

Community visioning and action plans: Tonle Sap hub



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COMMUNITY VISIONING AND ACTION PLANS: TONLE SAP HUB

Authors

Il Oeur, So Dane and Sem Sopheakdey

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LIST OF ABBREVIATIONS

AARR	Alliance Association for Rural Restoration
AAS	CGIAR Research Program on Aquatic Agricultural Systems
AADB	Asian Development Bank
ADIC	Analyzing Development Issues Centre
CDRI	Cambodia Development Resource Institute
CIP	commune investment plan
CLCP	Community Life Competence Process
FACT	Fishery Action Coalition Team
ha	hectare(s)
HOM	Old Age and Miserable People Help
HURREDO	Human Resource and Rural Economic Development Organization
km	kilometer(s)
m	meter(s)
NGO	nongovernmental organization
RACHA	Reproductive and Child Health Alliance
SALT	Support, Stimulate, Share, Appreciate, Listen, Learn, Link, Transfer and Team
STARGO	Strengthening Aquatic Resource Governance
TCO	Trailblazer Cambodia Organization
UNDP	United Nations Development Programme

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EXECUTIVE SUMMARY

The process of rolling out the CGIAR Research Program on Aquatic Agricultural Systems (AAS) in 12 target villages in Cambodia throughout 2013 involved several important tasks at different stages. This report represents one of those tasks: the Community Life Competence Process (CLCP), commonly referred to by stakeholders as “visioning.” It has two main objectives: (1) to document the community visioning process, including the development of a community action plan and NGO work plan to monitor progress; and (2) to document village and network profiles of key community stakeholders at the village level. The visioning exercise took place between August and November 2013 in several stages, starting with a few villages and continuing until it was completed in all 12 selected villages. The team who coordinated these exercises included mainly facilitators and participants of the CLCP training that was held in Siem Reap in August 2013.

The CLCP team engaged the community through household visits and small group discussions among 10–20 people. Discussion focused on people’s perceptions of the village situation and their visions or dreams, and then moved on to prioritizing elements of their visions and developing their community action plans. The outputs of these CLCP exercises indicate that the community visions comprise both shared and different themes across the geographic areas. Following are descriptions of the visions articulated by the 12 communities by key theme, followed by a section on community action plans grouped by key category. These action plans will be the basis for future community reflection on progress and constraints.

Community visioning

- 1. Health and sanitation.** The CLCP participants wanted to see their communities have clean houses and toilets, as well as sufficient ponds and wells for domestic use. Also, some communities wanted access to a reliable supply of safe water, better health and hygiene practices, and good nutrition for their children.
- 2. Education and vocational training.** Many CLCP participants wanted to see their communities have primary schools through upper secondary schools near their homes. Others wanted to see their communities have a kindergarten and Buddhist school, and to have people be equipped with vocational skills.
- 3. People and employment.** The CLCP participants wanted to see new graduates from within the communities being employed and educated, and to have some villagers become teachers to serve their communities. Moreover, they wanted to see active and vibrant small enterprises for crafts (*bangki*, *chhneang* [baskets] and hammocks). Crafts could be made from existing natural resources, such as water hyacinth.
- 4. Building infrastructure.** The CLCP participants wanted to see their communities build roads, bridges, canals, dams, culverts and schools; to have electricity for households; to rehabilitate their streams; to have decent houses for all, including provision of houses for the resource-poor and elderly; to have a community hall in their pagoda; and to have a functional center for agricultural training.
- 5. Governance and institutions.** The CLCP participants wanted to see their communities have access to public fisheries, to have suitable fishing gear to meet household needs, to have a social land concession provided for residential purposes and for rice farms (Chnok Tru), to have better access to round-the-clock health center services and to public transport for medical emergency aid and for children to attend school, to reduce dependency on fishing by shifting to dry season rice cultivation on land allocated by the state, and to have *chamkar* land for secondary crops.

- 6. Fish production.** The CLCP participants wanted to see their communities conduct small-scale aquaculture, eliminate illegal fishing and rehabilitate the community fish sanctuary, have fish processing enterprises, have floating houses, and rehabilitate their fish reservoir to conserve fish and therefore have more fish to catch.
- 7. Access to markets.** The CLCP participants wanted to see their communities have fixed and floating marketplaces in a clean environment, good market prices for agricultural products, an advanced rice dryer warehouse to ensure a better price for rice, ability to export fish products for income, and enterprises for fish processing to gain a better price for fish products.
- 8. Conservation.** The CLCP participants wanted to see their communities actively engaged in pond fishery conservation, maintaining conservation reservoirs and lakes (Tonle Om in Bakou village), having well-protected forests to offer to the ecotourism sector, cracking down on illegal fishing, and having one technical agency to manage the fishery sector, instead of too many agencies.
- 9. Rice production.** The CLCP participants wanted to see their communities have increased rice productivity, access to short-season rice varieties, low-cost agricultural inputs (fuel, pesticides and fertilizer), good rice seeds, functional irrigation canals, improved soil fertility, dry season rice farming, a community rice mill and sufficient food.
- 10. Livelihood diversification.** The CLCP participants wanted to see their communities improve the quality of life by having capital and technical skills to raise animals (such as chickens, ducks and pigs) and have home gardens, including floating ones, and to transform their community fish sanctuary into an ecotourism area (Rohal Suong village) for income-earning opportunities.
- 11. Waste management.** The CLCP participants wanted to see their communities have better solid waste management practices, such as for thrown-out plastic sheets and other items.
- 12. Water management.** The CLCP participants wanted to see their communities rehabilitate community ponds for water consumption, to have increased access to safe water supplies and to reduce incidences of water-borne diseases.
- 13. Other social issues (rights, gender and domestic violence).** The CLCP participants wanted to see their communities free of domestic violence and having reduced migration, gender equality, happy families, and most importantly, people actively engaged in meetings and community development activities.

Community action plans

The community visions are meant to be addressed by the community action plans, which include the following aspects:

- **Sanitation and clean environment.** Set up a committee to manage trash collection on a designated village cleaning day and to assign maintenance tasks together with group leaders; improve household health and sanitation practices, focusing on drinking safe water through awareness raising among neighbors regarding boiling drinking water and preparation of boiled water for family members who fish away from home; and follow up and encourage good hygiene practices (Chnok Tru).
- **Equal access to health services.** The committee will discuss and analyze health-related problems; the village chief and health volunteers will bring this issue to medical practitioners; and village health volunteers will report results of the meeting to the committee (Muk Wat).

- **Promotion of good hygiene practices and nutrition for children.** Encourage preparation of nutritious food for children; follow up and organize home visits on cooking practices for children; and raise awareness on good hygiene practices with schoolchildren through teachers (Raing Til).
- **Effective water resources management.** Repair Dam 78 in Santey and maintain a sufficient level of water in the dam.
- **Skills improvement and application through animal husbandry and home gardens.** Mobilize technical support for home gardening; conduct training to learn techniques on growing integrated gardens; select types of seeds; pilot-test vegetables and follow up; share experiences and learning for replication by others; repair the old and build new fish cages; conduct training on food processing; and acquire hybrid chickens and improve feed for chickens.
- **Increased dry season rice and storage of dry season rice seeds.** Organize dry season rice group; discuss the appropriate use of seeds, fertilizers and pesticides; discuss the use and sharing of farm equipment; prepare soil in the rice fields and sow seeds; and follow up the growth of dry season rice.
- **Mobilization of capital for income generation.** Promote awareness and mobilize members to start aquaculture, chicken raising, etc.; set up a savings group, including formulation of regulations, member orientation, registration, bookkeeping, conducting members' saving and lending transactions, and following up and maintaining the cashbook; and conduct a reflection meeting and prepare for next year (Raing Til).
- **Granite road.** Establish the work committee; collect contributions from members through the committee; have committee talk to commune council to support the proposed project (Muk Wat).
- **Sufficient food in households.** Have the committee establish a subcommittee to support resource-poor people and link with various agencies for food aid for the resource-poor (Muk Wat).
- **Better protection of forest and fish conservation.** Organize a meeting to strengthen the community fishery; conduct awareness raising in the community about the importance of conservation; and restructure the patrol team and upscale implementation of patrols (Prey Chas).
- **Fish processing to increase market value.** Organize a group for sellers of fresh and processed fish; start fish processing activities (pickled fish, smoked fish and dried fish); regularize group meetings to share information and for other functions (Neang Sav of Phat Sanday).
- **Household fish culture.** Start setting up fish cages; procure fish fingerlings; feed daily; organize group on fish culture; and seek technical support in aquaculture (Neang Sav of Phat Sanday).
- **Rehabilitation of Tramper reservoir and repair of the dam.** Have the village chief mobilize the communities to discuss the rehabilitation plan; conduct a meeting with the committee and village chief to coordinate the rehabilitation activities; start rehabilitation of the reservoir in Tramper by removal of water hyacinth from the reservoir; have the committee and village chief collect materials and equipment and set work plan for rehabilitation; conduct rehabilitation and repair work; develop maintenance plan and designate committee's maintenance work; follow up and monitor (Tramper).

- **Training center in agriculture.** Make a list of people who are interested in learning about and growing vegetables; tap technical experts to share their knowledge about rice and vegetable growing.
- **Elimination of domestic violence.** Tap commune police and Commune Committee for Women and Children to conduct awareness-raising session about domestic violence with affected households (Tramper).

INTRODUCTION

A community visioning or Community Life Competence Process (CLCP) exercise was conducted among 12 Cambodian villages participating in the WorldFish-led CGIAR Research Program on Aquatic Agricultural Systems (AAS). This was part of the AAS rollout process and was conducted in four stages, with each stage covering at least two villages. Each stage was conducted by facilitators who went through a one-week training in Siem Reap facilitated by a team from Constellation.¹ The main objectives of the workshop were to (1) introduce the concepts of the CLCP, including the “Support, Stimulate, Share, Appreciate, Listen, Learn, Link, Transfer and Team” (SALT) mindset, to the community facilitators and WorldFish team; (2) strengthen the capacity of community facilitators and partner organizations to facilitate community engagement through the CLCP; (3) build a sense of team among the participants for ongoing mutual support and knowledge sharing; and (4) engage participants in the planning of visioning weeks in each of the 12 villages or communities, including a system for documenting the process. Community facilitators selected from among the 12 villages, nongovernmental organization (NGO) representatives and government officials attended the training.

The visioning exercise was commissioned by WorldFish with the idea that the results will contribute to developing the strategic framework for AAS in the Tonle Sap region. WorldFish is managing AAS, which aims to improve the well-being of people dependent on aquatic agricultural systems. The community visioning process was carried out from August to November 2013 as one of the activities under this program. This contributed to the strategic planning process held in Siem Reap in November 2013. The specific objectives of this process included (1) documenting the community visioning process and development of a community action plan and NGO work plan to monitor progress; and (2) documenting village and network profiles of key community stakeholders at the village level.

The WorldFish diagnostics and design team selected villages that had been visited during the scoping study,² along with others recommended by partner organizations. Table 1 provides basic data about the villages selected to participate in the CLCP. Of the 12 villages, Chnok Tru comprises the largest population size and is inhabited by three different ethnic or religious groups—Khmer, Muslim and Vietnamese; Anlong Ta-Uor is the second largest by population and has no ethnic group other than Khmer, but has the highest average household size.

