is not really suitable, because of the low education of people, so that they cannot use money effectively to develop businesses.

Constraints & Plans for Improvement

The key constraints to the improvement of rice-based farming systems are as follows:

- Water is the number one constraint.
- Education and knowledge of agricultural production techniques.
- Lack of training in conducting business, training should be provided on small business development to improve income generation.
- Lack of savings group to get funds for development.

WVI plans to improve the income and livelihoods of the poor in rice-based farming systems and continue the area development program (ADP) in current areas and expand it into new areas.

Recommendations

The most successful innovations in value chain development for rice-based farming systems in Cambodia are as follows:

- Good linkages between farmers and businesses.
- Linkages between WVI and Vision Fund credit to do small business.
- Incentives for training.

Key Informant Interview 11 - Mr. Svay Chhum, Vice-Chief of Angsang Kream Village, Kompong Speu, 28 February 2006

A meeting was held with Mr Svay Chhum, the vice-chief of Angsang Kream Village, Chung Ruk Commune, Kong Pisey District, Kampong Speu Province, at his house on 27 February 2006.

Main activities and achievements

The village has 140 households and a total population of 789 including 400 women. The total area of the village is 95ha, of which rice fields cover 65ha. The primary occupations of the villagers are rice farming and vegetable planting.

Two varieties of rice - heavy and light rice - are cultivated in different seasons. Heavy rice, eg. Neang Sor, Kpor Dong and Phka Malis is planted during the six months of the rainy season and the harvest in 2004 was about 2.7 tonnes/ha, and its average price is 730 riel/kg. Light rice, eg. Champa Meas, is cultured in the three or four months of the dry season.

Vegetable farmers can get an income twice a year, hence, they can earn more than a rice farmer. On average, a household growing watermelons can earn 300,000 riel per season.

An irrigation system was built in 1998 and it can irrigate 1,500ha during the wet season and 230ha in the dry season. After constructing an irrigation system, the villagers can plant rice and vegetable twice a year, thus improving their living conditions in terms of income generation, occupation and housing.

The village has both a water user group (WUG) and various farmers' groups. The WUG has two sub-groups comprising of 40 to 45 households and one community committee. The members have to participate in irrigation maintenance and also to pay 40,000 riel/ha to the committee for water. Each farmers' group comprises of 10 households and a group representative who collects the rice seed from farmers and sells to the Angkor Rung Reung company.

Problems Encountered

Many households are landless because when a family member gets sick they have to sell their land in order to get some money to pay for the treatment. In general, about 20 households don't have enough land to do rice farming.

In 2005 the price of rice (520 riel/kg) and watermelons (2,500 riel/dozen) was low compared to last year. Meanwhile the profit was also low because they sold rice through middlemen who collect at the village.

In reality the water supply is not enough for vegetable growing during the dry season and so the farmers want an improved water irrigation system. They also lack pesticide and need some training in how to use it.

In Svay Chhum's opinion, the main contribution to the improvement in income and livelihood for the poor is an increase of 50 percent in income, credit with a low interest rate of two percent and development grants to provide credit, animal banks, wells, water filtration tanks, organic fertilizers, latrines and books for the village library.

Constraints & Plans for Improvement

The key constraints to the improvement of rice-based farming systems are:

- Not enough water to grow vegetables.
- Problem with rice diseases.
- Landless problem - there are 15 households who don't have any land for cultivation; 20 households have little land (0.1 - 0.2ha/household); 50 households have 0.5ha to 1ha; and 10 households have from 2 to 2.5ha.

The current plans to improve the income and livelihoods of poor rice-based farmers include:

- CEDAC training program on rice planting in order to increase yield.
- Change rice varieties to those with a high market value.
- Villagers to plant rice twice a year and vegetables once a year.
- Have sufficient irrigation.
- Rehabilitation of the existing water station.

Recommendations

Svay Chhum believes that some producers have been successful in rice farming due to using modern rice farming equipment, for instance hand tractors (Koyun) over large land areas.

He recommends that the Project Team should increase the water supply, strengthen technology to increase yield, provide training and new skills such as instructions on how to use modern equipment, how to identify pests and use pesticide properly and how to produce organic fertilizer. It should also help find markets for farmers and form more farmers' groups to do with agricultural production including rice, vegetables and livestock.

Key Informant Interview 12 - Mr Bun Saborn, Senior Project Officers – Agriculture, CRS, Svay Rieng, 2 March 2006.

A meeting was held with Mr Bun Saborn, senior project officer – agriculture for CRS in Svay Rieng on 2 March 2006.

Main activities and achievements

CRS works in five main areas: rice, vegetables, aquaculture, fruit trees and small animal production.

It has introduced quality rice seeds, improved rice growing techniques, supported small irrigation schemes to grow rice, provided water pumps and improved the soil quality in rice fields. CRS has also provided seeds and training on improving vegetable production and small businesses as well as acting as a link between producers and traders.

It has also supported small-scale hatcheries and nurseries, provided technical support on fish raising and fingerlings, supported fish ponds and associations releasing wild fish to ponds in pagodas (about US\$3,000 to US\$4,000 per pagoda). In addition it has supported nurseries in 11 locations and provided training on crop propagation. Finally CRS has supported 23 village livestock agents (VLA) responsible for more than 200 villages.

Bun Saborn feels that the organization has achieved a spiritual change, so that farmers know how to make decisions by themselves, including how to select good quality seeds. It has also provided access to the VLA and now all members of groups adopt new improved production techniques for vegetable growing and 70 percent of farmers have adopted new techniques in rice production.

CRS' major contributions have been to train farmers in agribusiness and to strengthen technical support to all stakeholders.

Problems Encountered & Key Constraints

The main problems are that climatic changes have led to delays in cultivation, local producers can not compete with Vietnamese producers, project sites are far away from markets which leads to high transportation costs, and many farmers only want quick results and consequently migrate to Phnom Penh.

The key constraints are the attitudes of farmers, the lack of an irrigation system, marketing, poor soil fertility and lack of clear government policy and regulations for exports.

Plans for Improvement & Recommendations

CRS plans to improve the capacity of local organizations such as local NGOs, associations, farmer groups and commune councils, so that they are able to advocate for the government to allocate budget for their community development.

It will endeavor to produce appropriate new high yielding rice varieties, support community irrigation and strengthen WUGs. CRS also plans to improve the agricultural market in rural areas and establish packaging centers.

Bun Saborn feels that the project design should be appropriate to the environment of targeted areas, stakeholders should be clearly identified, human resources should be agricultural generalists and not specific experts and the project should focus on diversification, not monoculture.

Key Informant Interview 13 - Mr Iech Thea, Agricultural Advisor, RPRP, Svay Rieng, 2 March 2006.

A meeting was held with Mr Iech Thea, agricultural advisor at the Provincial Department of Agriculture, Svay Rieng province, 2 March 2006.

Main Activities and Achievements

The department's activities are focused on five areas: livelihood improvement groups of 25 farmers concentrated on very poor farmers; farming system improvement schemes, such as extension training and demonstrations; improving agricultural support systems; natural resource and environmental management; and implementation support, such as management and capacity building.

In 2004 the department implemented schemes in five communes with 1,000 beneficiaries and in 2005 this was extended to 18 communes with 3,600 beneficiaries. New high-yield rice varieties, crop rotation and integrated farming systems have been introduced.

He stated that farmers preferred to grow CAR1, CAR3, Phka Rumduol, IR66 rice varieties, and cucumber, yard long bean, tomato and cowpea as vegetables. In addition 45 ponds have been converted to aquaculture.

The main contributions by the department has been to build trust among beneficiaries, empower the local community, plan decentralization, improve traditional technology, apply principles of integrated farming systems and expand extension services to rural areas.

Improvements Needed, Problems Encountered & Key Constraints

The capacity of farmers and staff is still low and the behavior of farmers and staff very conservative.

The department needs to improve cooperation with other stakeholders, provide animal health support services, improve marketing and to strengthen water management. In addition he feels that there should be stronger support at the national level and that research institutions should be strengthened. There should also be greater financial support to project staff whose salaries are too low and there should be more study tour visits.

The key constraints are the behavior and attitude of farmers, marketing, poor soil fertility, lack of understanding on the part of farmers of post-harvest technology, natural disasters and water shortages.

Recommendations

Based on his experiences Iech Thea believes that the project should:

- Concentrate on capacity building.
- Have a clear management structure applied at all levels and the budget flow should be delivered at implementation.
- Improve the behavior and attitudes of farmers.
- Concentrate on food security and income generation.
- Benefit very poor people.
- Give ownership to implementing agencies.

Key Informant Interview 14 - Mr Kim Savuth, Director of PDOWRAM, Svay Rieng, 2 March 2006.

A meeting was held at the Provincial Department of Water Resources and Meteorology, Svay Rieng on 2 March 2006 with the Director, Mr. Kim Savuth.

Main Activities & Achievements

Kim Savuth said that in 2005 the department took a lot effort to respond to the needs of rural people working in agriculture. The most important activities involved: pump interventions in cases of drought and flood; ground water monitoring and data collection; rehabilitation and repair of irrigation systems; construction of new irrigation systems; strengthening water user groups (WUGs); organization of training courses; and project design.

Each year farmers have problems with drought and flood during both wet and dry season. In 2005 the department secured 355ha of seedling and 4,305ha of paddy fields affected by drought.

Farmers generally use rainwater to irrigate their crops, but some farmers also use ground water as a supplement in wet season production and as a primary source of irrigation in the dry season, but for small planted areas only, in particular vegetable cultivation. The department monitored and collected data of ground water from 21 wells on a monthly basis. It observed that, after pumping for rice or vegetable irrigation, the static water level decreases from year to year. Besides, in some locations, ground water contains a high proportion of iron and arsenic, which cause human health problems. The department has received support from EU, SEILA and IFAT.

Some irrigation systems were constructed during the Khmer Rouge regime, and some after 1979 and need rehabilitation. The department received some funds and diesel from the ministry to implement the planned activities. But these resources were not enough to accomplish the scope of works of the department. Last year 8,775m of canals were rehabilitated and repaired. It costs US\$250-300/ha to rehabilitate an irrigation structure and US\$400/ha to construct one from new.

The department also excavated 500m of canal for rice production to serve as supplementary irrigation in the wet and full irrigation in the dry season, as well as starting construction of one spillway and completing the construction of one pond. Eight WUGs were strengthened especially as regards the operation and maintenance of irrigation systems, benefiting 1,992 families.

