

LIVELIHOOD IMPROVEMENT ACTIVITIES

INTRODUCTION

Livelihood insecurity is a critical issue in the areas which CARE is working in, and needs to be addressed through an integrated and systematic approach. CARE is focused on scaling up livelihood improvement activities for poor communities so that they have access to food, and are able to better utilise available food for household members throughout the year.



STRATEGY

CARE has promoted integrated livelihood improvement activities including cash crop production, rice crop production, and home-stead production through varied approaches such as on-farm training, farmer field schools, demonstration farms, TOT, farm walks, field days, cross visits and through supporting CBOs to manage and provide on-going support and follow-up visits.

TARGET BENEFICIARIES

- Over 60% of CARE beneficiaries are found to be the most vulnerable and vulnerable households while others were moderate or less vulnerable.
- There is a significant correlation between the vulnerability of beneficiary households and the activities in which they participated in. Seed credit for upland crops, ceramic filters, vegetable production, and livestock raising were targeted to the most vulnerable households while post harvest activities and rice mill repairing activities were targeted to relatively less vulnerable households.
- There is a significant correlation between the extent of vulnerability of the beneficiaries and support provided to them by CARE.
- There was an increase from 22% to 52% for ACIMA and a slight decrease from 29% to 24% for IRDM in the proportion of the households receiving support in more than one livelihood activity. The decline in IRDM is attributed to the larger and more extensive target area.



Project	Province	# of target districts	# of target Commune	# of target Village	Total # of Household (HH)	Total # of HH Beneficiary	% of female headed HH beneficiary	% of disabled HH beneficiary
IRDM	Prey Veng	3	12	140	30,372	8,755	31.09	0.59
	Svay Rieng	1	3	48	6,160	1,960	26.38	1.22
ACIMA	Pailin	2	5	28	4,059	3,264	16.45	4.84
Total	3 Province	6	20	216	40,591	13,979	27.01	1.67

Participation:

- On average 25 persons participated in each training session conducted by CARE during the 4 year project implementation. Of the total participants, 46% were female and 2% were people with disabilities (PWDs).
- Capacity building activities aimed at CBOs or related to CBO activities had relatively higher participation rates than other events.
- The training delivered by different groups of facilitators such as CARE staff, partner staff, government staff and Community Development Trainee (CDT)/secondees were not significantly different in terms of quality and quantity of participation and delivery. However, the quality of training conducted by key farmers still needs improvement.
- On average, CARE beneficiaries received 2 types of support either in terms of training or in the form of farm or non-farm inputs. Other beneficiaries received one type of training on average 3 times over the project implementation period.



Adoption of recommended techniques:

- The adoption rate of recommended techniques and supported materials was over 90% for cash crops, 70% for rice crop crops, 80% for vegetable production and 90% for fish and frog raising. Almost all beneficiaries adopted recommended livestock activities.
- Livestock production activities were found to be most profitable whereas vegetable and mushroom production were of relatively less benefit to households. Simplicity of techniques as well as preferable market demand were the main reasons for the higher adoption of these activities by beneficiaries.
- Good seed varieties recommended by CARE were found to be easily adoptable than other farming techniques promoted in the target area. Recommended field preparation techniques prior to planting seeds were the techniques which were adopted widely by the beneficiaries. Home gardening was widely adopted by community members, especially the most vulnerable households.



Output and Outcomes

1. Homestead Food Production:

- Pig raising activities recorded highest net benefit of 70.8 USD during the cycle of 6 months followed by chicken raising. Livestock activities require higher investment at the beginning of the activity.
- Frog raising and home garden activities had less net benefit during the shortest duration of 3 months and require less investment at the start of the activity.