No.	Village	Households	Population			
			Male	Female	Total	Average household size
1	Santey	202	471	463	934	4.6
2	Rohal Suong	342	687	669	1,356	4.0
3	Kampong Kor Leu	288	629	689	1,318	4.6
4	Bakou	273	626	636	1,262	4.6
5	Peam Ta-Uor	204	365	504	869	4.3
6	Raing Til	252	500	644	1,144	4.5
7	Chnok Tru	1,166	2,687	2,799	5,486	4.7
8	Anlong Ta-Uor	725	1,759	1,941	3,700	5.1
9	Muk Wat	154	332	390	722	4.7
10	Prey Chas	313	720	706	1,426	4.6
11	Tramper	223	485	561	1,046	4.7
12	Neang Sav	185	384	420	804	4.3
Total		4,327	9,645	10,422	20,067	4.6

Source: Community visioning reports from each village.

Table 1. Population by selected village.

The process was participatory. A one-week workshop in Siem Reap, facilitated by the Constellation team, trained the NGO partners. Based on the learning from this workshop, the NGO partners in each area and their two selected community facilitators got together to discuss and prepare for the fieldwork. The facilitators were coached to facilitate the entire process. After each day, the whole team in each village gathered for reflection to document outputs and processes based on a standard report format. This process helped them to write a report of each village.

The teams started out in parallel, each covering two, three and four villages each week. There were four stages of fieldwork, and each lasted for about 4 days, although some NGOs did preparatory work in earlier fieldtrips. Due to heavy floods, the visit to one village (Rohal Suong) was delayed for about two weeks from the original schedule. The NGO partner in each target area was responsible for facilitating the fieldwork in its own area with support from the WorldFish team and Constellation; the Analyzing Development Issues Centre (ADIC) team was responsible for documenting the processes and outputs.

The participation of the community varied from place to place and was structured in different ways. For example, some villages organized men and women separately, and others did not; some chose to include additional tools in the process such as the stakeholder analysis tool and village mapping tool, and others did not. There were differences of opinion among the community members. For example, community members may have been aware of their own issues and situation, but coming to an agreement on their vision required the use of a village mapping exercise. Some communities were able to devise their action plans based on their prioritized visions; hence, stakeholder analysis was unnecessary because they knew what agencies to tap. In contrast, the groups who chose to use the tools mentioned that it gave a better view of the village. This view enabled the partner NGOs to provide coaching, the community facilitators to more easily facilitate and the community to evoke shared understanding.

At the end of each field visit covering two to four villages, the team members from the NGO partners, WorldFish and Constellation came together to organize an after-action review. The notes from this reflection were shared immediately with the team the following week. These notes were drawn out and incorporated into this report, especially in the section on lessons learned on the process.

Each partner NGO was responsible for writing up a report in Khmer for its own area, providing details and examples about the processes and outputs. ADIC and the WorldFish team provided comments for the second drafts. The ADIC team consolidated the reports from the 12 communities to produce this report.

This report is structured around the key aspects of the study's objectives. The introduction and methodology are followed by a brief profile of the 12 communities. Next is an introduction to key village-level stakeholders. This is followed by a discussion of the outputs of the CLCP, encompassing the community visions and action plans of each region, grouped into land-based, water-based and land-and-water-based areas. Each output section has two subsections. The first subsection introduces the key themes of the vision articulated by community participants, followed by examples of specific visions from each village highlighting similarities and contrasts. The second subsection details each action plan and discusses similarities and differences between villages. These outputs capture the current situation of the villages, indicating the context for community members' visions. The next section draws out the differences and similarities across the three ecological regions based on the details of the outputs and action plan sections, and the next segment is a comparison by province. Finally, the last section is a summary with reflections on all the processes involved in these exercises.

No.	Village	Commune	District	Province	Fieldwork date	Fieldwork facilitation
1	Santey	Dan Run	Sotr Nikum	Siem Reap	2–6 Sept. 2013	Trailblazer Cambodia Organization
2	Rohal Suong	Prek Norin	Ek Phnom	Battambang	28 Oct. –1 Nov. 2013	Akphiwat Strey
3	Kampong Kor Leu	Kampong Kor	Kampong Svay	Kampong Thom	14–18 Oct. 2013	Dai Ku Aphiwat
4	Bakou	Srae Sdok	Kandieng	Pursat	23–27 Sept. 2013	Akphivat Neary Khmer Organization
5	Peam Ta-Uor	Keo Por	Puok	Siem Reap	2–6 Sept. 2013	Human Resource and Rural Economic Development Organization
6	Raing Til	Raing Til	Kandieng	Pursat	23–27 Sept. 2013	Ponleur Kumar
7	Chnok Tru	Chhnoc Tru	Boribor	Kampong Chhnang	14–18 Oct. 2013	Analyzing Development Issues Centre
8	Anlong Ta-Uor	Koh Chiveang	Ek Phnom	Battambang	14–18 Oct. 2013	Village Support Group
9	Muk Wat	Kampong Khleang	Sotr Nikum	Siem Reap	2–6 Sept. 2013	Trailblazer Cambodia Organization
10	Prey Chas	Prey Chas	Ek Phnom	Battambang	9–13 Sept. 2013	Akphiwat Strey
11	Tramper	Snam Preah	Bakan	Pursat	9–13 Sept. 2013	Akphivat Neary Khmer Organization
12	Neang Sav	Phat Sanday	Kampong Svay	Kampong Thom	23–27 Sept. 2013	Cambodian Organization for Women Support

Table 2. Location, fieldwork date and fieldwork facilitation.



Figure 1. AAS community visioning: Locations of the 12 selected villages.

This section characterizes the context of the communities by ecological zone—land-based, water-based and land-and-water-based. Key aspects include social services, transportation and livelihood sources (Table 3).

In the land-based areas, all villages have primary schools, but only Bakou village has a lower secondary school. In terms of access to health services, there is a health center that caters to all of the land-based villages. However, the villages are far from the center; travel costs make the services unaffordable and bad roads make the center difficult to access. Only the villagers in Santey did not complain of accessibility, despite the center being 7 kilometers (km) away, because there are relatively good roads between the village and the health center. People in the land-based areas share similar sources of livelihood, with farming and fishing as the major sources; the minor ones comprise animal husbandry and vegetable gardens.

Among land-based villages, Santey village farmers are distinct in that they are able to grow two rice crops because they have access to water from the reservoir, which is managed by a capable committee as a common water resource. It also has a community fish conservation area, also managed by the committee. Besides the management of water resources for dry season rice, the committee raises and harvests fish from time to time in the reservoir of Dam 78. This brings in revenue that is used for dam repair and maintenance and for building and maintaining the road in the village. Villagers in Santey have a conservation practice of not fishing during Buddhist holy days. They also fish in distant areas and not only in the reservoir. Santey has an annexed village known as Kanthor with 50 households, which is a floating village for 6 months; villagers there fish and raise crops on the riverbanks. Bakou village also has one large lake called Tonle Om. People in the commune depend on it for fish for consumption, but recently it has become shallow and it dries out during the dry season.

In the water-based villages, there are schools up to the lower secondary level except in Raing Til village, which does not have a complete primary school. Except Peam Ta-Uor, the communities also have access to nearby health facilities. The main form of transport is generally by boat—again, except in Raing Til, where people travel both by boat and on the road. The main sources of livelihood in all four villages are fishing in public spaces and aquaculture. The secondary sources are rice farming, vegetable growing, selling groceries and engaging in other small trade. It is interesting to note that in Anlong Ta-Uor, the community members provide boating services for tourists who visit the area, which brings them additional income.

In the land-and-water-based areas, the children in all of the communities except Muk Wat have access to primary schools. However, only in Neang Sav is there access to a lower secondary school, as the village is near the commune center where school facilities are located. A difference among villages is in access to health services: Muk Wat and Neang Sav have health centers in their communities, while Prey Chas and Tramper do not. With regard to transport, people in Neang Sav and Prey Chas use boats; while Muk Wat villagers also use boats, the village can be accessed by road in the dry season. Tramper village is accessed by road throughout the year. The main livelihood sources differ remarkably among villages, but center on farming, fishing and aquaculture; secondary sources are vegetable growing, selling groceries or trading, and wage work in construction.

No.	Village	Ecological context	Schools	Health facilities within 1 km	Transport	Main livelihoods	Secondary livelihoods
1	Santey	Land-based	Up to grade 6	No	By road	Farming (two rice crops) and fishing	Cattle, poultry
2	Rohal Suong	Land-based	Up to grade 6	No	By road	Farming and fishing	Beans, corn, watermelon
3	Kampong Kor Leu	Land-based	Up to grade 6	Health center	By road and boat	Farming	Fishing, vegetables
4	Bakou	Land-based	Up to grade 9	Health center	By road	Farming	Fishing
5	Peam Ta-Uor	Water-based	Up to grade 6	No	Mainly by boat	Fishing and aquaculture	Groceries, vegetables
6	Raing Til	Water-based	Up to grade 5	Health center	By road and boat	Fishing and aquaculture	Home gardens
7	Chnok Tru	Water-based	Up to grade 9	Health center	Mainly by boat	Fishing and aquaculture	Rice, groceries, shops
8	Anlong Ta-Uor	Water-based	Up to grade 9	Health center	Mainly by boat	Fishing and aquaculture	Small trade, tourist services, home gardens
9	Muk Wat	Land-and-water-based	No	Health center	By boat and road	Farming and fishing	Beans, corn
10	Prey Chas	Land-and-water-based	Up to grade 6	No, except a small pharmacy	Mainly by boat	Fishing and aquaculture	Corn, vegetables
11	Tramper	Land-and-water-based	Up to grade 6	No	By road	Farming	Fishing, construction, small trade
12	Neang Sav	Land-and-water-based	Up to grade 9	Health center	Mainly by boat	Fishing	Groceries, corn, vegetables

Table 3. General village profiles.

KEY COMMUNITY STAKEHOLDERS AT VILLAGE LEVEL

This section identifies some key stakeholders engaged in development in the communities, including NGOs, government agencies and local authorities. Since government agencies are of common mandate, the information received from the CLCP discussions focused more on NGOs.

Santey. The Trailblazer Cambodia Organization (TCO) has been collaborating with WorldFish for community fish pond conservation in Tapeang Kuy. Neary Khmer is working on clean water, nutrition for children, and providing crop seed and animals. Krousar Yoeung has been working to improve the kindergarten project and rice bank. Plan International and the *Centre d'Etude et de Développement Agricole Cambodgien*, known by its acronym CEDAC, introduced the system of rice intensification and promotes group solidarity through savings. Similarly, the *Groupe de Recherche et d'Echanges Technologiques*, known by its acronym GRET, is working on agricultural projects. Water for Cambodia is an NGO working to promote health and sanitation awareness. The Cambodian Red Cross provided a water supply and toilets.

Rohal Suong. Akpfiwat Strey, with support from the United Nations Development Programme (UNDP), supported the community's conservation area for a period of 2 years ending in 2012. Apart from this, Akpfiwat Strey continues to support initiatives on home garden, credit, aquaculture, rice production and strengthening the capacities of the community fishery committee.

Kampong Kor Leu. The Cambodian Red Cross supported the repair of houses in 2009; provided three wells, humanitarian aid, toilets, awareness raising about floods and epidemics, drainage setup, and educational materials for students; trained village volunteers; repaired boats for the community; and introduced a water purifier. The project is still active. Since 1994, Caritas has provided 30 new houses and repaired some old ones; built 1600 meters of road, bridges and an 1800-meter canal; and initiated projects on cows, water purifiers, nutrition for children, a water pump station, rice seeds, rice bank storage, and loans for

fishing and vegetables. This project is also still active. Old Age and Miserable People Help (HOM) started in 2007 on the system of rice intensification, animal raising, rice seeds, vegetable seeds, and loans for fishing gear with low interest for 85 households. Also, HOM helped to establish a *prohok* (pickled fish) processing group, provided a water purifier and set up rice storage. The project is still active. The Asian Development Bank (ADB) implemented the Sustainable Livelihoods project on community fishing establishment and animal raising during 2005–2008. Banks and microfinance institutions such as the Association of Cambodian Local Economic Development Agencies (known by its acronym ACLEDA), Hattha Kaksekar, Angkor Microfinance Kampuchea (known by its acronym AMK), Chamroeun, Amrit and others are active in providing loans to the community.