There were also 10 training sessions, workshops and meetings and 11 projects were studied and designed. The department has 51 staff, only two are women. Total expenditure for 2005 was 154.3 million riel.

He feels that the best results are achieved when farmers are also businessman and there is a market-orientated production. It is also important for farmers to be skilled in farm management and for there to be a close relationship between stakeholders in the chain.

Improvements Needed & Problems Encountered

The main problem is a lack of funds that leads to a delay in activities and a consequent loss of trust on the part of the farmers. There is also a lack of skilled staff and participation

from the community in the operation and maintenance of the irrigation system. A further problem is the use of old, heavy equipment.

This would be rectified by the provision of funds on time and in accordance with the plan. There is also a need for staff to have greater knowledge and skill levels. It is important to create trust with communities to reinforce the importance of farmers' contribution and participation in the operation and maintenance of the irrigation system.

Plan for Improvement

The department will continue to construct small and medium scale irrigation systems in different locations through the provinces (canals, ponds, tube-wells). It will provide training to farmers related to water management and operation and maintenance of existing irrigation systems and timely interventions to farmers when drought and flood occurs.

It will also continue to monitor and evaluate ground water, strengthen the work of WUGs, continue to collect meteorology data, monitor farmer's crop production (rice, vegetable and other)

Key Constraints & Recommendations

The key constraints are the lack of irrigation water, lack of funds (as interest rates are too high) and the behavior and attitudes of farmers.

The design of new project should:

- Concentrate on water issues.
- Concentrate on new technologies and extension services.
- Improve behavior and attitude of farmers.
- Concentrate on human resource development.
- Concentrate on establishing water user groups.

Key Informant Interview 15. Ms Poeu Sopheap, Director, Department of Woman Affairs, Svay Rieng, 2 March 2006

A meeting was held with the Ms Poeu Sopheap, director of the Provincial Department of Women's Affairs, at Pre Thalok village, Svay Rieng District, Svay Rieng Province, 2 March 2006.

Activities & Achievements

The department has three main activities, namely an extension program, providing training of new skills for the women's group and training on health care. The extension program is about the role and function of women in agricultural activities at all provincial levels. The department provides training for new skills such as banana chip processing, dressmaking, hairdressing and handicraft making. The department has also held training courses on health care for children and pregnant women.

The PDWA has increased the knowledge and awareness of the role of women in both the household and society. It has led to more voice for women in society and also an increase in the number of women in management teams at all levels.

It has also created new job/activities (eg. processing, growing vegetable, and animal raising) aimed at family consumption and sale, as well as improving skills and knowledge and improving living conditions. There has also been a decrease in the child mortality rate and better health for children and pregnant women.

Problems Encountered & Main Contributions

The main problems encountered that need to be addressed are:

- Lack of capacity and knowledge due to low levels of education;
- The need to provide more training;
- The lack of participation of women, due to poverty, which necessitates that they have to go out to work;
- Harassment in the family;
- The lack of markets and market information; and
- The low price of agricultural products.

In her opinion, the main contributions of the PDWA to the improvement of income and livelihoods of the poor is as follows:

- Improved awareness and knowledge of women;
- Strong support from NGOs in terms of financial and technical assistance;
- Sharing and provision of knowledge, good ideas and experiences of women; and
- The provision of new skills to women.

Key Constraints & Plans for Improvement

The key constraints to the improvement of rice-based farming systems are:

- The change in behavior to encourage farmers to adopt a new technology;
- The difficulty in making farmers understand new technology and seed varieties; and
- The lack of water supply and irrigation for rice-based farming systems.

The plans to improve the income and livelihoods of the poor in rice-based farming systems are:

- To provide more training and new skills for women;

- To create new job opportunities for women; and
- Strengthening the linkages between DWA and DA, other organizations and NGOs.

In her opinion, the most successful examples of innovations in value chain development for rice-based farming systems in Cambodia are as follows:

- To build trust with farmers and try to change their habits as regards agricultural activities;
- To improve market access and market information;
- To improve knowledge of farmers in new technologies.

Recommendations

In order to avoid mistakes and to design a good agricultural program for improving the income and livelihoods of the poor in rice-based farming systems, the project team should:

- Study and investigate farmers' need
- Encourage farmers or local people to actively participate in the project and make them think about what the project will do for them.
- Try to understand thoroughly the real agricultural situation in each area (i.e. type of soil, seed variety, market and price).

Key Informant Interview 16 - Mr Mey Lon, Director DRD, Svay Rieng, 2 March 2006.

A meeting was held with Mr Mey Lon, the head of the Provincial Department of Rural Development (PDRD) at Pre Thalak village, Svay Rieng District, Svay Rieng Province on 2 March 2006.

Activities & Achievements

Their five main activities are the rural road infrastructure at village and commune level; rural health service; sanitation and water supply; follow up credit activities supported by PRASAC and CIDSE projects; and establishing village development committees (VDC). There are 470 VDCs in the 690 villages, some of them work well, due to support from projects.

Some achievements of the PDRD are as follows:

- Infrastructure: there are many roads in the village and commune level, but there are no links from commune to district and province yet. All rural roads should link together and also to health service, markets and school.
- Health care service: generally homes are hygienic and there is an increasing awareness of the six main types of disease for children and an improved knowledge and awareness of women's care and hygiene.
- Water supply: there are many wells in the village and water filters have been provided to rural households at village level.
- Strengthening of VDCs and CDCs: evaluation and facilitation of VDCs and CDCs to create better committees and management. It has also helped VDCs and CDCs in planning development processes and providing technical assistance.
- Establishment of farmers' groups by type of production (e.g. seed producer and vegetable) in order to improve participation of local farmers and to improve understanding of the market price of products.

Problems Encountered & Main Contributions

There have encountered some problems and improvement is needed as follows:

- Rural communes are not yet connected to district and province yet;
- Learning from the Japanese experience, farmers in one village should produce one product and find a market for it.
- Rural health service is still not good, especially for children and pregnant women.

In his opinion, the main contributions of the PDRD to improve the income and livelihoods of the poor are to:

- Create alternative jobs and find markets for farmers.
- Integrate farming systems according to market requirements.
- Improve rice and vegetable seed to a high quality and price.
- Encourage farmers to grow vegetables and raise livestock.
- Increase farmer's knowledge and change their habits.
- Encourage farmers to adopt new technology and work hard.

Key Constraints & Plans for Improvement

Key constraints to the improvement of rice-based farming systems are:

- Lack of markets and marketing information on agricultural products.
- Lack of irrigation system within the province (i.e. only in three places).

- Higher rate of population growth compared to the national population growth (2 percent).
- Quality of soil is continually decreasing.

Plans to improve the income and livelihoods of the poor in rice-based farming systems are to:

- Improve rice seed and vegetables to meet market requirement, in order to stop importing vegetables from neighboring countries (Vietnam).
- Increase farmers' knowledge and encourage them to adopt new technology in order to increase yield and household income and livelihood.
- Have a better market at a good price and more customers.

In his opinion, the most successful examples of innovations in value chain development for rice-based farming systems in Cambodia are as follows:

- Increased living condition;
- Better knowledge and human resources at provincial level through extension programs by provincial departments of agriculture (PDA), PDRD and NGOs;
- Farmers work harder than before;
- Training and technology transferred to the local farmers.

Recommendations

In order to avoid mistakes and design a good agricultural program for improving the income and livelihoods of the poor in rice-based farming systems, the project team should:

- Study soil quality and seed varieties before implementation;
- Use more non-chemical fertilizers;
- Provide technical assistance in appropriate areas;
- Study and investigate marketing systems and prices for agricultural products.

Key Informant Interview 17 - Mr Ly Bun Hong, Chief of Marketing Office, Acleda, 3 March 2006.

A meeting was held at Acleda Bank's office, Svay Rieng Commune, Svay Rieng District, Svay Rieng Province on 3 March 2006 with Mr. Ly Bunhong, the chief marketing officer.

Acleda Bank is a public limited company formed under the laws of the Kingdom of Cambodia. ACLEDA was licensed by the National Bank of Cambodia as a commercial bank on 1 December 2003.

Activities & Achievements

The main activities of the organization are providing credit, deposits and transfer services, cash management, financial trade, cash withdrawal, and travelers check. It is a credit provider (i.e. small credit, medium, and micro credit) and deposits to people involved in rice-based farming systems.

For small credits, farmers can borrow from US\$500 to US\$10,000 for a year's loan and micro-credit is from less than US\$500 to US\$2,500 for a year's loan. Most farmers use small credit and micro-credit. And they also take deposits from farmers who are in the self-help groups. For small credit, they provide loans in US dollars and for micro-credit the majority is in riel.

The Acleda Bank in Svay Rieng province has 3,452 clients, of which 350 are farmers, about 10 percent of total clients. In general, the number of farmer clients increases during the rice season (i.e. from July to December) about 20 percent of total clients.

The total disbursement of credit is just over US\$2 million of which about 9 percent reaches customers related to rice-based farming systems, at an average interest rate of between 2 to 4 percent per month dependent on the amount borrowed.

Generally collateral is required from clients such as land title, and other household assets. The default rate is very low, less than 1 percent, since the bank started in 2000 and the default rate for customers related to rice-based farming systems is the same, less than 1 percent. The growth rate of total credit disbursed in the past three years to rice-based farming systems is more than 100 percent, and there is the prospect of expanding credit in the next three years by above 70 percent.

Some achievements of the bank are as follows:

- It has good officers: they are honest and skilled;
- Good governance, laws and regulations;
- Quality services: quick and reliable;
- Clients identified based on their income and ability to repay loans.

Problems Encountered & Main Contributions

However, they have encountered some problems and improvement is needed as follows:

- Need to provide training and workshops to old and new staff;
- Give salary based on preferred work and evaluation;
- Provide health services and insurance to officers;
- Clients pay back late often due to problems with natural disaster and loss of business, however it is a very small percentage, less than 1 percent.

The main contributions of the organization to improving the income and livelihoods of the poor is through providing micro-credit. This can improve their livelihoods by creating more job opportunities and increasing household income. The main purpose of borrowing money is to buy farm equipment and materials, creating small business at home, raising livestock and handicraft making.