Homestead Activity	Yield per cycle	Net benefit per cycle (USD)	Duration of each cycle
Home Garden (kg)	90.9 Kg	18.6 USD	3 Months
Fish Raising (kg)	27.9 Kg	14.7 USD	7 Months
Frog Raising (kg)	8.1 Kg	7.3 USD	3.7 Months
Chicken Raising (head)	19 Heads	52 USD	6 Months
Mushroom (kg)	14.2 Kg	5.8 USD	4 Months
Pig Production (kg)	71.9 Kg	70.8 USD	6 Months

2. Crop Production Activities:

- The application of project promoted techniques resulted in an increase of 13% in the yield of maize crops as reported by beneficiaries. The demonstration farms which applied techniques in the most appropriate manner showed a 43% increase in yield. This increase is equivalent to a net income of minimum USD 120 to a maximum USD 404 (Demonstration farms) per household per cropping season. A net income of USD 120 is enough to buy rice to feed a family of 5 members for 4 months.
- Beneficiary households who adopted project promoted techniques observed an increase of 26% to 36% in rice yield. This reflected an increase in the yield of an average 503 Kgs to 696 Kgs of additional rice per cropping season. The additional quantity of rice is expected to reduce the duration of food shortage by 4 to 5.6 months for a family of 5 members.

3. Post-Harvest and Market Information:



- Proper storage facilities contributed to arresting the decline of quantity and quality and ensuring higher market prices by KHR 100 and KHR 300 per kilogram for rice and maize crops. The loss of crops during storage declined from 10% to 1% for rice and from 3% to less than 1% for maize.

- Rice mill improvement contributed to reducing the loss of rice crops during milling as well as improving the quality of milled rice. Rice milling loss declined by 6.68%. This decline

resulted in an average 100 kilograms of rice per household. This contributed in reducing 24 food shortage days for a family of 5 members per year.

- More than 50% of community members could receive market information on farm inputs and output prices and use it for negotiating better prices for their products.

4. Improved Water Accessibility:

- Using canal water for rice production was around 480 tonnes in 2008 and increased to approximately 611 tonnes in 2009. The additional rice crops irrigated from 28.7 Km of rehabilitated canal benefited a total of 2,700 households.
- Each irrigation water point could produce an estimated 10.5 tonnes of additional rice annually (3 time per year) for at least 250 households who had access.

5. Disaster Risk Mitigation:

- CARE conducted hazard and vulnerability capacity assessments in all target villages through a participatory approach which significantly increased the planning skills of community members.
- CARE is introducing systematic integration of DRR activities in the Commune Investment Plan (CIP) through its program in Prey Veng and Svay Rieng provinces.

6. Infrastructure:

- 30 KM of roads constructed in Pailin has improved access to markets and ensured easy access to educational and health care services for households in at least 28 CARE target villages. Reduction in transportation costs and time has also been a benefit to the community.



Impact of Integrated Activities on Livelihood:

1. Estimation for Increased Food Security:

- On average, each beneficiary household was engaged with more than one type of homestead food production activities. CARE monitoring indicated a reduction of over 1.3 months in the duration of food shortages due to these homestead food production activities.

2. Scenario depicting adoption of activities and reduction in food shortage:

- The outcomes of a variety of individual project promoted livelihood activities when combined together can have a multiplier effect on reduction in the duration of food shortages. The project recommended maize production techniques when combined with more than 2 homestead food production activities can result in at least 6 months of reduction in food shortages for vulnerable households.

Crop	Homestead activity	Extra months of food availability
1 main rice crop	1 homestead	5 months
	2 homestead	6 months
	3 homestead	6.8 month
1 main maize crop	1 homestead	5 month
	2 homestead	6 month
	3 homestead	7 month

KEY LESSONS LEARNED

General livelihood lessons learned:

- The TOT approach has shown to be an effective method in transferring knowledge to the community and ensuring sustainable technique sharing, but the criteria to select beneficiaries for TOT needs to be clear and well thought out in order to enhance the quality of knowledge transfer and sustainability after the project is complete.
- Field visits, farm walks and field days are effective methods in promoting recommended technologies and techniques. Demonstrations managed by the farmers worked well for technology adoption rather than managed by project staff.
- In order to achieve sustainability, ownership needs to be fostered within the target community. One approach successfully adopted by CARE is the collection of cash or in kind contributions from the beneficiary households.
- Strong coordination is required to minimize duplication of aid resources and activities within the project target area.