Bakou. Villagers used to receive assistance from the World Food Program for nutrition projects aimed at resource-poor mothers and their children. Also, the community used to benefit from training on the system of rice intensification provided by Srey Khmer. Currently, Kumar Ney Kdey Sangkeum is helping to promote children going to school, and the Reproductive and Child Health Alliance (RACHA) has provided credit access to the community.

Peam Ta-Uor. The Human Resource and Rural Economic Development Organization (HURREDO) is supporting flooded forest plantation and processing of fish products. The Fishery Action Coalition Team (FACT) promotes self-help groups with savings and lending activities. The Cooperative Development Foundation is an NGO that has provided loans for house construction. The ADB used to provide fish seed for raising and teach techniques in catfish raising.

Raing Til. Ponleur Kumar used to collaborate with the commune council in a scheme of local administration and reform supported by Pact Cambodia from 2008 to 2010. The ADB Sustainable Livelihoods project by the commune council from 2010 to 2011 focused

on setting up a water supply station for selling clean water to villagers. FACT supports community fishery and community-based organizations in collaboration with the Sangkat Fisheries Administration to create awareness about fishery law, the calendar for closed and open fishing seasons, and flooded forest protection. RACHA worked on reproductive health, nutrition, and vaccination for pregnant women and children from 2009 to 2013.

Chnok Tru. Chnok Tru has the largest population among the 12 villages. The village sits afloat government-designated Zone 3, where development activities are prohibited, as it is a biodiversity and conservation area. There are five water supply piers supported by the ADB, Lien AID, International Relief and Development (known by the acronym IRD) and the Royal Government of Cambodia, but only one is working and in use by better-off households. The Fisheries Administration has a close relationship with the community, with programs on awareness raising about laws and regulations, regulated closed and open seasons for fishing, zoning of prohibited zones, flooded forest areas, and engaging people's participation in illegal fishing crackdown and fish conservation. The environment officials have also had good collaboration in relevant law awareness, such as natural resource management, waste management, uses of poisons for fishing, etc. In the village, there are village health volunteers and commune core group leaders who engage in activities addressing agriculture, health promotions, climate change awareness, aquaculture and gender. They are the main bridge between development workers and government agencies and the community members. The commune authority works closely with the community and supports development projects.

Anlong Ta-Uor. In December 2013, Good Neighbor began to work on solar power panels and community development, and helps 500 resource-poor children go to school through assistance in educational materials, transport and learning English. RACHA has provided clean water equipment (one 20-liter barrel for KHR 500). It purifies water and provides 40% of the income to the community. Another NGO helped set up a floating home garden, a restaurant and a guesthouse for tourists; provided training on

handicrafts produced from hyacinth; provided housing with a clean environment; and assisted by bringing children to school. The income from this is largely allocated for the community. Helping Address Rural Vulnerabilities and Ecosystem Stability, known by the acronym HARVEST, started piloting *kranh* fish with nine households. The Reproductive Health Association of Cambodia, known by the acronym RHAC, supported pregnant women (USD 15 per person) to go to a health center or provincial hospital for delivery of babies. FACT assists self-help groups and the community fishery.

Muk Wat. The community collaborates with FACT on fishery conservation. Neary Khmer supports a women and nutrition project for children. World Vision is working on education and disaster management. Ship of Life, a mobile ship, has been stationed in the village for several months to offer free health services and a clean water supply for the community members in need. Bamboo Shade is working with the community to provide support in education.

Prey Chas. Akphiwat Strey, with funding from UNDP, had a program to support the conservation areas of Chumteav Mao, Yeay Meas and Prey Chas for a period of 2 years, ending in 2014. FACT supported five self-help groups, with a total of 45 members, but this has now ended. The ADB's Sustainable Livelihoods project provided pigs for 15 households to raise, and this project is also now over.

Tramper. The Akphivat Neary Khmer Organization is collaborating with WorldFish on rice field fisheries from October 2012 until 2016. The project in the Tramper Lake fish conservation area has included support in rehabilitation, putting up sign boards, preparation of fish sanctuaries, conservation area boundary posts, and research on fish and fish consumption of villagers. The Alliance Association for Rural Restoration (AARR) used to provide training to farmers about rice farming and home gardening, but this ended. AARR continues a child school sponsorship program that encourages children to send pictures and photos overseas. RACHA used to create awareness about nutrition for children. The German Red Cross used to help in building a safe place in time of floods.

Neang Sav. Live and Learn helped with small business projects, promoted the establishment of ecotourism and supported the strengthening of the committee for fishery issues. ADIC has been working in collaboration with WorldFish, Cambodia Development Resources Institute (CDRI) and Adelphi, together with FACT, to implement the project known as Strengthening Aquatic Resources Governance (STARGO) since January 2012.³ The project aims at exploring and implementing innovative ideas generated through stakeholder consultation in order to respond to fishery resources management challenges. Given the policy changes and the current reality on the ground, the community fishery committee is now in the process of initiating a community-based commercial production scheme whereby the community manages the agreed plan of fish harvest for community revenue to enable them to continue conservation efforts together with competent local authorities in the area. In March 2014, the committee visited a similar scheme that was implemented in Prey Veng Province, which provided them a strong incentive for trying a similar plan of action. Currently, STARGO is at a stage of transition, in which the lessons learned and the current efforts are being transferred into AAS to be implemented with the Cambodian Organization for Women Support, known by the acronym COWS, as a development partner for field operation. Collaboration with commune authorities, the Fisheries Administration and police has been remarkable despite limited resources in the communities.

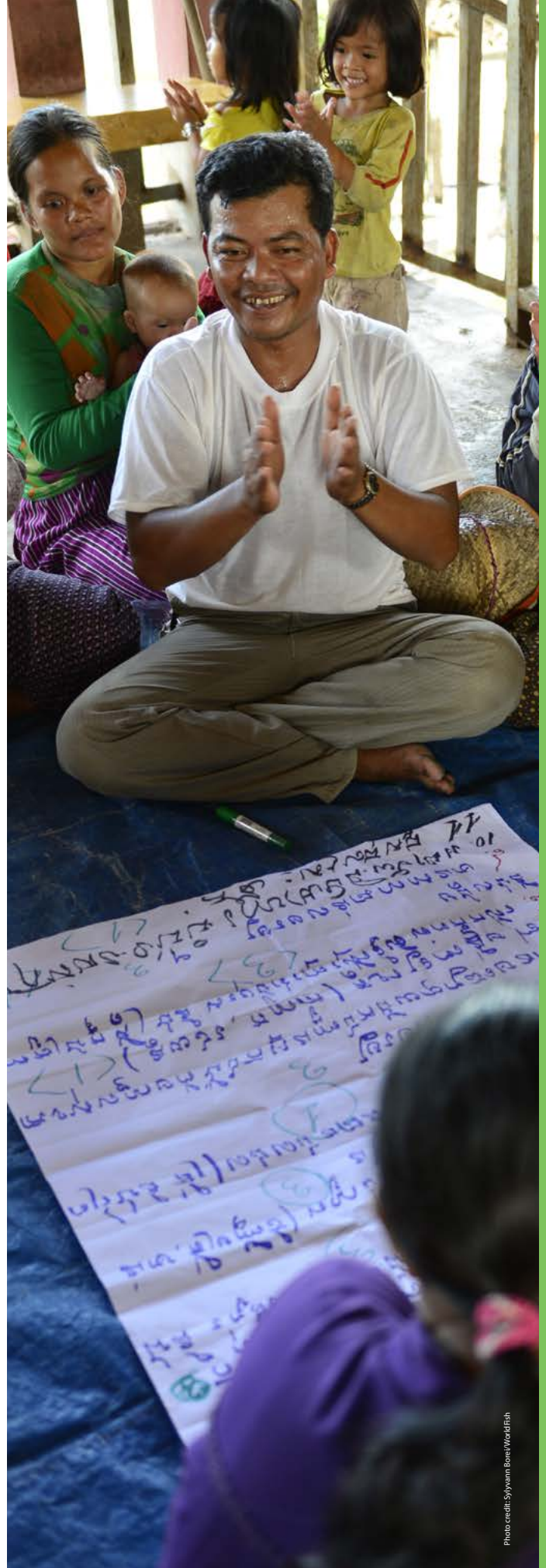


Photo credit: Sylyvann Bona/WorldFish

Soy Keo, AAS community facilitator in Raing Til village, gave a round of applause to encourage community members who participated in the CLCP process.

Community visioning

Improved infrastructure was a shared vision of the four land-based villages. The villagers in three of the villages envisioned having improved roads, a hospital, a bridge, schools and electricity available. They expected that better roads would help them transport agricultural products to markets. Santey village has a road, but would like a concrete one. They integrated this into the commune investment plan but were not sure whether it would be funded and implemented. As for electricity in Santey, the company started to put in poles but had yet to connect the cable and wires; villagers expected that the fees charged would suit their ability to pay. Also, they aspired to have a health center with good-quality services for children and adults, especially pregnant women, who need care and a place to deliver but cannot afford to go to the provincial hospital. In Rohal Suong, their vision of a road stems from the challenge of having no good road to connect the rice fields to their homes during harvest; they have to wrap plastic sheets around their harvest and carry it through the canal to their homes.

Similarly, villagers in Kampong Kor Leu envisioned a concrete road that affords them easy access and transport for their rice. At the time of the field visit, they had a gravel road that is 2125 meters (m) long, but an additional 1060 m was needed south of Stung Sen River. In addition, they wanted to see a bridge across the Stung Sen River. They knew that the Department of Public Works has studied this and had heard that construction will commence in 2015. For electricity, the company had relayed poles from place to place but had not erected them yet. In Kampong Kor Leu, villagers wanted to have a *salachhan* (monk's dining hall), because the one they have now is old and having a new one will raise the village's religious status, as it is a place where people in the commune come to ceremonies. In Bakou village, people wanted to see a concrete road; this was aligned with their commune investment plan in 2014. The road will be constructed from Chamkar Tabo village to Toul Preah Prey, where there is already a nonconcrete road. People said that travel on

this road is very dusty, which concerned them because of possible effects on their health.

The vision at the household level was to see houses with a clean environment and proper toilets. This vision was voiced mainly in Santey and Kampong Kor Leu. In Kampong Kor Leu, Caritas provided houses for resource-poor people, while the Cambodian Red Cross provided toilet facilities to some households. This village has more than 100 houses, and they thought that in the future they would no longer depend on external support but on their own initiative and resources. They did not only need to have good houses but also a clean environment. At the time of the field visit, villagers were using water directly from Stung Sen River, and people still practiced open field defecation, which they felt caused problems for the water they were using.

With regard to education, there was a common vision of having educational facilities close by the homes or villages, although desire differed in terms of level of education. In Santey, the people wanted an upper secondary school in the village so that children from within and from neighboring villages could come to study. There were many children who had completed lower secondary school but could not afford to go higher because the school is far away and their parents do not have enough resources to support their children. To fulfill the needs of dropped-out children, they would like to see foreign language teaching and vocational skill training so that they can improve their job prospects and better their livelihoods. Likewise, people in Kampong Kor Leu wanted to have a lower secondary school in the village, although their children can go to a rather distant lower secondary school in the neighboring village. Some students had already dropped out, except those from a few better-off households who continued to study at the provincial town of Kampong Thom. A rather different vision was voiced by people in Bakou village. Children from there have little or no problem accessing different levels of schooling since the upper secondary school is within reach at about 5 km away; hence, they would like to know that their graduates from upper high school will be employed.