In his opinion, the most successful examples of innovations in value chain development for rice-based farming systems in Cambodia are as follows:

- Market aspects: need to find a market for all farm production.
- Support and cooperation from the government: by keeping a balance between import and export, particularly types of agricultural products.
- Increase knowledge and encourage farmers to change their traditional habits and adapt to new technology.
- Build trust with farmers.
- Improve irrigation systems.

Recommendations

In order to avoid mistakes and design a good agricultural program to improve the income and livelihoods of the poor in rice-based farming systems, the project team should conduct a study and investigate the income and livelihoods of poor farmers. It should also study the characteristics, geography and soil quality, including irrigation, selected seed varieties, markets and market information and prices.

In his opinion, the chance of Acleda achieving sustainability relies on:

- The quality of bank officers;
- Increasing and building good relationships and trust with clients; and
- Upgrading knowledge of officers and services.

Key Informant Interview 18 - Mr Ros Vol, Branch Manager, Thaneakea Phum (TPC), Svay Rieng, 3 March 2006.

A meeting was held with the Branch Manager Mr. Ros Vol at Thaneakea Phum's (TPC) office, Srah Vung Village, Svay Rieng Commune, Svay Rieng District, Svay Rieng Province on 3 March 2006.

Activities & Achievements

The main activities of the organization is providing credit to farmers and small businesses, and depositing money. The bank provides two types of credit: group loans and individual loans. A group consists of three to seven people and it can borrow from 50,000 to 500,000 riel for a period of eight months to one year. There is no collateral requirement on this type of loan. Individuals can borrow from 500,000 to 20,000,000 riel for a period of one year, however collateral in the form of a land certificate or land title is required as well as a guaranty from the local authority.

TPC started in 2002, its start-up capital came from CRS (Catholic Religious Services) and two to three shareholders. The main objective of TPC is to improve the livelihoods of local people and poor farmers.

TPC has 5,219 clients, of which about 90 percent (4,697) are related to rice-based farming system. These include farmers, traders and small businesspeople at home and at the market. The total disbursement of credit is US\$390,000, of which about 25 percent reaches rice-based farming system customers, at an average interest rate of between 3 to 3.5 percent per month dependent on the amount of money borrowed and type of repayment, eg. 3 percent if repayment is by installment and 3.5 percent if the total loan is repaid on completion.

Collateral, such as land certificate and land title and other household assets, is required for individual loans, whereas there is no such requirement on group loans, but the group provides a guaranty. The default rate on loans is very low, only 0.4 percent and the rate for customers related to rice-based farming systems is similar. The rate of growth of total credit disbursed over the past three years to rice-based farming systems is more than 50 percent, and the bank predicts to increase credit over the next three years by about 60 percent, whereas the original plan was 20 percent per year.

Some achievements of TPC are as follows:

- Good management: it provides training for technical assistance skills.
- It encourages high levels of responsibility and for people to follow the regulations of the offices.
- It has strong support and good collaboration from the local authority and village head.
- All clients are highly responsible and honest. In particular the bank has developed the trust of farmers and stresses the need for repaying loans on time and using the money for the correct purpose of the loan.

Problems Encountered & Main Contribution

However, it has encountered some problems and improvement is needed as follows:

- Some clients move house without informing TPC or paying back the loan money.
- There is a lack of collaboration between officers.
- Some clients are not able to make their repayment on time.

The main contribution of TPC to the improvement of the income and livelihoods of the poor is through providing credit to farmers. This creates more jobs in the household such as livestock raising and other. The main purpose of borrowing is to buy fertilizers, seed and farming equipment or materials. They can also improve their living condition by having better houses, food, health and education for the children. Now they have a better understanding about creating new jobs or activities in the household and are involved in social activities.

Recommendations

In his opinion, the most successful examples of innovations in value chain development for rice-based farming systems adopt the following approach:

- Pilot an innovative system in one specific village and find the market and right price. This needs follow up and technical assistance.
- Once successful, apply it to other areas. Thus farmers will change their habits and adopt the new technology, because farmers usually need to see success first.
- Need to build the trust of farmer.

In order to avoid mistakes and design a good agricultural program for improving the income and livelihoods of the poor in rice-based farming systems, the project team should:

- Make a good plan for the project;
- Provide appropriate skills and technical assistance to farmers;
- Have good team work and specialists;
- Follow up the project plan and activities;
- Monitor, evaluate and re-design the project.

In his opinion, TPC's chance of sustainability lies in:

- The profitability of the business;
- Ability to encourage investors to improve business capital;
- Maintaining good management on TPC's expenses.

Key Informant Interview 19 - Ms Sim Mary, Deputy Director, DWA, Battambang, 13 March 2006

Meeting was held with Ms Sim Mary, deputy director of Battambang Department of Women's Affair, at office in Svay Pour village, Battambang District, Battambang Province on 13 March 2006.

Activities & Achievements

The main activities of the department are to educate people about gender issues and family planning, and to continue the Unicef micro-credit scheme and existing LWF animal bank.

The department has educated people, particularly women, on gender issues and family planning. The micro-credit scheme is a continuation of a Unicef project after they completed their mission in Battambang and transferred the scheme to the department, but it is only a 50 million riel (approximately US\$12,000) scheme, under which the department provides micro-loans to farmers at 3 percent monthly interest.

The department's main achievement has been working in collaboration with partners (partners in development) and providing training to farmers on family development and family planning to improve their income.

Problems Encountered & Contributions Made

The main problem is overlapping activities with other projects and organizations, as well as natural disasters. Last year's drought was a big problem for farmers as the rice crop was not good, affecting the micro-credit scheme and the animal bank. Less government staff are participating, through lack of money to support them.

Their main contribution to improving farmers' livelihoods has been to change the farmers' activities from raising animals for family consumption to raising them to sell and creating other skills for women besides agriculture activities, such as weaving and hairdressing.

Key Constraints, Plans for Improvement & Recommendation

The key constraints to the improvement of rice-based farming systems are natural disaster and that government staff do not have sufficient skill to develop and extend agro-business activities.

The government does not have the budget to support staff working to support women's agricultural activities.

The department has a clear plan to continue the existing LWF and UNICEF projects and to promote gender activities.

Ranking of constraints

- No budget to support staff;
- Natural disaster (drought and flood);
- The department does not have agricultural skills;

Her key recommendation was to change farmers' habits, especially women, to consider other businesses after the harvest.

Key Informant Interview 20 - Mr Khem Phirum, Deputy Director, DOWRAM, Battambang, 13 March 2006.

A meeting was held with Mr Khem Phearum, deputy director, and Mr Khay Soda, chief officer of irrigation systems construction, at the Provincial Department of Water Resources and Meteorology, Battambang on March 13, 2006.

Activities & Achievements

In 2005, the production of wet season rice in Battambang province was seriously threatened by drought at the beginning of the production period. Farmers were concerned so the government, especially MoWRAM and PDoWRAM, intervened in time and eventually the farmers had very good rice production.

The main activities and achievements in 2005 were:

- Pumping intervention in case of drought: each year the farmers encounter this problem during the production cycle. In 2005, there was a drought at the beginning of the season, 631ha of dry season and 35,305ha of wet season rice fields were secured (6,605ha by pumping and 29,331ha by gravity).
- Irrigation systems rehabilitation and repairing: Some irrigation systems were constructed during the Khmer Rouge regime, and some after 1979 and need rehabilitation. Irrigated canals to the extent of 9,075m were rehabilitated and the contour dikes of Kamping Puoy reservoir were repaired. It cost 150 million riel. In cooperation with JICA, the department repaired the main canal of the Kamping Puoy irrigation scheme.
- Study and Project Design: 20 projects were studied and designed.

In Battambang province, there are many irrigation schemes (small, medium and large), some of which are working well, some are partially used, and some are not in use.

The Norea irrigation scheme is a medium scheme located about 4km from Battambang town. The length of primary canal is about 4,300m and many secondary canals were constructed. The system was rehabilitated in 2004 by PDoWRAM (US\$70,000). PDoWRAM rehabilitated all of the main canal, whereas the secondary canals were partially rehabilitated by the water user group (about 30 percent). New culverts and water gates and distribution boxes were constructed.

The Norea scheme can irrigate about 400ha of land by pump and gravity, covering three villages and approximately 500 households. The cost of rehabilitation was about US\$175/ha. The water is used to irrigate rice and vegetable crops. There is one mobile pumping station, which can be moved to five places. The department has installed one motor-pump of 80 HP with a pumping capacity of 1,500 to 3,000m³/hr (1500m³ in the dry season and 3000m³ in the wet season). It is a horizontal pump with a 50cm outlet pipe. The source of water for pumping is the Sangke River.

This year, farmers have not grown dry season rice because the price of fuel is too high and only 30 percent of water fees have been collected. The fee to be paid by the water users to the community is 550,000 riel/season/ha.

Thmat Porng irrigation scheme is located in Kampong Chamlang village, Vatt Tamim commune, Sangke district about 8km from Battambang town and can irrigate approximately 700ha of cultivated land. The scheme was constructed during the Khmer Rouge regime. The irrigation system was partially rehabilitated in 2005.

Three hundred meters of primary canal were concreted using funds supported by RED (Rural Economic Development). It is a pumping irrigation scheme and two vertical motor-pumps were installed. The pumping capacity is 1200m³/hr each and they consume 20L/hr fuel. The pump started this year and around 300 households use the water to irrigate vegetables and fruit trees. The duration of pumping is about 25hrs/month (1.5-2.0 hours per day, but not every day). The source of water is Sangke River. The irrigation scheme is managed by a water user committee (WUC), which comprises five people. The farmers should pay water fees to the WUC at the rate of 2,000 to 5,000 riel/hr (the water fees vary depending on the size of farmers' motor-pump pipes). The farmers do not produce dry season rice because the cost of fuel is very high.

Kamping Puoy irrigation scheme is a big scheme, which covers 13,500ha of cultivated land and can supply water for irrigating 2,850ha of planted area only. Part of the primary canal has been rehabilitated by JICA using US\$9,983 of funding from the Japanese Embassy.

Other schemes include the Bovel irrigation system, in Bovel district, which covers 35,000ha of cultivated land and the Prek Cheak irrigation scheme, in Mong Russey district, which covers about 40,000 to 50,000ha of cultivated land.

Problems Encountered & Contributions Made

The main problems in 2005 were a lack of investment funds, laws relating to the management of water resources and of modern technology.