1. Homestead Production:

- Integrating multiple homestead activities for individual households contributes to increasing food availability throughout the year. However, the effectiveness of homestead activities was strongly associated with access to water facilities.
- Flexible/optional techniques for pond construction for fish raising should be considered to enhance the quality of fish raising activities for vulnerable and poor households.

- Drip irrigation systems for vegetable production have high maintenance costs. Drip irrigation will be most effective if it is done on a larger scale linked with markets so that farmers can earn money and invest it over time.
- Chicken raising production is more suitable than pig and cattle raising for vulnerable households as less labor and cost is required.
- Local stocking/breeding for fingerlings and mushroom spores is important in enhancing the quality of production and ensuring the sustainability of adoption. Encouraging the community to have natural breeding fingerlings, especially *Tilapia*, would help the community to continue these activities.
- Vegetable growing was the most common activity contributing to availability of healthy food for households. However orienting this activity to markets (changing from small scale to large-scale condition) requires proper mechanisms and further support for farmers.
- The type of seed to be distributed depends on the overall purpose of the activity. Households focused on household consumption require different varieties of seed than households who intend to produce food for sale. Moreover, seed distribution for vegetable production needs to be integrated with irrigation activities.

2. Crop Production:

- Line and distance techniques for rice growing need to be reviewed to ensure wide adoption and flexibility of combined techniques should be taken into account, based on conditions.
- Improved seed and land field preparation techniques were found to be well adopted by communities on larger scale rather than other recommended techniques such as straw mulching and *Rizobium* inoculation.
- In promoting cash crop technologies, there is a need to consider pest management techniques and options for crop rotation.

3. Post-Harvest:

- An effective market information sharing activity should be linked to wider promotion activities. The promotion activity should aim to explain the purpose of market information dissemination, the technical terms and the timing of announcements.
- Storage construction models for rice and cash crop should be flexible and take into account the socio-economic conditions of the target community (land size, living standard, accessibility to credit, etc).
- Post-harvest promotion activities are highly beneficial to the community as they ensure that prices are fair for the community by enhancing quality and reducing crop loss.



4. Improved access to water:

- Construction of irrigation systems needs to be well considered as these activities are often implemented in mine suspected areas which can cause the community to engage in risky behaviour.
- Irrigation water point management approaches which involve Water User Groups need to be periodically reviewed by stakeholders and relevant agencies to ensure sustainability of activities.
- The Food for Work (FFW) approach can be applied in specific conditions; however, it needs to be flexible and adaptable to socio-economic and environmental conditions.



5. Disaster Risk Mitigation:

- In planning activities, training needs to be targeted to Village Committee for Disaster Management (VCDM) and Commune Committee for Disaster Management (CCDM) members who are working on the ground. There is also a need to raise awareness and knowledge of DRR issues within local communities and increase their understanding. In training beneficiaries to respond to disasters, an increased focus in searching methods and data recording to sub-teams of VCDM and CCDM is required.
- Institutional support systems need to be strengthened. Coordination mechanisms and communication methods should be established for CCDM and DCDM (and with development partners) for DRR planning and also in times of emergency. It is recommended that these mechanisms should draw on the current Decentralization and Deconcentration (DD) policy of RGC. The current practice of meetings set up by Commune Councils and district authorities is very useful; however, a clear and workable mechanism should be further developed and put in place.
- Stronger linkages between the CDP/CIP and DRR need to be established. DRR can be integrated into the risk analysis of the decentralised planning.
- Data management systems need to be introduced so that a chorological analysis of disasters can be made and the lessons learned can be documented. This will help in developing a robust preparedness plan based on the contextual analysis. This can be done through incorporating disaster related information into the commune database which is managed by the commune councils.



Case Study: Livelihood Changes through Homestead Production

Uk Sarey is a 51 year old farmer residing in Au Deisaet village, Stung Trang commune, Sala Krao district, Pailin. His family of 6 (4 of whom are female) is one of the poorest families in the village. He did not receive education during his childhood and found it difficult to earn a livelihood for his family that forced him to migrate. His family was living in Takeo province before 1993, and after that he moved to Battambang province. During 2005, he finally migrated to his current residence in Au Dei Saet village. He works as a farmer growing crops, vegetable and raising livestock whilst his wife sells cakes to earn a living.