The visions of continued access to public fishing grounds and household aquaculture go hand in hand, especially since the people in these villages have experienced and observed diminished fishery resources. The community in Bakou could imagine the Tonle Om Lake put to good use by proper conservation and effective management by the local committee. They were discussing steps and a process to organize this. In the same vein, community members in Santey wanted to have additional village ponds so that they could increase fish capture, because they felt that it is not practical to depend solely on fisheries resources in Tonle Sap Lake. Similarly but on a larger scale, villagers in Kampong Kor Leu envisioned a broad conservation and fishery program; it is one of the five villages of Kampong Kor Commune that belong to one community fishery area, which encompasses the two big lakes of Beong Reil and Bang Preah Snaeng and was established in 2007. People here are responsible to take part in conservation activities and tree planting in the flooded forest.

With regard to fish culture, Kampong Kor Leu and Santey shared the same vision. At the time of the field visit, there were only two households in Santey raising fish. They envisioned that when all households started to raise fish, this would improve household income and reduce instances of illegal fishing. In Kampong Kor Leu, four households used to raise fish but failed because of lack of technical skills, despite the fact that the households worked hard on this activity. They continued to envision having all households engage in aquaculture; however, this would require setting up or improving fish ponds, fish seed, and advice from experts knowledgeable on aquaculture. They were enthusiastic about having experts work with them on aquaculture. The village chief of Kampong Kor Leu maintained that he was very optimistic about this because the community members have the desire and resources to do it, fish is food that all people like regularly, and it could help reduce poverty to some extent.

Increasing rice productivity along with improving rice prices appeared to be a common vision in all villages. Each village emphasized a somewhat different element of the dream: some focused on improving the irrigation

system, while others focused on short-season rice varieties and the use of agricultural inputs. Santey has a canal system that connects with Beng village during the rainy season. However, every year floods have affected the fish spawns and fingerlings in the village ponds and rice fields, along with destroying rice crops. The two villages have discussed rehabilitating the canal, but repairs would inhibit oxcarts and hand tractors going across during the dry season. In the end, they both agreed to divert this canal to connect to the main canal, which would still allow rehabilitation of parts of it. This project was integrated into the commune investment plan.

In Bakou, the rice yield was low except for households who had money to buy fertilizer. Therefore, the community was looking for ways to cut down the cost of soil preparation, choose suitable fertilizer and select seeds with higher yield. In addition, although the community members have access to the main canal from Pursat River, they need smaller canals to connect to their rice fields to make it easier to irrigate. People realized that the quality of the soil has deteriorated due to using fertilizer to get a higher yield. They were interested in how to revert to organic fertilizer that would increase rice yield.

In Rohal Suong, people farm rice, grow crops and fish. Many households have more than 5 hectares (ha) of land and usually produce high yields but sell crops at low prices. This has affected their ability to pay back loans for fertilizer and pesticides, as well as giving them less money for household consumption and for seeds. Rice varieties used are OM or IR66. They have also planted other crops on a rather large scale, such as watermelon, cucumber, corn and beans. The more resource-poor households with 1 ha or less grow rice for home consumption and engage in supplementary activities such as working in construction, doing car or bike repairs, or running a small business.

In contrast, people in Kampong Kor Leu use less fertilizer because the soil is fertile; their vision was to have sufficient water supply and better rice seed varieties. They reported that they do two rice season cycles per year; the dry rice season starts when the water recedes. They envisioned doing three cycles a year but were unable to because the rice variety they use

Visions	Santey	Rohal Suong*	Kampong Kor Leu	Bakou
Infrastructure				
Granite road for 3 km, hospital, bridge, school and electricity for all households	L2		L1	L1
Repair and expansion of road with bridges connecting to community fish sanctuary and rice fields		L1		
Rehabilitation and expansion of the streams		L1		
Repair of riverside road using laterite		L3		
All households having clean houses with clean environment and toilets	L3 (√)		L3	
Good <i>salachhan</i> hall within the compound of Wat Kampong Kor			L3	
Education				
Enhanced community education (secondary school) and vocational training			L2	
Education and vocational training	L1			
Secondary school graduates employed				L3
Fishing				
Sufficient ponds and wells for consumption			L3	L3
Family-scale aquaculture	L2		L3	
Elimination of illegal fishing				L3
Conservation of the lake (Tonle Om), growing trees (spawning areas), and conservation of new village fish ponds and natural resources	L1 (√)		L3	L2
Rehabilitation of the community fish sanctuary and dike built around it		L3		
Growing flooded forest in conservation areas and along the road to conservation area		L3		
Organization of the community fish sanctuary to be an ecotourism area		L2		
Livelihoods and agriculture				
Canals for irrigating rice fields (water gate) and effective water management	L2		L1	L3
Cement rings under the rice field to bring water from river to irrigate the field		L2 (√)		
Rehabilitation and expansion of irrigation canals		L3 (√)		
Improved soil fertility of rice fields				L2
High rice yield and price, and increased dry season rice to improve livelihoods			L4	L3
Quality dry season rice seeds with high yield			L2 (√)	
Low price of fuel and fertilizer for rice growing			L1	
Improved quality of life (skills in animal husbandry: cows, pigs, chickens and secondary crops)	L3		L1 (√)	L3 (√)
Markets				
Marketplace with good hygiene, markets for agricultural products, and advanced rice dryer warehouse for better rice prices	L2		L1	L3
Good market prices for products		L1		
Social issues				
Reduced incidence of migration				L2
Elimination of domestic violence				L3

* Note 1: Rohal Suong village's visioning exercise had just been completed at the time this report was being prepared, so its visioning report was not yet complete.

Note 2: (√) = Priority to mobilize local resources within 3 months; current level 1 = low to 5 = high score; L = level

Table 4. Community visions in land-based areas.

needs more than 3 months until harvest. The community discussed obtaining a short-season rice variety with the village and commune authorities, who shared the idea with officials from the Department of Agriculture. Another issue they wanted solved was the transport problem, as poor roads and no proper bridge result in spending more for travel by boat.

Kampong Kor Leu has one long canal with sufficient water to use for irrigation during dry season rice production, but they need to have a proper gate in order to regulate the water level. (The use of this canal did not affect the community fishery area, as the latter is situated in its upper part.) They need to retain water, especially during the water recession time when water flows out through Ta Duch's and O'Lor streams, resulting in a lack of water for irrigation. In the past, they used to pump water into the canal, but in the absence of a gate, the water flows back out. Many farmers abandoned dry rice cultivation because of this. Besides this vision, people also wanted to purchase on deposit in expectation of lower fuel and fertilizer prices.

In contrast to the other three communities, Bakou villagers expressed a desire to see their communities no longer experiencing domestic violence and the incidences of migration reduced. Addressing the causes of domestic violence and migration is part of the social development of their community. The participants in the visioning meeting raised the point that as domestic violence often occurs, it is important that various stakeholders address this issue by awareness raising and other activities. Key stakeholders would include village and commune authorities and government agencies. Other villages also raised the issue of migration. In Bakou, people migrated to work for a Chinese company in Cardamom Mountains, in garment factories in Phnom Penh, and mostly to work illegally in Thailand in construction companies or factories. The factors that push people to migrate are the lack of employment opportunities in the area, poor rice harvests, landlessness and debts to microfinance institutions. In Santey, some households also went to Thailand illegally, and 40 households moved to Preah Vihear and Ratanakiri provinces, where they could get land. These people sold off their land before they migrated. In Kampong Kor Leu, there were 177

people (including 99 women) who migrated to other areas in Cambodia, such as to a rubber plantation in Sandan district. In Preah Vihear, 69 people went to work in garment factories in Phnom Penh and 50 people went to Thailand.

The communities envisioned that their living conditions would improve with supplementary strategies of animal raising using more resilient animal varieties and home gardening. This vision was voiced in all villages. The people in Santey observed that their living conditions would be better if they had secondary activities such as animal raising and vegetable growing near their homes. There would be no need to work away from home if they had better prospects near their houses. The Bakou community saw the value of such endeavors, allowing them more time to care for their children, especially in terms of their education. In Kampong Kor Leu, some households have home gardens on their plots used for home consumption and hence no need to buy from outsiders. All villages reported that animal raising was done the traditional way because they do not have technical experts helping them learn modern techniques.

Community action plans

There were similarities between action plans in Bakou and Kampong Kor Leu regarding animal husbandry, aquaculture and home gardening. In Bakou, they chose to establish Tonle Om Lake as a conservation area to grow trees and to learn technical knowledge about aquaculture and vegetable growing. After discussion, it was decided that since establishing the conservation area and growing trees would take longer (more than 3 months) and involve a more complex process, as they still do not have a committee to manage it, Bakou would add plans for accessing technical knowledge about aquaculture and vegetable growing. The group asserted that they have capacity to implement both because they have rice fields and space for other crops and home gardens. The 3 months would be used to prepare the place for vegetables and trees that can grow right away.

Kampong Kor Leu chose to increase production of dry season rice or recession rice starting from November. Some of them had already taken initial steps to prepare their rice fields, but some had not started yet because their fields were in lowlands and they have to wait until December or January. They want to get to three cycles of rice production per year. They had already discussed the idea in small groups, with their village and commune chiefs; the commune chiefs agreed to bring this idea to a discussion with the company that sells rice seeds or the Department of Agriculture to find a rice variety with high yield that takes less than 3 months. Currently, the community members are using the Namkhung rice variety, which provides high yield but takes longer than 3 months.



My participation in this process is important because it helped me to realize that my dream is similar to others. The priorities selected are very important for me and my community. Even without the support from outsiders, we can still do it because it is our real need and we will do what we can.

– **Mr. Teng Roueng, 53,
a farmer in Rohal Suong**



For Kampong Kor Leu, another vision was to have home gardens, which they thought might contribute to improving their life. Vegetable growing is part of their life, and some households already have small gardens in which they grow things such as mint, garlic and cabbage and some fruit trees such as mango, papaya, coconut and orange. There are some model farmers who grow for income and who grow many things in their gardens. A farmer, Ms. Leing, has a model farm where she can demonstrate techniques to grow vegetables even during the flood because she has prepared support materials that can be raised higher to avoid the flood's effects. Villagers can learn from her experience.

Santey village selected effective water resources management as their priority. They focused on rehabilitation and repair of Dam 78 because 83 households from Santey have rice fields near the lower part of this dam, and the dam needs to be repaired. The people in this village worked together every year to do repairs and felt that they could complete this action plan. These rice field owners pay fees of 24 kilograms of rice per year for access to water use and fishing access rights. They have three committee members for managing the dam and water, and each year they get to replace one—agreed in principle and practiced annually.

People in Rohal Suong agreed to two action plans that were important to them: (1) to make a way to pump water from the river into the canal and irrigate the rice fields; and (2) to expand and rehabilitate the canal so that many farmers have better access to water for rice production; the rehabilitation and expansion of canals are to be done by machinery.

Santey chose to act on sanitation and a clean environment. They want to set up rubbish bins in public spaces and in homes. They want all villagers to understand the importance of waste management practices. They think they can implement this plan because they have organized a village cleaning day before and understanding of sanitation seems to have improved.