In order to improve the income and livelihoods of the poor working in rice-based farming systems, the department rehabilitated and repaired some irrigation systems especially for small and medium schemes. This gives an opportunity for farmers to diversify their activities and intensify crop production. Besides, the department regularly monitors the farmers' fields so that if any problems occur it can intervene on time and effectively.

Key Constraints & Recommendations

The key constraints to the improvement of rice-based farming systems are:

- Lack of water for irrigation;
- Crops varieties used by farmers do not respond to market demands; and
- Lack of techniques related to farm activities.

The design of new project should be oriented to:

- Establish farmers' communities according to their specific abilities;
- Provide training on cultural techniques to farmers; and
- Form regional model farms, which are easy for farmers to adapt.

Key Informant Interview 21 - Dr Tokida Kunihiro, Chief Advisor, JICA, Agricultural Productivity Enhancement Project (BAPEP), Battambang, 13 March 2006

A meeting was held with Dr Tokida Kunihiro, chief adviser, Battambang Agricultural Productivity Enhancement Project (BAPEC), JICA, on March 13, 2006.

Activities & Achievements

The overall goal of the project is to stabilize farmers' livelihoods in the Kamping Puoy area and enhance agricultural productivity in Battambang Province. To reach this goal the project plans to improve rice production technology and the farming practice of participating farmers, including crop diversification and to promote farmers groups' activities. BAPEP started its activities in Kamping Puoy in April 2003 and completed them in March 2006.

The main activities of the project are:

- Grasp of the situation in the target area: conduct surveys of the socio-economic situation, current status of the irrigation system, distribution and marketing of agricultural products, enhancement of collaborative linkages with other organizations.
- Rice production technology improvement: select rice varieties on the basis of farmers' needs; produce quality seeds of selected rice and supply them to farmers; improve rice production technology including double cropping, water management, post-harvest techniques; demonstrate improved rice production technology in paddy fields and conduct training sessions to disseminate them to participating farmers.
- Farm management improvement: formulate the menu for agricultural diversification (introduction of non-rice crops; small scale aquaculture and animal husbandry); formulate and practice farm management plan with model farmers and collaborators; conduct training to disseminate farming model.
- Farmers' Organization and Participatory Development: support initiation of farmer water users communities and conduct training to strengthen them, empower rural women and strengthen farmer group activities, conduct training for government officers concerned with participatory development.

The results of surveys shown that, there are many factors causing the low productivity of agriculture in the project target area. These include the absence of supplementary irrigation, non-availability of high quality seeds, unclear land property rights, labor shortages of widow-headed households and poor access to markets.

Funded by the Japanese Embassy, part of Kamping Puoy irrigation system, which can irrigate about 950ha of cultivated land has been rehabilitated (Kamping Puoy reservoir can irrigate 2,850ha). A Water User Group (WUG), consisting of 1,300 households, was established in accordance with MoWRAM policy. The members should pay a fee to the community for the water used to irrigate their fields. There are difficulties relating to water fee collection, because only half of the members pay. If this situation does not improve, the sustainability of the irrigation system is a big issue that needs to be resolved.

The project has promoted and encouraged farmers in the target areas to use high quality rice seed. Therefore, the project bought some foundation rice seeds from CARDI (including Phka Rumduol, Raing Chey, IR66 and Sen Pidor) and distributed them to rice seed growers to produce registered seeds. The registered seeds were sold to farmers at

800 riel/kg. There was a small cash flow problem between the rice seed growers and rice seed users (delayed payment for purchased rice seeds by farmers to rice seed growers).

In 2004, the seed growers produced 1,890kg of rice seed, and 1,420kg of seed was sold to 19 farmer user groups. In 2005, 50 households introduced high quality rice seeds. The farmers sold their products to rice millers for 400 riel/kg and 700 riel/kg for IR66 and Phka Rumduol respectively. The project changed the foundation seeds every year, because the rice seed growers did not have threshing machines, which can produce seeds during threshing.

Besides rice, the project has introduced vegetables and leguminous crops, as well as pig and chicken raising. To spread new technology to other farmers, the project has organized field visits, field demonstrations and field days. The project had conducted training sessions for farmers to disseminate model farmers activities; for water user groups (WUG) to strengthen water management and transparent accounting systems; and for government officers to do with participatory development.

Problems Encountered & Constraints

During implementation, the project noted that there were some difficulties such as: making linkages between provincial authority and project was not easy, cooperation between PDA and PDoWRAM was not good and needed to be improved, it was difficult to create trust amongst water user group members to do with water fee payment and a lack of participation of all actors in the system.

An improvement in marketing systems remains the most important factor for the successful development of rice-based farming systems in Cambodia.

Plans for Improvement

The JICA project in Kamping Puoy is due for completion at the end of March 2006, but it will be expanded to other communes in the province (maybe four to five communes). The Special Programme for Food Security of FAO will continue the activities of JICA in Kamping Puoy irrigation scheme.

Key Informant Interview 22 - Mr Kong Davun, Branch Manager, Acleda Bank, Kompong Thom, 13 March 2006.

A meeting was held with Mr Koy Davun branch manager of Acleda Bank, in his office at Stung Sen Commune, Kompong Kro Bao District, Kampong Thom Province, on 13 March 2006.

Acleda Bank is a public limited company formed under the laws of the Kingdom of Cambodia. ACLEDA was licensed by the National Bank of Cambodia as a commercial bank on 1 December 2003.

Activities & Achievements

The main activities of the organization are providing credit, deposits and transfer services, cash management, financial trade, cash withdrawal, and travelers check. It is a credit provider (i.e. small credit, medium, and micro credit) and deposits money for people involved in rice-based farming systems. It also acts as a savings bank and transfers money when the bank's clients pay for fertilizers or materials imported from Vietnam and Thailand.

Some achievements of Acleda are as follows:

- Credit service: default rate is very small (less than 1 percent) and it can be negotiated. The payment of interest and principal can be negotiated according to a client's ability to pay, eg. seasonal or monthly repayment. The clients have confidence in the bank.
- Transfer service: 500 to 600 customers use this service to transfer their money across the country or abroad. The total amount of this service is estimated at US\$1 million per year.
- Saving service: Receiving money from farmers who have sold land or rice, the farmer deposits money in the savings account in order to get interest. The total amount of this service is about US\$500,000 per year.

For each of these activities, there is no problem because the bank has very strict rules for staff and provides loans to the right clients. However, the bank at least once a month needs to provide training, such as risk management and client evaluation, especially for the credit service staff.

The Kampong Thom branch has 5,558 clients; currently 264 of these are farmers, about 5 percent of total clients, 530 culture fish culture and 55 customers breed livestock. The total disbursement of credit is over US\$3.1 million with about 20 percent of total credit reaching rice-based farming system customers, at an average interest rate of between 2.3 to 4 percent per month depending on the size of the loan.

Generally collateral, such as land certificate, land title or household assets is required from clients but sometimes this is waived for clients who are very honest and the amount of loan is very small. The default rate on total loans is very low, only 0.8 percent. In addition, the default rate for rice-based farming system customers is even lower (0.13 percent). The growth rate of total credit disbursed over the last three years to rice-based farming system clients is about 55 percent, and there is a prospect of expanding credit over the next three years by about 60 percent.

Recommendations

The most successful examples of innovations in value chain development for rice-based farming systems in Cambodia are when the soil quality, production technique, character of the farmer and land title or ownership are examined. In addition when a farmer borrows money from a bank to buy a hand tractor, pump or fertilizer and pays that money back after the harvest, the income of borrowers increases.

In order to avoid mistakes and design a good agricultural program for improving the income and livelihoods of the poor in rice-based farming systems, the project team should find the market for farmers, provide new technology and provide credit at a very low interest rate.

Acleda's chances of sustainability lie in building trust with clients, however there is a high element of risk in their transactions so that the chances of reaching sustainability are lower than would be wished.

Key Informant Interview 23 - Mr Nam Heng, Branch Manager, Hattha Kasekar, Kompong Thom Province on 13 March 2006.

A meeting was held with Mr Nam Heng Thaneakea Phum (TPC) branch manager in his office, at Domrey Chuan Khla Village, Stung Sen Commune, Domrey Chuan Khla District, Kampong Thom Province, on 13 March 2006.

Activities & Achievements

The main activity of the organization is the provision of credit with a saving obligation. They provide credit to dry rice farmers, fish culture households, crop and vegetable farmers and livestock raisers. For savers, there is an obligation that they have to save US\$1/month.

As a credit provider no farmer has defaulted, farmers have been able to increase the size of their loan, and only occasionally pay late. The savings provision is a good service and clients tell other farmers to increase the client base, and this has increased the overall level of savings.

TPC has 1,825 clients, currently 730 of these are involved in rice-based farming systems, about 40 percent of total clients. These include farmers, traders, and small businesses at home and around market. The total disbursement of credit is US\$506,162, with about 47 percent of total credit reaching rice-based farming system customers, at an average interest rate of between 2 to 4 percent per month depending on the level of borrowing and type of payment, eg. 4 percent on a loan from US\$50 to US\$1,000 over three to 12 months; 2.5 percent on loans of US\$1,000 to US\$2500 and 2 percent on loans above US\$2,500.

The default rate on total loans is about 1.6 percent, but the default rate for rice-based farming system customers is lower. The growth rate of total credit disbursed in the past three years to rice-based farming system is about 36 percent with the further prospect of increasing credit over the next three years by about 40 percent.

In 2004, there were only 163 households who borrowed more than US\$20, while in 2005 this had increased to 400 households. Therefore there is an increasing amount of capital and profit from savings.

Problems Encountered & Improvements Recommended

There is high competition because of the increasing number of MFIs in the province. Clients will have problem in the near future due to other MFIs providing them with loans, which they will not be able to repay. TPC tries to explain to customers the policy and rules of MFI to use loans for the right purpose and the ability of customers to pay back the loan and the benefits to their activities and family.

The main contributions of TPC to improving the income and livelihoods of the poor is through providing credit to farmers and explaining how to use loans for new activities. This can create income-generating activities. The main purpose of borrowing is different according to the size of loan. For instance, clients who borrow more than US\$5,000, are using it for big business like buying a car for renting out or running a taxi.

Recommendations

The most successful examples of innovations in value chain development for rice-based farming systems in Cambodia are to expand areas of credit and to improve farmers'

knowledge of activities related to agricultural cultivation, livestock, vegetables and others crops.