Before CARE project commenced, he ran a motorcycle repairing shop in his village. The income from the business was gradually decreasing as most of the people in his village migrated to live in other districts. Additionally, villagers always had their motorbikes repaired on credit and delayed payment (some of them never paying) and as a result he slowly lost his own capital. Finally, he was forced to sell all his resources to be able to afford treatment for his seriously ill son and as a result he could not continue his business. He became a farmer growing vegetables and raising livestock on his own. However, his family's livelihood was not improving. In May 2009 his farmland was cleared for land mines through CARE ACIMA project. Later he participated in livelihood activities receiving training as well as input support for frog production, livestock rearing, vegetable production, a plastic pump, mushroom growing, and rice growing activities.

After his involvement in the project, he observed that his family income had improved as he could grow vegetables around his house throughout the year (formerly, he left his land free in the dry season), has reduced expenditure in buying food from market as he has frog pond and fish ponds, and above all his family is able to earn money from selling vegetables and frogs. All his family members know how to grow vegetables and raise fish and frogs after training and support from CARE.

In the first activity cycle, he sold 15-20 kilograms of frogs at the cost of KHR 8,000 per kilogram. Through selling vegetables he was able to earn about KHR 80,000 to 100,000 in one cycle. The money saved from these activities was used to buy rice, rice flour and cassava flour to make fried banana cakes and sticky rice cakes for selling to generate additional income. Now his family has money to spend on their children's education and health as well.



In the future, he plans to raise Eel and Catfish. He is very interested to attending further training organized by CARE to enhance his skills.

After participating in the ACIMA project, Uk Sarey believes that he has enough food for household consumption. He now receives a daily and seasonal income, and he does not keep his land idle as he did before.

CASE STUDY: FISH RAISING FOR LIVELIHOOD IMPROVEMENT

Chhoung Som, 58, is a subsistence farmer in Phnov village of **Prey Veng province**. He has 9 members in his family, of which 3 are female. During the inception phase of the IRDM project he became a CARE project beneficiary and actively participated in a variety of project activities such as vegetable growing, rice cultivation, fish raising, livestock production and received a water filter.

In July 2008, he participated in fish raising activities. CARE provided support through training and inputs. Through the training and his experience in the field, he enhanced his knowledge in fish raising.

As he was unable to hire labour to carry out pond digging hence his family members carried out the activity. Two ponds were constructed which were 7 meters wide, 15 meters long and 3 meters deep. He started raising fish with 800 fish fingerlings provided by CARE. After the first cycle of fish raising, he and his family were very satisfied with the outcomes. Besides household consumption, his family earned an income of KHR 125,000 from selling the fish.



This success encouraged him to construct two more ponds with a capacity to raise 5,000 fingerlings. He invested his own money in this activity without any input support from CARE. During the second cycle, he received a profit of more than KHR 1,000,000 which was much higher than the first cycle. His family livelihood has significantly improved due to this activity and he has started saving his income.

"Since my marriage, me and my wife worked on the farm for rice cultivation only. I could get an output of 0.4 to 0.6 ton/Ha of rice per year. Increase in the number of family members over time exerted extra pressure on me so that I can feed my family members. Besides working on my own rice farm, me and my family sold labor to make additional income. My family faced very hard time when we did not have enough food to eat," describes Chhoung Som. Currently he has been able to construct a proper house and has enough food for his family and he can send his children to school.



His livelihood enhancement has increased his confidence, and he is able to express his opinions during community meetings and forums. In the future, he plans to expand his fish production for business purposes. He also wants to engage in livestock production, and vegetable production (both rainy season and dry season) to diversify his sources of income.

Finally, Oung Som, has requested all NGOs especially CARE, to continue their activities to support communities on crop production and livestock raising, and suggested to have hatcheries in order to produce quality fish fingerlings.