Visions	Santey	Rohal Suong	Kampong Kor Leu	Bakou
Priority: Sanitation and clean environment	L3			
Select the committee for Santey village	√			
Set up rubbish bins (committee)	√			
Determine the village cleaning day by committee and group leaders	√			
Maintain rubbish bins by committee and group leaders	√			
Priority: Effective water resources management	L4			
Repair Dam 78	√			
Maintain some level of water in Dam 78	√			
Priority: Setting up cement rings under the rice field to bring water from river to irrigate the field		L2		
Create awareness about the plan		√		
Prepare specific action plans for measuring the size of canals		√		
Clarify role and responsibilities of the committee		√		
Collect contributions by visiting each household		√		
Buy cement rings, cement, sand, soil and bricks, and start implementing the plan		√		
Priority: Rehabilitation and expansion of irrigation canals		L3		
Create awareness about the plan		√		
Prepare specific action plans for measuring the size of canals		√		
Collect contributions by visiting each household		√		
Hire machinery for rehabilitation		√		
Priority: Home gardens for households			L3	
Prepare soil among 33 households			√	
Have gardens around homes			√	
Sow seeds and prepare nursery			√	
Learn from the experience of neighboring villages			√	
Priority: Increasing dry season rice and storage of dry season rice seeds for better livelihoods			L4	
Organize dry season rice group			√	
Discuss the use of seeds, fertilizers and pesticides			√	
Discuss the use of equipment			√	
Prepare soil in the rice fields and sow seeds			√	
Follow up the growth of dry season rice			√	
Priority: Skills in animal husbandry and home gardens				L3
Try to obtain technical support for home gardening in Banteay Troak village				√
Learn techniques on how to have integrated gardens (14 people)				√
Prepare home gardens				√
Start growing vegetables and follow up				√
Share the experiences with others				√

Note: L = level

Table 5. Community action plans in land-based areas.

Community visioning

All studied communities envisioned better conservation and protection of flooded forests, either to encourage ecotourism for income and employment or to improve fishing. For floating communities, conservation of common-property resources was very important, as people believed this would increase fish resources to support their livelihoods. However, conservation and management of the flooded forests are complex and daunting tasks. People are struggling to compete for these diminished resources within the communities, resulting in some fragmentation of community cohesion and solidarity. They are also facing competition with outsiders as in-migrant families not involved in conservation of flooded forests want benefits from these resources. The resources are also under pressure from population growth. In addition, there is tension between communities and government agencies, as well as between individuals fishing at different scales. In Peam Ta-Uor, families with small gear compete with those with more advanced gear just to catch enough for sale and for their daily consumption. Generally, resource-poor families with small gear tried hard to catch fish so that they could repay their loans.

The vision of ecotourism is important since it adds value to conservation efforts and additional income for households. However, not all water-based communities envisioned this. The geographic context favors Peam Ta-Uor and Anlong Ta-Uor (commonly referred to as Prek Toal). These communities saw that promoting and expanding ecotourism would bring benefits and encourage them to protect the flooded forest and conserve the lakes. They intended to expand ecotourism to Sroung Conservation Lake, not far from Siem Reap town. This was initiated but not implemented because of lack of resources and capacity. At the time of the field visit, visitors would come to Mechrey Pagoda and the community, especially during the wet season when houses assemble around the pagoda compound. This can be a source of inspiration for a new site like Sroung Conservation Lake. Noticeably, at least one small restaurant and a floating

crocodile farm exist in the area and may attract tourists. Not only does ecotourism provide benefits to households but it also encourages young women to have roles in economic and conservation activities. "Ecotourism is an easy job that allows a woman like me to tour boating visitors around conservation areas; at the same time, it allows me to observe and patrol any kind of activity, including illegal ones," said a 24-year-old woman during self-assessment in Peam Ta-Uor village.

The vision of better livelihoods and household income strategies was common to all households in all communities; the focus was on having more capital for income-generating activities such as aquaculture and raising of pigs, chickens and ducks. In Chnok Tru, the main livelihood source was aquaculture (*pra* and tilapia), fish processing (into *prohok*, *pa-ork*, *mam*, smoked fish, etc.), small-scale agriculture such as growing eggplant and sesame in the water-recession season, and rice farming on a small scale. There were also different kinds of shops, selling groceries, clothing, fishing gear, fuel, boat spare parts, etc. Supplementary income sources included collecting snails, shells, water lily, wild leaves and water convolvulus. As this was the main business center, the better-off households engaged in fishery-related business. Resource-poor households were indebted with loans; they purchased gear on credit and some did wage work to collect shells and snails for others. Several households migrated to work in Thailand, Malaysia or Korea for more income. In contrast to other communities, one element of Chnok Tru's vision included having access to a social land concession⁴ and having fish processing stores.

With stiff competition for fisheries resources in public spaces, the community members wanted to engage in the lucrative culture of *trei chdoar* despite known prohibition by law. Aquaculture is a common practice in floating villages and is a large source of income. *Trei chdoar* is bought at higher prices and results in better income compared to allowed species (catfish or *trei andeng*), which are cheaper yet require the same investment in fish feed and time. The community members were aware of high risks

Ms. Nheuk Hort, 65, is a member of the community fishery in Peam Ta-Uor. She commented, “I grew vegetables last year and I will do so again in the next dry season. I learned to grow them by myself without going through any formal training, merely by asking neighbors who had experience doing this. I spend about KHR 4–5 million per season, which includes renting a hand tractor for plowing; buying seeds, pesticides and fertilizers; and hiring workers. I grow eggplant, gourd, pumpkin and long bean. Some seasons, I make a profit of KHR 500,000–1,000,000 and some seasons I just break even. Other times, there are added costs of KHR 500,000–700,000. This money for expenses needs to be paid back with 10% loan interest per month, because I do not have collateral. Sometimes I borrow from relatives with 2%–3% interest or in some cases without interest. I have to sell the products I grow to the person who gave me the loans even if the price is lower than in markets. Otherwise, they would not loan to me again or let me take out the current loans without a fixed schedule. I would like to appeal for support in learning growing techniques and acquiring seeds and some capital; it would be good if generous people or organizations could help me to continue doing this so that I can increase my income, which would enable me to send my children to higher schools.”

in doing this but wanted to try it anyway. They had observed that medium- and large-scale *trei chdoar* fish raisers have a good relationship with authorities, as their business continues despite the prohibition. In Peam Ta-Uor, households engaged in aquaculture or fishing in public spaces for small fish to sell as feed to the *trei chdoar* fish-raising businesses. The participants in the meeting reported that in-migrants from Pouk district center usually have modern, large-scale gear, which threatens the livelihoods of small fisher households and further diminishes the fishery resources.

People’s talk about aquaculture makes specific their visions. Villagers in Peam Ta-Uor focused on learning about aquaculture techniques to gain a better profit. Fish culture faces challenges such as the high cost of feed and fingerlings, since these are acquired from Vietnam or Thailand. Villagers felt that they did not possess sufficient skills for profitable aquaculture—even with the training from the ADB and advice from some experienced villagers. Chnok Tru was considering expanding the number of households that are engaged in aquaculture. Raing Til wanted to improve access to capital to invest in aquaculture. These communities were interested in raising hybrid fish species, which bring a better profit although they are not in accord with the existing Fishery Law and relevant regulations.

A basic vision of floating villages was for decent housing structures. Housing is an

indication of physical welfare and a symbol of household status. It is important as collateral for loans needed for emergencies as well as an investment. In response to the community facilitator’s question about the details of this vision, people talked about housing structures that are improved from their current status, and are sturdy enough to withstand storms and rain—floating houses with wooden walls and corrugated iron roofs. The housing structures at the time of the field visit were made from bamboo with thatch or leaf roofs; some houses were makeshift, made of leaves and plastic sheets in poor condition. Peam Ta-Uor and Raing Til envisioned decent houses of their own. Anlong Ta-Uor envisioned having decent houses for more social groups, such as resource-poor and older persons. More surprisingly, Chnok Tru envisioned having land from the state’s social land concession program, where they could build a permanent resettlement within their commune rather than move back and forth on water every year. Chnok Tru community, together with the commune council, incorporated this idea into the commune investment plan, but it was not approved by upper-level authorities. Their houses are frequently affected by heavy rains and storms.

Even more than their vision for decent housing, community members were concerned about saving money. The cost of frequent repairs is a great challenge for resource-poor and vulnerable families, such as women-headed

households and disabled people. Some of these households owned only very small fishing gear and sometimes could not afford daily food because of low fish catch. Some others did not even have fishing gear and depended on labor for income by collecting wild vegetables such as morning glory (*trakuon*, *phka snor*, etc.) for sale or for exchange for daily needs. From year to year, their house structures get worse as storms and rain become more turbulent.

Villages envisioned having access to safe water for drinking. Poor quality of drinking water and poor environments were identified during the facilitation process and home visits. Most of the villagers were aware that poor household practices may cause health problems, especially among children, but habits and behaviors had not changed. For instance, when they went fishing far from their villages, they drank water without treatment. Not all floating villages had water supply stations, especially Peam Ta-Uor. The other three communities of Anlong Ta-Uor, Raing Til and Chnok Tru had floating stations but they did not supply enough, especially during the dry season. The ADB-funded Tonle Sap Sustainable Livelihoods project's current station was easy to access during the wet season only. Villagers usually settle close together at the village center but scatter during the dry season to make fishing more accessible. They did not make use of these water stations, given the distance and the cost to transport collected safe water. In addition, the villagers were too busy with fishing activities. Only some households boiled their water.

Poor sanitation among floating villages, especially during the dry season, was seen in increased solid waste thrown out all over the place, which added to the poor health of the floating community. This situation was reflected in some communities that envisioned better waste management, including solid waste collection and improved toilets. Chnok Tru and Anlong Ta-Uor envisioned improving these elements. They may be influenced by past and existing development projects; for example, Anlong Ta-Uor has an ecotourism project that gives priority to improving waste management to attract more tourists, while the NGO Live and Learn used to create awareness sessions in Chnok Tru. Chnok Tru commune councilors also expressed concern that poor management of solid wastes like plastic will add to making the lake shallower.



I have to get up early in the morning with a small boat (without a motor) to fish, but sometimes I don't catch much fish. The fish is the only food for our family meal, without rice. I borrow some rice from neighbors. Especially from September to October when there are heavy rains and strong storms, I cannot go fishing.

- **Theang Samoeun, a woman head of household in Raing Til with a child under 5 years old, whose life situation has become worse from year to year**



Visions of better access to and affordable health center services differed by the context of the villages. One place had better access than another even though they had a similar socio-ecological context. Health centers are fixed buildings usually located in the center of a village or a commune and corresponding to the size of the population served. The floating communities found them more difficult to access during the dry season because their houses move away from the health center and road conditions are bad. Three of the communities were concerned about health center services. Peam Ta-Uor envisioned having health center buildings in their community, while Raing Til envisioned building a health center with additional services. Chnok Tru envisioned their current health center improving to 24-hour service, 7 days per week. In contrast, Raing Til community envisioned having public transport like boats for the wet season and cars for the dry season to facilitate referrals of any serious cases of illness to the district center or provincial town.

All four communities had the same vision of improving education and vocational skill training. Different elements of the vision depended on the level of education and facilities available in each community. For communities that had only primary school, such as Raing Til and Peam Ta-Uor, the vision was to

have at least seventh through ninth grades of secondary school in their community. This vision was spurred by the high cost of transport to schools as a burden to those of poor economic status, which inhibits their sending their children to schools; another problem was the security concern when their children travel long distances—there was fear of storms and rains, and worse fears for girls. Raing Til community had a high dropout rate, especially of those from resource-poor households with no link or relative living near the secondary school in the provincial town. Chnok Tru and Anlong Ta-Uor communities had a primary school but wanted vocational skill training for youth, especially those who have graduated secondary school.

Community action plans

All studied floating communities shared two common projects in their action plans— income-generating activities and improved family health practices—to be implemented within 3 months or less.



I am very interested in this activity, and I am aware that this process enables the community members to participate and know what to do, to be more responsible. I used to attend many meetings organized by other NGOs, but this is unique.