In order to avoid mistakes and design a good agricultural program for improving the income and livelihoods of the poor in rice-based farming systems, the project team should:

- Train farmers in new methods for planting because they just do what they have traditionally done or see others farmers doing;
- Provide some technical assistance;
- Improve agricultural knowledge to reduce inputs and labor but increase outputs.

TPC's chances for achieving sustainability lie in the good methods, technique, experience and real information they provide and their close cooperation with the local authority.

Key Informant Interview 24 - Mr El Soy, Director, and Mr So Sovath, Deputy Director, DRD, Battambang, 13 March 2006.

A meeting was held with Mr El Soy, director and Mr So Sovath, deputy director of the Provincial Department of Rural Development at their office in Battambang Province on 13 March 2006.

The department of Rural Development was established in 1994 with the goal of alleviating the poverty of the rural poor.

Activities & Achievements

There is no specific program for agriculture. As part of their Community Development (CD) and Human Resources Development (HRD) programs they have established Village Development Committees (VDCs) and provided training sessions related to people's roles and responsibilities, their vision of community development, preparing for village planning, villagers' participation in development, leadership and gender.

The department has also constructed rural roads, bridges, culverts as means of transportation including agricultural products, schools and health centers. It has also organized a tender strategy for all construction works and established committees for the maintenance of this infrastructure.

In addition it has provided and constructed tube wells, open wells, integrated wells, ponds, rainfall collection jars, water filter cans, which can improve health, currently 25 percent of rural people have access to safe water. It has also provided family hygiene toilets, training on body hygiene, household hygiene, how to use hygienic toilets and use of clean water. However, the farmers also contribute half of total costs.

Finally the department provides agricultural credit such as fertilizers, seeds, motor-pumps, etc to farmers at 3 percent interest.

Problems Identified

VDCs worked when the projects were still there, but when they left some VDC members left and went to find jobs in Thailand and the department does not have sufficient money to reestablish them.

The bidding methodology for any construction was not fair and lacked skilled technicians to manage the construction works, which caused low quality of outputs and lack of maintenance committees for some infrastructure after construction.

Local people didn't have the technical knowledge to repair tube wells, which make some wells useless.

Also the implementation of agricultural credits failed due to natural disasters. Therefore, credit on small scale processing activities was successful. In order to improve the income and livelihoods of the poor who are working in rice-based farming systems, the department provided training sessions to VDCs and CDCs, constructed roads and bridges to facilitate the communication and transportation of rural people, provided water sanitation and hygienic toilets to people in target areas, which can reduced infectious diseases and villagers' expenditure and provided credit to farmers to diversify their activities.

Key Constraints & Plans for Improvement

The key constraints to the improvement of rice-based farming system are:

- Access to safe water is limited;
- Lack of sources of water to irrigate crops;
- Road infrastructure is poor and very limited;
- Lack of credit for agricultural production; and
- Agricultural land is insufficient (some areas are charged with mines).

In the future, in order to overcome these constraints, the department will continue to develop farmers' community and construct and rehabilitate the rural infrastructure including roads, bridges, schools and health centers; supply water sanitation; and provide rural credit to farmers.

Recommendations

Most successful interventions:

- Give authority to grassroots (VDC and CDC) in planning activities for implementation in their villages, and use participatory approaches;
- Establish committees that are trained and understand their roles and responsibilities;
- Involve all stakeholders including public sector, private sector, NGOs and local authorities; and
- Tender transparently so that the quality of work is guaranteed and strictly controlled by skillful specialists.

Therefore in designing the new program the project team should meet with specialized institutions to discuss policy; select targets responding to the objectives of the projects; organize discussion meetings with district authorities with the participation of local institutions and commune councils; and provide opportunities to share ideas with specialized institutions, NGOs, other projects and private sectors on overall technical issues.

Key Informant Interview 25 - Mr Pou Phila, Owner, Input Trader, Battambang, 13 March 2006.

A meeting was held with Mr Pau Phila, an input trader, at this store in Ouchar village, Battambang District, Battambang Province on March 13, 2006.

Activities & Achievements

Mr Pao Phila is an input trader of chemical fertilizers, animal feed and animal medicine. His parents worked in this business since 1988 when they sold only chemical fertilizers and pesticides in Battambang because nobody was raising animals then. In 1998 his parents transferred the business to him, but told him not to trade in pesticides due to health risks.

Each year he has sold 1,000 tonnes of chemical fertilizer, around 1,000 tonnes of animal feed and 20,000 dozen pieces of medicines to wholesalers and farmers in Battambang and Pursat provinces. In Battambang he has wholesale clients in six districts and 90 percent of his products are sold to wholesalers and only 10 percent of his products sold directly to farmers or private agribusinesses.

Compared to five years ago his business is doing much better because he used to sell annually only 300 tonnes of chemical fertilizers, 100 tonnes of animal feed and 100 dozens of animal medicine.

The chemical fertilizers and animal feed come from Vietnam and Thailand but most animal medicine come from Vietnam, he said that he imports from Vietnam because they are much cheaper there than in other countries and the quality is acceptable for users.

He employs three agents to promote his goods in Battambang and to explain to farmers about improving the soil quality and increasing yield by using chemical fertilizers, and the benefits of animal feed and medicine and some times he hires staff from the Department of Agriculture to do promotion.

He has advertised on newspapers and radio because farmers do not have enough knowledge on how to use chemical fertilizers and animal feed and do not follow the guidance that he provides them, and to sell credit to wholesalers.

The main contribution of his business to improving the income of farmers' livelihood is to change farmers from raising animals for family consumption to commercial raising, such as increasing the number of farms raising pigs and chickens in Battambang. Rice and vegetable yield is increased by using chemical fertilizers, for instance before rice yield was only 1.5 - 2 tonnes/ha but after using fertilizers it is 3 - 3.5 tonnes/ha. He cited two farmers, Mr Than in Andong Chenh village and Mr Reoun in Ang village, who have both changed from raising pigs and chicken from family consumption only to commercial raising.

Key Constraints & Plans for Improvement

The key constraints to the improvement of rice-based farming systems are animal diseases especially bird flu, limited staff for agricultural extension projects and market information about vegetables for farmers.

His business plan over the next five years is to increase selling and to set up his own animal feed processing center in Battambang. There are several commercial banks and

credit institutions, such as Aceda Bank, Cambodia Commercial Bank and CANADIA Bank, Amreth credit and other credit institutions, but interest rates are high and loans require more collateral than he can afford.

Ranking of constraints:

- Animal diseases (bird flu);
- Natural disaster (drought and flood); and
- Technical assistant for agricultural activities.

The main lesson is to increase communication between wholesalers and farmers by providing extension staff to villages for promotion of input products and some knowledge of agricultural activities, providing good quality products (fertilizers, animal feed and animal medicine).

Key Informant Interview 26 - Mr Ou Boosphorn, Director of PDA, Kampong Thom, 13 March 2006.

A meeting was held with Mr Ou Boosphorn, director of PDA, Kampong Thom Province on 13 March 2006.

Main Activities & Achievements

Twenty-six percent of the provincial population is living under the poverty line.

PDA has run a Community Based Rural Development project since 2001. It covers 504 out of the 737 villages in the province providing rice seed following SARI and encouraging vegetable production and raising of chickens and pigs, the establishment of fishery groups of 20-30 farmers and fish ponds, and agricultural communities (since 2004). Four cooperatives have been established in four districts to date.

It also provides extension activities in existing projects like CAAEP II, CBRD and Stung Chinit irrigation project.

More than 50 percent of farmers have changed their variety of rice. The yield has changed from 1 to 1.9 tones/ha in the wet season and 3 to 5 tones in the dry season. Animal raising has increased by 3 to 4 percent compared with five years ago. Not only rice but other crops have increased yields like water melon, soybean (6,000 tones/yr) and cashew nut (3,000 to 5,000 tones/yr).

Problems Encountered & Plans for Improvement

There is a lack of technical staff, knowledge and skills. The budget is not sufficient to implement the activities properly and the budget management system is complex. There is also a lack of collaboration between departments, for instance the DoWRAM thinks about irrigation and the DRD thinks about roads, the PDA focus only on crops and animals.

Through the Provincial Investment Fund the PDA has improved small-scale irrigation systems, improved rice growing techniques, soil improvement, extension services and Integrated Farming Systems.

It takes at least three years for rice to be recognized by the inspection committee. They have set up mill user groups and now send the milled rice to Siem Reap. They have found that only growing rice does not increase income, and that crop diversification is more profitable.

Recommendation

The project should work closely with the department as an advisory body and the department will implement the activities.

Key Informant Interview 27 - Mr Hak Puthy, Deputy Director of DOWRAM, Kompong Thom, 13 March 2006.

A meeting was held with Mr Hak Puthy, deputy director of DoWRAM in Kompong Thom Province on 13 March 2006.

Main Activities & Achievements

There are 348 irrigation schemes in the province divided into two parts: the upper part of the national road and the lower part. The upper part, which is not totally flooded during wet season, has 274 schemes and the lower part which is always flooded has 74 schemes.

The department plans to construct 17 water reservoirs (2km x 3km each) for dry season crops. It also plans to support the rehabilitation of 25 schemes under an APIP project (less than US\$100,000 or US\$150-250/ha) and a further 25 schemes under an IFAD scheme (US\$100,000 - US\$250,000 or unit cost US\$300-500/ha). It is also rehabilitating two irrigation schemes at Stung Staung (US\$1,995,000 - started in 2005, and can irrigate up to 25,000ha) and at Stung Chinit, which can irrigate up to 20,000ha.

The Stung Chinit Irrigation and Rural Infrastructure scheme, which will be managed by MoWRAM, comprises of a Farmer Community and Extension Service, irrigation and infrastructure, rural infrastructure and management systems (the Stung Chinit Reservoir Management Committee).

WUGs have been established in 42 locations with the water fee, which varies from location to location, from 5,000 riel to 40,000 riel/ha/yr. About half of the groups are going well, especially where they are supported by projects.

Problems Encountered

Members often do not pay the water fees and the WUGs only work well when there are projects there.

Plans for Improvement

Repairing and maintaining the existing irrigation schemes is a major future priority for DoWRAM.