– **Mr. Chan Ek, 40,**
deputy chief of Sangkat
Fisheries Administration
in Anlong Ta-Uor



Peam Ta-Uor and Anlong Ta-Uor shared the priority of income-generating activities but with a different focus: Peam Ta-Uor envisioned aquaculture and Anlong Ta-Uor was more focused on chicken raising; both shared the priority of home gardening. It was clear that both villages have resources that can be used for implementing activities, and they were willing to share experiences with each other. Raing Til community shared the same priorities but approached their action plan from a

different angle: First, they wanted to create better awareness about the importance of aquaculture and animal raising for the benefit of households; then, they wanted to organize small groups to save money with a proper management system so that they have some money to implement their priorities.

Raing Til and Chnok Tru villages shared similar visions regarding improving health and nutrition. Chnok Tru wanted to start with improving household health through safe drinking water practices, especially for those that fish away from their homes. As a starter, they wanted to create better awareness among the general community about the importance of drinking safe water for individuals and their households. Raing Til was more focused on children’s nutrition. Seeing that teachers play an influential role on children, they planned as one of the activities to have teachers create awareness among children about the importance of consuming nutritious food. These activities are likely implementable because they primarily require the will of the stakeholders rather than major inputs.

Visions	Peam Ta-Uor	Raing Til	Chnok Tru	Anlong Ta-Uor
Priority: Fish conservation and natural resource management				
Conservation and natural resource management (fish, flooded forest, lakes, etc.)	L3	L3	L2	L3
Ecotourists visiting conservation areas	L2			L3
Fishing gear suitable to household needs		L3		
Priority: Livelihood and household strategies				
Aquaculture	L4 (√)		L3	
Vegetable growing	L3 (√)			L3 (√)
Livestock raising (chicken, ducks, pigs)			L2	
Capital for income generation (aquaculture, chicken raising, etc.)		L2 (√)		
More households engaging in aquaculture and chicken, duck and pig raising				L3 (√)
Social land concession for rice farms			L1	
Fish processor—floating houses				L2
Priority: Household, water and sanitation				
Decent houses	L2	L3		
Houses for resource-poor households and the elderly				L2
Social land concession for residential land with fixed houses			L1	
Reliable water supply station	L2		L3	L3
Better community ponds (rehabilitation)		L3		
Better health and hygiene practices			L3 (√)	
Priority: Public health access				
A health center in community	L1			
24-hour health services at health center			L3	
Public transport (boat, cars) for emergency medical assistance to provincial hospital		L1		
Waste management (plastic, toilets)			L2	L3
Priority: Women and children				
Gender equality and family happiness without violence		L3	L3	
Better hygiene and nutrition for children		L2 (√)		
Priority: Education and vocational training				
Secondary school in village grades 7 to 9		L2		
Better education and vocational skill training	L3			L3
Villagers to become local teachers				L3
Better road that connects to schools			L4	
Public transport for children to schools				L2
Priority: Other infrastructure (road, market, pagoda)				
Good road and culverts along the roads during dry season	L3			
Better laterite road that connects to commune center		L1		
Road along commune boundary			L1	
Decent pagoda community hall		L3		
Permanent market building			L1	
Floating markets in community and export of fish products				L2
Enough infrastructure, health services, schools and other institutions				L3

Note: (√) = Priority to mobilize local resources within 3 months; current level 1 = low to 5 = high score; L = level.

Table 6. Community visions in water-based areas.

Visions	Peam Ta-Uor	Raing Til	Chnok Tru	Anlong Ta-Uor
Priority: Increase household income through fish and chicken raising				
Select type or seed of fish	√			√
Get hybrid chickens				
Organize training and share practical experience	√			
Build new fish cages and repair	√			
Build new chicken houses and repair; find feed for chickens				√
Train in food processing	√			
Conduct follow-up, monitoring and counseling on how to maintain	√			√
Priority: Increase household income through vegetable growing				
Prepare the space, farmland and seeds	√			
Connect floating houses with farmland and seeds				√
Conduct follow-up and provide technical support	√			√
Increase knowledge by sharing experiences	√			
Priority: Mobilize capital for income generation				
Raise awareness and mobilize members to start aquaculture, chicken raising, etc.		√		
Set up savings group and regulations		√		
Register, maintain bookkeeping, carry out transactions on savings and lending		√		
Follow up and check cashbook		√		
Hold reflection meeting and prepare for next year (2014)		√		
Priority: Promote hygiene practices and nutrition for children				
Prepare nutritious food for children		√		
Follow up and do home visits on cooking practices for children		√		
Raise awareness on hygienic practices with schoolchildren through teachers		√		
Priority: Better household health and sanitation practices through drinking safe water				
Raise awareness with neighbors about boiling drinking water			√	
Prepare boiled water for family members when fishing away from homes			√	
Follow up and encourage practices			√	

Table 7. Community action plans in water-based areas.

Community visioning

Obviously, sufficient food for communities' families is the most basic need, and this was the key element in the visions of people in the four land-and-water-based communities, although they envisioned using different strategies to achieve their goal. The villages of Muk Wat, Prey Chas and Neang Sav went further, saying that they wanted to reduce the level of dependency on fishing by engaging in agricultural activities, including growing rice and secondary crops in floating gardens. They also wanted to engage in animal production in order to have supplementary options for consumption and for income. In Prey Chas, 42% of households belonged to the Identification of Poor Households Programme (known as IDPoor) categories 1 and 2 combined. At the time of the field visit, about 100 households grew vegetables in floating areas, yet only two households grew corn and vegetables in the dry season. In Neang Sav, the emphasis was on animal raising, such as chickens and ducks, to reduce pressure on fishing. In Muk Wat, villagers were interested in secondary crops, having seen some households grow beans and corn on small plots of land. However, they need to first acquire sufficient land—which is restricted because they are situated in areas surrounded by protected forest.

Tramper villagers wanted to see the dam connected with irrigation canals and rice fields, because the canal was shallow and short in length. There was not a sufficient supply of water for cultivation. Furthermore, they wanted to have a center that can provide agricultural techniques for the communities. In addition, they said their income would be better if they had a market for handicrafts (such as *bangki*, *chhneang* and hammocks) in their communities, because rattan and water hyacinth are plentiful in the area and processing these would improve income. The rice harvest had been about 1–2 tons per hectare since they were affected by consecutive floods. Villagers reported that they had to pay off debts from loans incurred for agricultural inputs such as fertilizer. On top of that, they often had to sell rice to middlemen for well below market prices. They wanted

one community rice mill to allow cheaper and faster milling of rice; there is currently one small private mill, and they felt that outsiders always came in with their own equipment to exploit them. With the poor rice harvest, some people had migrated to other areas. There was land space available that villagers felt could be used for gardening instead of buying from outsiders or getting crops treated with chemical substances.



The village meeting to create community visions is very important for my community. In past planning processes, we always looked for resources from outside but forgot to look at resources available within our own community.

– **Mr. Tuon Theang, 44, community fishery head in Tramper**



Equally important was the vision of better infrastructure, both at individual level and at community level, with elements such as better housing conditions, roads and access to electricity. The three communities of Muk Wat, Prey Chas and Neang Sav wanted to see better housing conditions, but this was not mentioned in Tramper. Muk Wat, Prey Chas and Tramper wanted to have granite or concrete roads, but not Neang Sav, because although it dries out during dry season the means of transport from place to place is still by boat. In Prey Chas, 163 houses were located on water and 67 households on land, and they had no road in any season except 100 m connecting the village with the market place. Unique to Muk Wat was a vision to see a better concrete bridge across the river during the dry season—the bridge and road would connect the village to the local market for its saleable products and other services nearby. Both Prey Chas and Tramper wanted to see their communities

have electricity available to them; at the time of the field visit, they used private supplies of electricity. Some used their own generators and others relied on batteries, which they recharged in a battery-charging stall in the village.

Unique to Prey Chas was the vision of a new shelter for the monks, as it is a public place where people gather for social and cultural activities. (The shelter was 1200 square meters and located on the small hill in front of the pagoda, which serves as the marketplace for fish, vegetables, groceries and drinks; it is adjacent to the pier for boats from Prek Loung community in Battambang and serves as an active trading hub.) In Tramper, villagers wanted to have a marketplace, as they only had small shops for groceries.

With regard to water supply and health, all villages shared the vision of equal healthcare access and quality services with qualified medical professionals, as well as better sanitation. This vision included key elements of access to safe water, medical care and treatment, and having household toilets. Specifically, Neang Sav wanted to see access to safe water supplies and reduction of water-borne diseases. Muk Wat wanted to have more village ponds for access to sufficient water, and to increase the number of toilets for all households. Access to a safe water supply was not an issue in Muk Wat because there was a Ship of Life that produced pure water and supplied it to villagers per their needs free of charge, although community members were not aware of how long the service would last. In Tramper, about half of all households had access to a water purifier and toilets. Acquiring health services was imperative in Prey Chas, where people traveled to Battambang for health services by boat—it takes 5 hours during the dry season and 2 hours during the flood season from September to November. With the health center far away and the cost of transport high, birth deliveries were always in Prey Chas commune, about 7 km away or about 1 hour by boat, mainly for better-off households; resource-poor people relied on the services of four traditional birth attendants in the village. The need for toilets was seen in the prevalence of open defecation.

In the fishery sector, a shared vision by all communities was household engagement in aquaculture; other aspirations differed from place to place. In Prey Chas, people engaged in fishing in both the dry and wet seasons. They fished in public spaces and also pursued private aquaculture using *troerng* (fish cages) for *trei chdoar* fish. They claimed that this was the only option available to them, as they have no land for rice growing. There were a total of 103 households using cages to raise *trei chdoar*, having learned the technique from one another. *trei chdoar* fish raising is banned by law, but for the community it was seen as a matter of survival. It is easy to raise and results in higher income, as within 6 months they could earn KHR 6–8 million. Villagers in Tramper also saw that fish culture can bring income in addition to rice production and fishing in public spaces, but what type of fish they wanted to raise was not mentioned.

The communities of Prey Chas and Tramper shared similar visions of forest conservation and cracking down on illegal fishing. This reflects the context of Prey Chas, where there are limited options for the community to pursue other sources of livelihood; it was not clear how dependent Tramper community was on fishing. Prey Chas saw the need to conserve fish and flooded forest since there was no appropriate enforcement. Among other factors, they felt they had not done enough due to lack of resources for patrol and the low capacity of the committee. The community fishery in Prey Chas was organized in 2003 to manage one particular area but later added the former fishing lots 9, 10 and 12 for a total area of 7749 ha. They had not subdivided the communities into three clusters for management of this area nor finalized the membership and responsibilities. It is interesting to note that they owed moneylenders for buying gear that was frequently destroyed by authorities, as the gear was prohibited. Their fishing in public spaces was not for income but for raising *trei chdoar*, as it offers high income. In Tramper, there is a lake known as Boeng Tram Per that had never been dry and had plenty of fish before; at the time of the field visit it was reported to be getting shallow due to natural and human factors. The community members had also observed the destruction of flooded forest, which is an important fishery habitat.

Visions	Muk Wat	Prey Chas	Tramper	Neang Sav
Food security				
Sufficient food to eat, improved living conditions and reduced dependency on fishing through dry season rice cultivation on land allocated by the state, through secondary crops and floating gardens	L3 (√)	L2	-	FL1, FL3, ML2, ML3
Technical skills to raise animals in each household	-	-	-	FL1, ML2
All households having <i>chankar</i> land for secondary crops	L3	-	-	-
Dam and canal that connect to rice fields	-	-	FL3, ML3 (√)	-
Center for agricultural training	-	-	FL1, ML1 (√)	-
Community rice mill	-	-	FL2, ML1	-
Small enterprise for handicrafts (<i>bangki</i> , <i>chheang</i> and hammocks)	-	-	ML1	-
Infrastructure (individual vs. community)				
Better and clean housing conditions (leading to better health)	L3	L3	-	FL2, ML3
Bridge across the creek during dry season	L2	-	-	-
Granite and concrete road (for 3 km), electricity, and culverts	L1 (√)	L1	FL1, ML1	-
New monk shelter and good <i>vihear</i>	-	L3	-	-
Electricity in all households	-	-	FL2, ML2	-
Market in the village	-	-	FL1, ML1	-
Health services				
Access to equal health services (health center), and staff regularly present at health post	L1, P	L1	FL1, ML1	FL2, ML2
Increased access to safe water supplies and reduced water-borne diseases	-	-	-	FL2, ML3
All households with toilets and improved sanitation	L2	-	-	FL1, ML3
Sufficient village ponds with water	L1	-	-	-
Fisheries and regulations				
Plenty of fish like in the past	L1	-	-	-
Gear suitable to location allowed for those who live next to conservation areas (<i>lob lok</i> 250 m)	-	-	-	FL1, ML2
Family-scale fish culture (legal trot fish) and family fish ponds	L3	L1	FL3, ML3	FL2, ML3, M (√)
Forest and fish conservation; reduced illegal fishing	-	L3 (√)	FL4, ML4	-
Rehabilitation of Tramper reservoir	-	-	FL3, ML3 (√)	-
Only one technical agency to manage fishery sector	L1	-	-	-
Increased fish value at the market through processing	-	-	-	FL3, ML2, F (√)
Education				
Kindergarten in the village	L1	-	-	-
Increased level of education (junior and senior) in secondary school and Buddhism school	-	L1	FL1, ML1	FL1, ML2
Human resources	-	-	FL2, ML3	-
Social issues and community development				
People attending community development activities and meetings	-	-	-	FL4, ML3
Elimination of domestic violence	-	-	FL1, ML1	-

* Note: (√) = Priority to mobilize local resources within 3 months; current level 1 = low to 5 = high score; L = level; P = priority; F = female; M = Male.

Table 8. Community visions in land-and-water-based areas.

A point of similarity for Neang Sav and Muk Wat was the desire for reforms in the fishery institutions and policies. The difference is that Neang Sav focused on more flexible use of gear (*lob lok* 250 m), while Muk Wat focused on simplifying the regulating institutions. This seemed to be about access to public fishing more than the theme of “institution” in their vision. The central focus diverged in the discussions during SALT visits and small groups; Muk Wat debated the idea of having one agency to operate in the area rather than having multiple ones, which leads to confusion and obliges fishers to pay countless informal fees, thereby affecting their ability to earn income for their households. For them, having a single agency would make their access easier and allow for a single entity to bring issues of concern to. However, this may not be realistic given the institutional setup and circumstances. Neang Sav faced a similar problem but did not worry about different kinds of stakeholders involved in the fishery sector management or governance. Rather, they were more concerned about regulating gear that is suitable to the local conditions and traditional practices, especially in the context of the constantly changing market conditions. It appears that the difference of vision has something to do with each community’s ability to bend to existing institutional challenges.

Unique from other villages, Neang Sav wanted to increase fish values at the marketplace through processing. There was a need for a market that offers higher prices for *prohok* (pickled fish) and *pa-ork* (smoked fish) for export. Since the abolition of their fishing lot, they claimed they were not getting good catches because they use small gear. On the positive side, people in the community know how to make smoked fish and pickled fish; however, they have not been able to get good prices. People in Neang Sav live along the Sen River year round—6 months of staying afloat and the rest on land. A small number of households engaged in rice farming, and about 5 percent engaged in home gardening on floating areas. Overall, people were fishers with some secondary activities such as growing crops, running grocery stores and engaging in wage work. They had some public facilities that were closer to the community compared to some other villages in this study; for example, they had a health center, one secondary school and the

commune office. A water supply station, which was supposed to serve the community, was erected but not yet functional. People bought materials and water for consumption from Chnok Trou.

All villages shared the desire to have some level of education that would benefit their children. Muk Wat needed a kindergarten for their young children; Prey Chas, Trumper and Neang Sav needed junior and senior high schools. At the time of the field visit, in Trumper, the junior high school was at the commune center, which is about 15 km away from the village. It was therefore hard for the children to go to study, especially during the rainy season, and many children dropped out after completing primary school. In Trumper, having a kindergarten would help parents do other livelihood activities. In Prey Chas, only a primary school existed, and upper school children had to go far to attend school. In Neang Sav, there was a junior secondary school, but it did not have an upper secondary school, which constrained children from going higher in their education. In Muk Wat, they wanted to have a kindergarten because they thought that it could free up parents’ time for other income-generating activities.

Community action plans

Action plans were different from place to place due to the selected priorities of each village. However, in the future it may be possible that villagers come back to other priorities and new action points and find aspects in common.

There were three different kinds of community action plans in Muk Wat: infrastructure, health and food security. There has been some history of people working together to build the granite road through their own contributions. A granite road does not ease transport and movement of goods and services but improves the image of the village, as they receive tourists every year, especially during *Pchum Ben* and Khmer New Year events. The resources are there and the social capital of willing people only needs renewal. An interesting question to keep an eye on is whether when people have better or improved livelihood strategies and incomes, will this translate to them contributing more for infrastructural development needs?

As for access to healthcare, they had a village health volunteer in place, making it easier for them to build links with existing medical practitioners or health center staff to deal with health issues. This is an issue of governance, where the participation of the stakeholders becomes very important. This is not a major investment compared to infrastructural development, but the risks have to do with the willingness and motivation of the community.

For food security, it seems that the communities were interested in seeking support from outside through technical support rather than through programs that increase dependency. It remains to be seen who they will approach for support. However, it seems the commune council is important as institutional support, which can sustain their access more informally.

Neang Sav selected two different visions: (1) fish processing in order to increase market values, and (2) family-scale aquaculture. They planned to organize a small group of fish sellers to support each other and to strengthen their collective voice for future bargaining power. This would allow them to sustain their fish processing enterprise. As mentioned in the vision, they believed they were able to implement this plan because they have local people with skills to process fish products. However, the risk is whether the willingness to work together as a group will be sustained and whether they can connect to buyers and markets that offer better prices for their products because they can sell as a group. Likewise, the plan for small-scale aquaculture was seen as feasible, although it was not clear what kinds of fish they would raise. It is apparent that they need technical support to assist them in realizing this vision.

In Prey Chas, while the community members were excited about the vision of aquaculture, they instead chose to prioritize the community vision of better protection of forest and fish conservation. There was a recognition that the community fishery committee seemed to not function well. There was need to further discuss how the community fishery could be strengthened and made functional. As part of the effort, they planned to organize an awareness-raising event about conservation. The restructuring of the patrol teams appears

to be the key in this effort, but risks remain as to what incentive can be used to enhance participation in this process, as well as the fact that their patrol area is quite large because of the added former fishing lot area.

Tramper community elaborated their action plan on two selected priorities. There is a large reservoir that provides water and fish for the community but it had become shallow. Given its importance, the community agreed to rehabilitate the reservoir and to remove water hyacinth from it. This may not suffice to sustain the water level, so they also planned to repair the dam. It was unclear how much effort they needed to put into repairs, as there was no indication of the extent of the damage. The other plan of action in Tramper was to learn from experiences of farmers who successfully grew rice and vegetables in the community. The participants planned to encourage their neighbors and friends to join the sessions so that successful techniques could be replicated, which they hoped would lead to their vision of an agricultural training center. Another issue of concern that they wanted to address was reducing domestic violence, mainly through awareness raising by the village chief and commune chiefs.

Visions	Muk Wat	Prey Chas	Tramper	Neang Sav
Priority: Building granite road 3 km				
Establish nine-member committee	√			
Collect contributions from the community by the committee	√			
Have the committee talk to commune councilors about the proposed project	√			
Priority: Equal access to health services				
Have the nine-member committee discuss and analyze problems	√			
Have the village chief and health volunteers bring this issue to the medical practitioners	√			
Have the village health volunteers report results of meeting to the committee	√			
Priority: Sufficient food in households				
Have the committee establish a subcommittee to support resource-poor people	√			
Have the nine-member committee make a list of resource-poor people	√			
Have the nine-member committee and subcommittee find food aid for the resource-poor	√			
Priority: Fish processing to increase market value				
Organize fresh and processed fish sellers into group				√
Start fish processing (pickled, smoked and dried fish)				√
Organize group meeting to share information				√
Priority: Family-scale aquaculture				
Start producing fish cages				√
Procure fish seed				√
Provide feed every day				√
Organize aquaculture group				√
Seek technical support in aquaculture				√
Priority: Better protection of forest and fish conservation				
Organize meeting to strengthen the community fishery		√		
Raise awareness in community about the importance of conservation		√		
Restructure the patrol team and start implementing		√		
Priority: Rehabilitate Tramper reservoir and repair the dam				
Have village chief mobilize the communities to discuss rehabilitation plan and organize meetings			√	
Start to rehabilitate the Tramper reservoir (remove water hyacinth from the reservoir)			√	
Organize meeting with committee and village chief to coordinate the rehabilitation activities			√	
Create awareness about plan and benefits of reservoir rehabilitation in the community			√	
Have the committee and village chief collect materials and equipment and set date for rehabilitation			√	
Start rehabilitating and maintaining the reservoir			√	
Organize meeting with committee and village chief to discuss plan to repair dam			√	
Create awareness about plan and benefits of dam repair in the community			√	
Have the committee and village chief collect materials and equipment for dam repairs			√	
Start repairing and maintaining the dam			√	
Priority: Training center in agriculture				
Make a list of people who are interested in learning about and growing vegetables			√	
Have village chief contact Mr. Khein and Mr. Prak to share their knowledge about rice and vegetable growing			√	
Have Mr. Khein and Mr. Prak start sharing experiences about rice production with high yield and vegetable growing, respectively			√	
Priority: Elimination of domestic violence				
Have village chief, commune chief and commune police create awareness-raising session about domestic violence with experienced households			√	

Table 9. Community action plans in land-and-water-based areas.

COMPARISON ACROSS THE THREE AGRO-ECOLOGICAL AREAS

Comparing the communities at regional level, their agro-ecological contexts determine each community's visions and action plans. To a lesser degree, these are also determined by the situation of the infrastructure and presence of development services.

The vision of increased rice productivity and food security is shared between land-based and water-based regions. However, how they would approach achieving those visions is different, especially in the land-based region, which focused mainly on use of more resilient rice varieties with a shorter period until harvest, along with the availability of an irrigation system. The study team found it surprising that the land-and-water-based area did not include this vision.

All regions share the vision of fish conservation, as they have great concerns about current illegal fishing practices and the rate at which the fish resources they usually depend on are being diminished. Meanwhile, their conservation vision links to promotion of eco-tourism for employment and income, especially in water-based regions, and the protection of inundated forest, which is very important for fishery habitat. This issue relates as well to fishing in public spaces in terms of the acknowledged depletion of resources.

One thing that is found to be similar across the three regions is that education and training is important to them, despite differences in levels of education; they want this public service to be available nearby, and they mentioned that it would help to reduce the incidence of school dropout. Another emerging similarity is aquaculture. The land-based region did not provide specific reference to the variety of fish, as opposed to water-based and land-and-water-based regions. These refer mainly to *trei chdoar*, as it offers them attractive benefits despite their knowledge that it's against the existing fisheries laws and policies.