Key Informant Interview 28 - Mr Chuop Setha, Director of DRD, Kampong Thom, 13 March 2006

A meeting was held with Mr Chuop Setha, director of DRD, at Kampong Thom on 13 March 2006.

Activities & Achievements

About 800km of road has been repaired through the food for work program (WFP) and road maintenance committees have been established in each location. A CBRD project provides US\$500 per commune per year for road maintenance.

Since 1995, 390 Village Development Committees (VDCs) have been formed out of 737 villages, some are supported by the department and some by the projects. About a thousand wells have been dug in rural areas so that now 20 to 30 percent of the rural population has wells for drinking water. The clean water program is supported by UNICEF, IFAT and WVI. A health and sanitation program is coordinated with the Department of Health.

Problems encountered & Main Contributions

The main difficulty is in maintaining roads interconnecting communes far from villages. The roads where there is no support from the committee are quickly damaged.

There are many groups in one village (WUG, Credit, seed committee, organic vegetable group etc). Some projects recognize the existing VDCs, but they don't use them. They form committees by themselves.

There has been strong support from GTZ on Human Resource Development to train committees on road maintenance, strengthen the capacity of VDCs through training in leadership and communication skills, proposal and report writing. They also train farmers in using clean water, primary health care and sanitation.

Key Constraints & Plans for Improvement

The extension services are limited and collaboration between departments is weak (especially DA, DoWRAM and DRD). There is also a lack of relationship between VDCs and farmers, especially as the VDC should know clearly what are the needs of villagers.

The Department will complete rural road construction, improve health by providing clean drinking water (40 to 50 percent of the rural population can access clean water) and strengthen the capacity of decentralized rural authorities.

Recommendations

Rice, cassava and cashew nuts should be processed before export. The government should send students to study this subject outside the country. The project should work closely with concerned departments (DA, DoWRAM, DRD) and have the full participation of farmers.

Key Informant Interview 29 - Mr Siv Chhoeun, Coordinator of National Program for Food Security and Poverty Reduction, FAO, Kampong Thom, 13 March 2006.

A meeting was held with Mr Siv Chhoeun, coordinator of the National Program for Food Security and Poverty Reduction, FAO on 13 March 2006.

Activities & Achievements

The project started in 2004 and will end in June 2006. FFS is working in two districts: Kompong Svay and Staung (12 villages per district). The selection of villages was done through commune assessment and a district level seminar. Twelve schools were organized per district with 30 participants per school.

It provides training on rice and vegetable production, animal raising, gender and hygiene. It also arranges demonstrations on fish, frog and earthworm raising.

Up to 15 people out of the FFS participants have formed their own savings group. The project provides US\$20 per participant after four months saving. Most of them use this money to raise animals.

The Community Micro Project (CMP) grants US\$900 per village for the establishment of a rice bank. Six out of 24 villages were established, the other 18 are on-going. The committee of the project consists of five members: the village chief, VDC, two savings group members and an elderly member of the community.

Seventy percent of participants in the FFS have achieved success, others have dropped out and found new jobs. In the savings groups, members can use their capital to carry out income generating activities, such as animal-raising and vegetable growing. The CMP has only just started, each village contributes labor, storage materials and paddy (15kg/family) to the project.

Problems Encountered & Main Contributions

There is no staff to follow up and monitor activities, there is only one technical member of staff at the provincial level. The district staff have limited skills and knowledge and the CMP committee is not responsible enough to perform their duties.

Fish-raising has proved most successful after FFS was concluded. Chicken-raising is one income generating activity for savings groups and farmers can earn between 80,000 to 100,000 riel within six months. The program has strengthened technical support to all stakeholders.

Key Constraints

Some participants in the FFS dropped out and found new jobs, pilot schemes were sometimes unsuccessful, eg. Frog-raising, as when the frogs grew bigger they disappeared. Also the committees proved not strong enough, nor had sufficient commitment to do the job.

Recommendations

FFS's biggest success was in doing a demonstration, therefore it is important to establish demonstration pilots with the full participation of the farmers and then successful results will be adapted by the farmers.

The project should recruit local staff (especially at district level) as much as possible in order to ensure the activities go well.

Key Informant Interview 30 - Mr Seng Map, Noodle processor, Battambang on 14 March 2006.

A meeting was held with Mr Seng Map, a noodle processor, at his business in Watrom Doul village, Battambang District, Battambang Province on March 14, 2006.

Activities & Achievements

The rice noodle-processing factory was established in 1992 with a capacity of only 200 - 500kg of noodle per day but production has increased each year until now the capacity is 2,000kg of rice and about 2,300 kilogram of noodle per day. It supplies all districts in Battambang and Pailin, selling to wholesalers and noodle soup businesspeople and employing 35 people. The noodle factory burns rice husk to steam the noodle processing.

Seng Map has promoted and expanded the market, built relationship with clients by selling on credit, upgraded the processing system and improved the quality of the noodle as much as he can.

The factory needs to improve quality even though the noodle factory has a good market, but it is still facing quality issues. The quality is acceptable only for the domestic market but is low when compared with imported noodle and the noodle can only be kept for a week. The rice noodle processing system also needs to be improved because of pollutants from rice husks in the furnace and complaints from the villagers living around the factory.

Constraints & Contributions

The key constraints to the improvement of rice-based farming systems are natural disasters, such as drought and flood and the rice quality, which is sometimes mixed with colored kernel and weed so that the noodle turns yellow and cannot be kept for long.

Ranking of constraints

- Technology for improving the quality of noodle;
- Market for fresh noodle.

The main contribution of the noodle factory to improving farmers' livelihoods is by providing labor to villagers and rice husk from the factory to make compost for improving soil, previously they went to Phnom Penh or Thailand to look for work.

In Battambang there are several commercial banks and credit institutions, such as Acleda Bank, Cambodia Commercial Bank and Canadia Bank, Amreth credit and other credit institutions, but the interest rate is high and requires more collateral than is acceptable.

Lessons Learned, Problems & Plans

Noodle factories should improve their production technology if they are to become competitive with Thailand and Vietnam. They have problems with their rice husk furnace. The smoke from the factory furnace currently affects the health of the villagers and the employees working in factory.

There is also a problem with understanding production costs. Rice noodle is sold at a constant price of approximately 1,400 riel/kg. Because the entrepreneur cannot calculate the operating costs, he cannot identify which aspects of his production process may be

inefficient, and in turn, work to lower its overall cost. It is also difficult to calculate accurately how much profit the factory makes.

The current quality of the rice noodle is below par. Noodles must be sold within five days before they spoil. The noodles lack elasticity, which is popular among local consumers. Finally, the rice noodle manufacturer has had problems with developing a dry rice noodle product to introduce to the market.

Once the many issues regarding production technology, the factory itself, and quality issues have been evaluated the factory will then be in a better position to work on its marketing. The factory currently has no plan of action to prepare for the increased competitive environment.

Key Informant Interview 31 - Mr Frank Kuklinski, GTZ – DED, Kampong Thom, 14 March 2006

Activities & Achievements

Organic Rice Production:

GTZ is supporting organic rice production in Kampong Thom. This started in 2003 and so far 200 tonnes of certified organic rice has been produced this year, on 90 hectares of fully converted paddy. This has been certified by BCS (a German company). There is another 600 hectares of paddy which is undergoing the conversion process. This non-certified rice is sold domestically as “conversion” rice called Saravan Rice. For the organic rice, some 50 tonnes has been sold to the CCRD Cooperative under COFA (Cooperative of Farming Associations) for sale onto the international market.

The main achievements have been the 20 percent price premium granted by CCRD for the organic rice, as well as higher yields. This has been combined with the linking with CCRD to access the international Markets. The certification procedures are important in this regard

Farmer Organization:

In order to facilitate the process of organic rice production GTZ has also been involved in setting up farmer associations. There is currently 500 farmer members in 2 associations which are about to be merged into a cooperative.

It is important to have cooperatives and farmer organizations that are able to manage their affairs. At this stage there has not been any evaluation of the financial viability of these organizations.

Extension Services:

GTZ was also working with CEDAC providing extension services for rice production. This was prior to moving into more Rural Development operations under the IFAD loan. This involved Farmer to Farmer extension (farmer promoter) with rice, livestock etc. The IFAD program is now running demonstration trials in target villages for wet season and dry season rice production as well as integrated rice-fish production. This includes demonstration plots, field days, and farmer classes. There is a detailed implementation program which has to be followed for each of these target villages.

There is no data as yet on the success or not of these IFAD demonstrations trials. There is little integrated rice-fish farming going on but the technology is well adapted for smallholders. There is currently one staff working on this but there are no good examples from the field.

SRI:

Also with CEDAC, GTZ is working with SRI (System of Rice Intensification). This is combined with the organic program and most of the farmers who are doing organic rice production are also involved in the SRI.

There are supposedly higher yields from this technology, but the information is a bit lacking. There are several evaluation reports:

- Evaluation of SRI Impact in Cambodia 2001-2003 by the Cambodian Center for Agricultural Studies and Development (CEDAC)
- An Assessment of Ecological System of Rice Intensification (SRI) in Cambodia in Wet Season 2002, a CEDAC field document (pdf) edited by Yang Saing Koma and Suon Siny (January 2004, 8p.), provides analyses of SRI yield and adoption rates as well as summaries of farmer perceptions and technology adaptation.
- Anthofer, Jürgen, "The Potential of the System of Rice Intensification (SRI) for Poverty Reduction in Cambodia," in (on-line) Proceedings of the Conference on Rural Poverty Reduction through Research for Development and Transformation: International research on food security, natural resource management and rural development. Deutscher Tropentag, October 5 - 7, 2004. Humboldt-Universität zu Berlin

These indicate that there is no increase in labor rates and are appropriate for small and poor farmers as well as larger farmers.

Problems Encountered & Improvements Needed

In terms of the organic rice project, there are problems with trade financing and there is a need for cash. Side-selling is an issue and there is a need to link sustainably with export markets.

In terms of the associations, there are weaknesses in the structural set up of the associations and there is a lack of business experience with the local extension and project staff meaning that it is difficult to train the association members if the training staff are themselves weak.

In terms of the IFAD project, there are no reliable data on performance since the project works through the OAE and PDAPP. There is no data on adoption rates, rates of improved seed use and nutrient management. In all probability the adoption rate is quite low.

With SRI, there are still a lot of issues unresolved between researchers and practitioners. According to researchers there will be a long term nutrient breakdown with the aeration of the soil and problems with water management. However, practitioners seem to discount this.

Main Contributions & Key Constraints

GTZ is not really sure what the income benefit of the organic rice project and the formation of farmer associations has been but there will be a Student coming in August 2006 who will look at this issue. GTZ thinks there has been a benefit, but no data now.

For the farmer cooperatives, the fees paid by the farmers are 500 riel for the inspection of the paddy, and a marketing fee. The cooperative gets a 150 percent return on the value of the rice seed when they sell to the farmers. However, this does not cover the overhead costs of running the cooperatives.

GTZ is going to commission an audit of the associations. There is no management system in place yet but the associations have been going since 2003 and are due to stop getting GTZ support in 2007.

The main contribution of GTZ has been to provide a secure outlet for farmers' produce as well as providing training and followup.

The key constraint is water management and protection against seasonal flooding from the Tonle Sap lake.

Future Plans

GTZ needs to find an exit strategy. To do this, the cooperatives need to be strengthened in internal management procedures. This includes communication, transparency, accountability, financial management, business skills for marketing, and developing market linkages.

The issues of business skills and market linkages are very important for the future, and there has been too much emphasis by project staff on production issues. As such, there is a lack of sustainability in the cooperatives.

In the future, the cooperatives may wish to move into other activities rather than just organic rice. These may include Cashewnut, organic vegetables etc. It may be possible to use the association structure and the certification procedures used for rice and extend to organic vegetables.

Major Lessons

- a. Before starting a value chain intervention, need to try to keep within the budget and it needs to be sustainable
- b. need to be well thought through to ensure success. The inputs from the project should be limited to management, grants for capital equipment. Need contributions from beneficiaries so they get a sense of ownership right from the start.
- c. the AEA procedure is very formulaistic and the outcomes are very similar – the process is almost self-fulfilling.

Key Informant Interview 32 - Mr Ren Dorn and Ren Sameth, farmers, Kompong Thom, 14 March 2006.

Meeting with Mr Ren Dorn and Mr Pen Sameth at a farmer's house, in Sam Proach Commune, Stong District, Kampong Thom Province, on 14 March 2006.

Activities & Achievements

They farm rice, dry rice in particular, on 270ha of land, but 70ha was destroyed due to wild ducks and teal eating the rice seed sown in the field and they do not use pesticides and the depth of water in the rice fields is only 1cm. In total, about 70 percent of the rice fields was destroyed.

There are four shareholders, the two of them, Mr Hy Sovanara and one of his relative. They do not do rice fish culture yet, but they plan to start next year and they also plan to grow corn, soybean and other crops.

They started to farm dry rice in May 2005, but it failed due to floods and the wet season coming too soon, lack of technique and lack of water too. Last year, they could harvest only about 100ha and the total rice produced was around 100 tonnes, but they gave 50 tonnes of rice to workers.

In 2004, Pen Sameth worked as an extension officer at Apsara Tourism Company. He lives in Siem Reap province. He has a younger brother, who lives in Stung District and works as a government officer at the Department of Education in Stung district. Both of them have proposed land concessions at commune, district and provincial councils. The provincial committee created a committee to consider their suggestion. In May 2005, the proposition was approved and at the same time there was an inundation. In December 2004, they started to dig the canal and prepare the irrigation system. In May 2005, they started farming rice.

The provincial Department of Agriculture sells the seed on credit to them (for example, sell 10 tonnes of seed, they have to repay 11 tonnes of rice) based on market price. In Vietnam, they use 250 and 300 kg of seed/ha and five to eight bags of fertilizer/ha, they thus can harvest 7 to 12 tonnes/ha. In Takeo, they use 150 to 200 kg of seed/ha and they can harvest 5 to 8 tonnes/ha. In Kampong Tom, they use about 80 to 100 kg of seed and two bags of fertilizer/ha, they can harvest 3 tonnes/ha.

Problems Encountered & Improvements Needed

There is a problem with lack of capital to buy farm machinery such as machines for raking, sowing, plowing, pesticide spraying and fertilizer distributing, also they were either late with the planting and harvesting of the rice, or did so at the wrong time. When using human labor, they face difficulties such as high cost, lack of labor and it takes a long time.

They estimated that the rice yield is 3 tonnes/ha, but they are not satisfied because this yield is not enough to cover input costs. It should be 5 to 6 tonnes/ha. They need to identify rice varieties IR66 and Sen Pidor (four months cycle), and IR 504 (short period, three months cycle)), planting techniques and how to use fertilizer more efficiently.

Main Contributions & Key Constraints

The main contributions for improving the income and livelihoods of the poor are:

- Provide job opportunities to local people;

- Provide rice and cash income (7,000 riel/day);
- Help local people in three border villages; and
- Alleviate poverty and starvation.

Key constraints to the improvement of rice-base farming systems are marketing and the lack of technology. Now they sell the rice to local people only because the production is still small. They have studied the market in bordering Vietnam, Neak Leung and have received documents from the Provincial Department of Agriculture.

Recommendations

The Project Team should provide knowledge on planting techniques and how to use fertilizer in order to produce high yields (how to use many kilograms of seed, what type of seed and what type of pesticide, etc).

Key Informant Interview 33 - Ms Hour Lang Srun, Soybean Processor, Kampong Thom, 14 March 2006.

A meeting was held with Ms. Hour Lean Srun at her soybean processing factory, Domrey Chaun Khla village, Stung Sen Commune, Domrey Chaun Khla District, Kampong Thom Province on March 14 2006.

Activities & Achievements

Hour Lean Srun is 66-years-old and has six children. She started her business in 1979, learning soybean processing from her aunt. The main activities of her business are processing sweet soybean and selling soybean at Kampong Thom market. She stocks some soybean for process activities. Now her child helps her to process soybean. In 2006, she produced about 300kg/month at 800 to 1,000 riel/kg. There is no competitor in the village and she makes good processed soybean.

Problems encountered & Main Contributions

The main problem is the high competition as there are many soybean sellers in the provincial market. In 2004, she sold 50,000 riel/day, but now she can sell only 30,000 riel/day. She wants to stop processing soybean because she thinks she is getting too old.

Before she bought soybean from Kampong Thmar, but now she buys from Preah Vihea Province. In 2005, the price of soybean was 1,400 Riel/kg but in 2006, the price of soybean is only 1,050 Riel/kg.

Key Constraint

Her key constraints are that she has no successor because her children want to continue their study in orders to find other work and she wants to retire. She wants her daughter to continue the business, but she has not yet finished school.

Key Informant Interview 34 - Mr Chhun Nguon Hong, Miller, Kompong Thom on 14 March 2006.

A meeting was held with Mr. Chhun Nguon Hong, a mill owner, in Chheu Teal village, Stung Sen Commune, Kampong Chin Tbaung District, Kampong Thom Province on 14 March 2006.

Activities & Achievements

The main activities of the organization are buying, selling and milling rice. He started the business since 1998. Before he was a butcher and he set up business with his neighbor, Mr. Chieu Heng Tang.

He has some loyal rice sellers and buyers both in the province and in Preah Vihea and Siem Reap provinces. There has been an improvement in the mill's equipment and materials leading to an increase in the quality of milling. The proportion of his clients in Phnom Penh is 50-60 percent, Siem Reap about 10 percent, Kampong Thom about 20 percent and Kompong Cham about 20 percent.

Problems Encountered & Main Contributions

There is less market for rice so he has put some of paddy in stock as it cannot be sold and the quality of paddy varies because of the low seed quality. Money is borrowed at a high interest rate of 10 percent.

The main contributions of the PDRD to improving the income and livelihoods of the poor is to find markets for farmers, because if there is no mill, farmers have difficult selling their paddy to provide some jobs to the local people (about 5-10 people with monthly salary of 200,000 riel).

Key Constraints & Recommendations

The key constraints are marketing to the international market, the price of rice as well as the lack of standard quality of rice, which is dependent on individual farmers.

He feels that the most important things are to have a creative idea and try hard to accomplish it; to have capital; to build a dam to maintain the water supply in order to plant dry rice; and to ask the authority to plant rice when the land is free.

In order to avoid mistakes and design a good agricultural program for improving the income and livelihoods of the poor in rice-based farming systems, the project team should:

- Identify rice seed variety for farmers;
- Provide technology and methodology; and
- Provide equipment and materials.

Key Informant Interview 35 - Mr Iv Vanna, Farmer, Kampong Thom, on 14 March 2006.

A meeting was held at the house of farmer Mr Iv Vanna in Kampong Krabao Village, Kampong Krabao Commune, Stun Sen District, Kampong Thom Province on 14 March 2006.

Activities & Achievements

His background was as a medical doctor, but he has worked as a farmer since 2000. His five main activities are rice farming, culturing fish, pig raising, crocodile farming, and selling soil.

He started dry rice farming in 2004, learning the rice planting technique from Vietnam, including land preparation, irrigation, fertilizer and use of pesticide. In the beginning, he experimented on 10 hectares of land and produced about four tones per hectare on low quality soil, land that local people could produce only 500kg/ha. However, he could get high yield, due to he using good seeds and the right technique, such as land preparation, water management and planting at the right time too. In his other area, in Reang Te village, which is flooded during the wet season under four meters of water, he can produce 4 to 8 tonnes/ha.

In 2005, he built a water storage and canal system on 1,000 hectares of concession land, at a cost of around US\$10,000. This year he has planted rice on 400 hectares of land.

Problems Encountered

The main problems have been a lack of capital for preparing land, good seed and technology. The government policy on land management is not clear yet and lacks land title, so he has no confidence in stable rice farming. If he has land title, he can borrow money from private bank for his business. There is also a lack of supporting from government to poor farmers.

It is difficult to bring fingerlings from Phnom Penh, because they said it is an illegal activity. He has also encountered a lack of support from the provincial governor and Department of Agriculture on technical assistance, importing good pigs from abroad, pig food is expensive and pigs fetch a low price and so there is less profit.

Main Contributions

His farm provides job opportunities increasing income and changing farmers' habits from planting wet season to dry rice season by using water irrigation. He expects to get 4 – 8 tones/ha.

Fish culture is one area where it is easy to get profit and never lose. It is easy to sell fish at his pond. He also thinks it is important to change farmers' habits from raising native pigs to importing pigs.

Key Constraints & Recommendations

He has found that the key constraints to his business are:

- Lack of capital to expand the business;
- No land title to put as collateral fro the bank; and
- Lack of support from government on technical assistance

In order to avoid mistakes and design a good agricultural program for improving the income and livelihoods of the poor in rice-based farming systems, the project team should help and support commercialized farmers first, because these people can lead the poor farmer to work. Then the medium farmer will follow and finally they can help poor farmers by providing job opportunities and increasing income.

Key Informant Interview 36. Ms Bun Kimsan, Executive Director, Agricultural Development Action (ADA), Battambang, 16 March 2006

ADA was constituted as a local NGO in 1998. Before then it operated under a French NGO (now Handicap International) conducting mostly emergency operations. The NGO has 26 staff; many of the staff are former employees of the Department of Agriculture and have a good technical background on agriculture. Since 2002, the NGO has focused on development activities focusing on the very poor. The main difference between ADA and other NGO is its focus on agricultural activities.

The main activities of the NGO include:

1. Promotion of paddy cultivation
2. Establishment of farmer groups and rice seed stores
3. System for Rice Intensification (SRI)
4. Improvement in soil fertility
5. Vegetable production
6. Integrated rice systems
7. Cash crops (soya, peanuts, corn, sesame)
8. Fruit production (mango, coconut, jackfruit, citrus)
9. Mushrooms
10. Flower
11. Livestock (cattle, pigs, and chicken)
12. Aquaculture

The NGO helps community to organize themselves, train the community, provides technical assistance and provides management training. The aim is to ensure the community can be sustainable after project interventions. In the past, sustainability and impact were not achieved, partly as the result of focusing on emergency interventions. More recently, the NGO is making an effort at introducing diversification in agricultural activities and since 2004 has adopted a M&E system to allow evaluation of impact. By the end of 2006 and external evaluation will take place.

Current budget is about \$200,000 per year. The main projects in which ADA is involved is the Food Security Project of EU, a project funded by Ockenden International (UK), and a project on Community Livelihood Based Enhancement funded by the Japan Fund for Poverty Reduction through ADB/CARE, and UNICEF projects related to trafficking of children and literacy/vocational training.

The total number of households reached by ADA is 1,600 with new additions in the most recent year of 800 households. ADA provides also microfinance to its community based organization. Typically loans are disbursed at 3 percent monthly interest and vary between \$65 and \$150 per household.

Grants, rather than loans, are provided for the purpose of demonstration leading to innovations in technology adoption. For example, a recent demonstration involved pig feeding.

The target groups include the very poor, vulnerable households, handicapped, widows, destitute households, female-headed households, When targeting interventions, ADB typically creates mixed group of households where the majority are from the very poor, but also include some households from medium income strata in order to ensure that

demonstrations could be successful. For example, a typical mixes group would include 50 percent of very poor, 30 percent poor, 15 percent under medium, and 5 percent medium households.

These group are very risky. Default rates reach 8-10 percent of loans.

Major achievements

- Learning how to work with the poor. The households who are poor are poor in everything (assets, education, capacity, access to markets, technology, linkages)
- Learn how to work with government agencies (particularly with the extension department)
- Established 11 steps process to access grants, through constitution of groups and saving schemes
- Use of mental health training to meet problems related to drugs, HIV, drinking.

Main constraints

- Lack of irrigation and dependence on rainfall
- Poor infrastructure and access to markets
- Lack of drying equipment
- Lack of proper storage
- High gasoline price make use of irrigation uneconomic
- Conflicts related to land and inter-households relations

Lessons

Phasing out. It is relatively well know how to into a community and organize it in order to conduct interventions that are developmental in nature. What is little know is how to get out of the community and leave it on a self-sustaining path. New projects should have the phase out strategy clarified at the beginning of the project itself. Over the course of a 5 year project with a community, the project should be able to get out of the community and leave it on a self sustaining path.

Key Informant Interview 37. Mr Phou Poy, President, Chamber of Commerce and Industry, Battambang, 14 March 2006

The President indicated that most activities in Battambang are related to agriculture and agribusiness. The Governor has also made strong suggestions to promote SMEs in processing raw materials available in the province. Chamber of Commerce has taken responsibility for facilitating the development of the private sector in the province. However, even though in the past there have been several efforts to attract FDI for agribusiness development, the experience so far has not yielded results in this area. The effort at attracting FDI were not very productive because of constraints related to policy, capital, and technology.

Both domestic and foreign investors are not willing to invest since export of raw material (particularly paddy) makes it very difficult for processors to survive. Similarly, unrestrained imports of cheaper products represent a challenge that the industry is not able to meet at the moment because of high cost of production.

Recently, one outside investor in rice milling has to close the factory because of the difficulty of procuring paddy. Moreover, the two neighboring countries (Viet Nam and Thailand) do not accept milled rice from Cambodia but only paddy.

Rice mills are currently mostly in the business of exporting paddy rather than rice milling.

On the import side, many importers do not pay taxes, making it difficult to compete for regular importers or for local industry. Moreover, while the Government of Cambodia allows to import everything (even lemongrass), the neighboring countries have a more strict control of their own imports.

Agribusiness could have better chance in exporting cash crops (soybeans, mungbeans, corn); however, the production of cash crops is very unstable.

The Chamber of Commerce of Battambang includes 15 selected members, 11 advisory members, and 457 ordinary members. When comparing the Chamber of Commerce in Battambang with the Chamber of Commerce in Phnom Penh, the main difference is that the Chamber of Commerce in Phnom Penh includes mostly large companies of national scope whereas the Chamber of Commerce in Battambang includes mostly small companies engaged in processing.

Some of the activities of the Chamber of Commerce include:

- Formed a processors group in December 2004
- Study tour to Thailand
- Provide loans to members
- Signed MOU with Thailand

About Credit

Commercial banks are reluctant to provide loans to agroprocessing industry because it is perceived to be too risky. Moreover, the banks do not give credit to SME but only to large and successful companies. In the credit market there are then two extremes. At one end, the commercial banks only provide credit to large companies; at the other end,

microfinance institutions (MFI) only provide small loans to the poor households. There is a missing middle whose needs are not met by anybody.

In response to this, the CCB has started a partnership with Intean Polaroath Rangroeung Ltd (IPR) and financial institution providing loans to smallholder farmers ranging between \$300 and \$700 to undertake production. IPR has currently a capital of \$1.5 million of which \$0.5 million come from rice millers and traders and \$1 million comes from Rural Development Bank (this information has not been confirmed independently). The interest rate to farmers are 3 percent per month. Yet, the cost of loans to the IPR (the part coming from Rural Development Bank) is 9 percent/year. IPR is running its business since 2000 but only in 2002 got a license from the Central Bank. It provides credit to communities which in turn disburse funds to individuals. Default rates so far are 0 percent. There is no obligation on the part of IPR to buy the crops from farmers after harvest. So far, the activities of IPR cover 3 communities in 3 districts and reach about 3,000 households.

This year, the Rural Development Bank is expected to provide \$2 million to the rice millers at 5 percent annual interest rate.

About Export

Current policy on free export of paddy hurts the processing industry. It is however recognized that a ban on export of paddy would hurt the farmers since it would induce a fall in the domestic prices. For additional investment in the rice milling industry to occur, there is a need to provide incentives to the industry. At current high prices of paddy there are no such incentives.

The president indicates that there are no big difficulties in finding market overseas. However, to meet the demand of market overseas there is a need of capital to invest in larger capacity of the industry, improve quality, and procure large quantities of paddy.

Even if no export ban is adopted, at least a more regulated export of paddy could be promoted. For example, the free flowing of Vietnamese and Thai traders in Cambodia should be restricted.

About Imports

Unrestricted imports (sic!) hurt domestic producers and processor. However, the imported goods are cheaper than domestic goods, implying higher domestic costs of production. There is no a clear strategy to lower costs of production by the Chamber of Commerce. Some indications of what could be done are:

- Provide good quality inputs (chemicals and seed)
- Set up credit committee
- Promote use of agricultural machinery

Key Informant Interview 38. Ms. Julie Guillaume, Project Coordinator, GRET, 17 March 2006

Discussion about Stung Chinit irrigation project in Kampong Thom. The irrigation project has a long history. In 1997, ADB started project design and in 2001 it was approved a rehabilitation of the main structures. The project was suspended again and construction started in 2005. The initial plan was to cover an irrigated area of 70,000 ha. This initial plan was considerably reduced later because of lack of funds. As a result only 3,000 ha were considered for the actual rehabilitation program. The total cost of the project is estimated at \$16 million (about \$5,333/ha). Construction is expected to end in June 2006 and actual irrigation by the end of 2006/beginning of 2007.

GRET provides the software of the project, including organization of Water User Group, farmer mobilization, and demonstrations. GRET was given the task of working on a demonstration site of 50 ha with a community of farmers who were previously moved from forest areas, with no experience of irrigated agriculture.

The main difficulty experienced by GRET was in working with farmers who had no previous experience with irrigated agriculture and intensified agriculture. Moreover, the community was not used to farm organizations and reluctant to engage in social mobilization. The choice of the demonstration area was dictated by the physical constraint of being close to a water source (water could be pumped from a nearby small river).

The irrigation project is predicated on the idea of double crop of rice. In fact, this assumes that a systems of marketing and distribution of agricultural inputs and outputs is already in place, farmers have some experience of irrigation, some familiarity with growing other crops beside rice (like vegetables during the dry season), and capacity of marketing their products. A more sustainable approach will be to focus on improving the wet season paddy, improve soil fertility management and introduce vegetable crops or other cash crops. The work of CEDAC on SRI is considered suitable to this type of communities.

Ideas like open market for paddy, or commercialization of vegetables to markets such as Siem Reap seem promising; however, the ideas still lack a clear design and institutional framework that make them sustainable without project funding and support.

The main lessons from this experience are:

- Large irrigation schemes are very costly
- Improving the capacity of farmers to being involved, manage, and benefit from large irrigation schemes takes a long time
- Unreasonable expectations: To expect that farmers who are not used to irrigated agriculture could quickly catch up with the formation of associations, WUG, pay user fees, and building capacity for agricultural intensification and marketing
- Need of overcoming the institutional constraints related to legal issues of who is responsible for the management of the overall system
- Positive experience of Prek Nup, a medium irrigation system with lower costs (\$700/ha) and using a combination of rehabilitation and pumps