There are also differences, however. In terms of infrastructure, it is important to look at two levels: the household level, where the water-based and land-and-water-based communities

share the vision of having decent houses, and the community-level visions that include roads, bridges and electricity. These visions were only in the land-based and land-and-water-based regions. Even though the two regions mentioned having decent houses, no mention was made of a better housing environment and proper toilet facilities; the latter vision is found instead in the land-based region.

The action plans that the communities want to accomplish within 3 months depend on the priority visions they have selected. The visions that are similar across the three regions center around hygiene, sanitation, water supply and equitable health services. It is interesting to note a clear difference between the water-based and land-and-water-based regions in that the former focuses on health, hygiene, vegetable growing and chicken raising, as well as aquaculture, while the latter focuses on actions to protect forests and support fish conservation. Between land-based and land-and-water-based regions, it is interesting that the former focuses on home gardens and dry season rice cultivation; the latter focuses on building roads.

Key themes	Land-based	Water-based	Land-and-water-based
1. Health and sanitation	Clean houses and toilets, sufficient ponds and wells for consumption	Access to safe water with reliable supply station, improved toilets, better health and hygiene practices, nutrition for children	Better and clean housing conditions (leading to better health), all households having toilets and good sanitation
2. Education and vocational training	Primary schools to upper secondary schools nearby, vocational skills, employment for fresh graduates	Secondary schools nearby, better education and vocational skills	Kindergarten, primary schools to upper secondary schools nearby, Buddhist school
3. People and employment	Secondary school graduates employed	Villagers becoming teachers	Small enterprise for crafts (<i>bangki</i> , <i>chheang</i> and hammocks) made from hyacinth
4. Building infrastructure	Road, bridge, school, electricity for households, rehabilitated streams	Decent houses, houses for the resource-poor and elderly, good roads and culverts, community hall in pagoda	Decent houses, road, electricity, dams and canals connected to rice fields, center for agriculture training, bridge, culverts, electricity
5. Governance and institutions	Public fishing access	Public fishing, legality of fishing gear suitable for household needs, social land concession for residential purposes and rice farming (Chnok Tru),* better access to round-the-clock health center services, access to public transport for medical emergency aid and for children to attend schools	Public fishing with gear suitable to local needs, improved living conditions and reduced dependency on fishing through dry season rice cultivation on land allocated by the state, <i>chamkar</i> land for secondary crops, better access to round-the-clock health center services
6. Fish production	Small-scale aquaculture, elimination of illegal fishing, rehabilitated community fish sanctuary	<i>Trei chdoar</i> raising, fish processor (floating houses)	<i>Trei chdoar</i> raising, increased numbers of fish, rehabilitated reservoir
7. Access to markets	Marketplace with good hygiene, markets for agricultural products, advanced rice dryer warehouse for better rice prices	Permanent marketplace (a building in Chnok Tru), floating market in community, export of fish products	Fish processing for better prices, a marketplace in village, increased fish value at the market through processing
8. Conservation	Increased conservation fish ponds, maintained conservation reservoir and lake (Tonle Om in Bakou)	Fish conservation, protected forest, lakes, ecotourism	Fish conservation, protected forest, crackdown on illegal fishing, only one technical agency to manage fishery sector
9. Rice production	Rice productivity, short-term rice, low-cost agricultural inputs, good rice seeds, irrigation canals rehabilitated, improved soil fertility, dry season rice	Sufficient food	Sufficient food to eat, community rice mill
10. Livelihoods diversification	Improved quality of life by animal raising and home gardening, community fish sanctuary transformed into ecotourism area (Rohal Suong)	Vegetable growing, livestock raising (chickens, ducks, pigs), capital for animal raising	Improved living conditions through secondary crops and floating gardens, technical skills to raise animals
11. Waste management	Clean houses, toilets	Better waste management (plastic, toilets)	n/a
12. Water management	n/a	Rehabilitated community ponds for water consumption	Increased access to safe water supplies and reduced water-borne diseases, sufficient village ponds with water for consumption
13. Other social issues (rights, gender, domestic violence)	Elimination of domestic violence, reduction of migration	Gender equality, family happiness without violence	Attendance at community development activities and meetings, elimination of domestic violence

* Location is only mentioned when that element of the vision in this table is unique to that place.

Table 10. Summary of visions by agro-ecological region.

COMPARISON ACROSS ADMINISTRATIVE REGIONS

Promoting local governance is very important, especially at the local level of the commune council. Overall, there are many good matches between community visions and commune investment plans. The following discussion focuses on the linkages and potential linkages between various actors for the betterment of communities in each province.

Pursat Province

As expressed by the community visions of improving infrastructure, such as building roads and having a hospital, bridges, schools and electricity, the vision of building a road is already in line with the commune investment plan in 2014. However, other visions such as a hospital and electricity may take some time, as these may involve agencies and resources beyond the commune level. Another aspect of infrastructural development is services related to primary and secondary schools.

Another aspect that requires support and planning from higher government agencies is conservation of fishery resources in the lakes by putting in place committees or strengthening the management. While local people are initiating this in the midst of diminishing resources, it is important to engage higher technical agencies such as the Fisheries Administration and Ministry of Environment. This may provide strong encouragement for the communities to continue their work on the ground. It is promising that the commune investment plan incorporates action toward effective fish and forest management despite not being clear about what it really covers.

Kampong Thom and Kampong Chhnang provinces

Aquaculture is seen as an alternative to public fishing, especially in the wake of depletion of fishery resources. Some people are already raising fish using traditional methods. To increase the number of people in aquaculture would require technical support. While the commune chief seems to be enthusiastic about this initiative, the seed fund for implementing

it may need to be drawn from the commune development fund and the technical support from relevant agencies such as the Fisheries Administration. A similar need for collaboration is apparent for dry season rice, with a shorter-season variety needed so that local people can cultivate more cycles annually. In this case, to identify a resilient rice variety with a shorter season requires the support of higher technical agencies or institutions such as the Department of Agriculture.



I am very happy because of this opportunity to participate in this process, and I am proud that the 12 elements of the visions generated by the communities are all very important; moreover, they match very well with the commune development plans.

– **Mr. Leng Sok, 50,**
Phat Sanday commune
councilor



The local communities are taking up the challenge to work on their own initiatives. But even with high commitment from the individual communities, there should be support and collaboration. In areas where there are community fisheries, they need to mobilize resources and support for conservation and flooded forest protection; hence, relevant agencies would include the Fisheries Administration, the Ministry of Environment and police to ensure that they have roles in the action plan implementation.

It is interesting to see that local communities worked closely with local leaders and the commune council to make a request to the state's social land concession program for local people to build a permanent settlement, especially in Chnok Tru. However, the idea was not approved. A better form of discussion with all stakeholders could be helpful to find relevant options. (See Appendix 2.)

Siem Reap Province

Increasing rice productivity and improving farm-gate prices appear to be a common vision of all villages, even though each village focuses on somewhat different elements of the vision. Some are focused on improving the irrigation system, while others target a short-term rice variety and the use of agricultural inputs. These ideas are also in line with the commune investment plan.

Similar to Kampong Thom, Siem Reap communities want to raise fish. They envision that if all households start to raise fish, household incomes will be increased and illegal fishing will be reduced. However, the realization of the vision will require fish ponds, fish seed and experts who can share knowledge on aquaculture. The community will be enthusiastic about aquaculture as soon as they have experts to work with them. In this case, the role of relevant agencies such as the Fisheries Administration and other research institutes will be important.

Poor sanitation among floating villages leads to buildup of solid waste, including plastic, which creates an added burden to the poor health of floating communities. Reflecting on this moved some communities to envision better waste management, including provisions for solid waste and improved toilets. This can be worked on in collaboration with relevant NGOs and the Ministry of Environment. In addition, regarding health, nutrition and safe water drinking practices, the role of teachers who can influence schoolchildren is one of the key approaches recognized by the community.

Visions of having roads, schools, a hospital and electricity all fall within the economic dimension of the commune investment plan on infrastructure development, including the rehabilitation of canals for irrigation. There are also plans in the commune investment plan to dig more fish conservation ponds and provide crop seeds for farmers. (See Appendix 3.)

Battambang Province

Battambang Province has village health volunteers in place. These can be the bridge that links communities to existing medical practitioners or health center staff that can deal with health issues that individuals or the whole community are concerned about. Governance issues include the participation of stakeholders with the community; links to the correct institutions, government or otherwise, will need to be pursued. In particular, the commune council is important, as it is the nearest for institutional support and could link communities to other development agencies more formally. So far, there is no indication of a commune investment plan with reference to this issue; the focus of the commune investment plan includes decent houses and managing important fish conservation areas and flooded forest, as well as support for animal raising at family level (chickens, ducks and so on).

CONCLUSIONS AND LESSONS LEARNED

Overall, the CLCP went well. The research team was able to prompt the articulation of many community visions and plans in each target village. All of the issues the communities brought up were discussed and integrated into their visions or action plans. Likewise, the profile of each village was brought up. The time allotted was a bit short for the process. The communities had to discuss visions and develop action plans in immediate succession; they were not given very much time between the vision formulation and action plan development. Also, the identification of stakeholders and how they could work together to achieve a common purpose was not extensively discussed. We were able to get sufficient information on NGOs, but less on the role of government agencies and the private sector, which are equally important actors in community development. In general, we were able to produce outputs as per the objectives. Reflection on the process has led to a number of lessons that can inform subsequent CLCP stages. These are also important for improving our future engagement with the communities.

Reflecting on the processes that we have gone through will enable better understanding of the limitations, problems and successes of the CLCP approach. Specific aspects of this process that the study team has identified as sites for learning include limitations of SALT visits, confidence of community participants, confidence of the community facilitators and areas for improvement, participation of commune councilors, limited geographic and ethnic representation in the process, prioritizing of visions, measuring progress, NGO partners' interactions, community dependency, and record keeping.

First of all, the team talked to only a few households during the SALT visits because of the short amount of time spent in the field. This limitation inevitably restricts understanding among outsiders of the situation in the village. However, the SALT visits did reveal the diversity of experiences and gave us a better understanding of the context.

It is clear that the participants in the process of community visioning were confident to share their thoughts. They also knew clearly who is responsible for implementing the community action plan. During the self-assessment, two questions were asked for each scoring: (1) What is the status now? (2) What have you already done to get to this place? This opened up conversation about self-reliance and helped the community to see what they were already able to do. The community members started to think about their own potential to implement activities due to this process, which was a shift in their thinking.

It was widely recognized that the community facilitators prepared effective processes and plans after the training in Siem Reap. They were able to implement each step within the time given. They showed willingness to help each other in the facilitation process. Moreover, they called each other during the fieldwork in order to learn from each other. In the field, they assigned clear roles and prepared the required documents and materials. In some villages, the community conducted a rehearsal after preparation. Refresher trainings were conducted to give additional support to community facilitators by HURREDO and TCO teams. In Chnok Tru, the ADIC team went 3 days ahead of the fieldwork to provide coaching on all steps for the community facilitators. In general, both the NGO partners and the community facilitators took a lot of ownership of their own learning.

It was helpful that in some places there were already commune councilors, especially in Santey and Kampong Kor Leu, who participated in and supported the process and shared their thoughts. This was especially useful in examining how the community visions related to aspects of the commune investment plan. In Tramper, the commune chief came to visit the whole team from time to time.

There was a need to improve the transition from one session or step to another among community facilitators. This is understandable, as this was their first experience in facilitation of such processes and content. They needed more practice to build confidence, and the coaching process should be more systematic to allow sufficient space for them to absorb the information. There were also some technical problems regarding the use of tools. For example, in a place like Tramper, community members had difficulty understanding how to do proper self-assessment and what steps are required to create an action plan.

Another limitation of the process was that it covered a minority of people in the community. For example, in Prey Chas, those who lived far away on water could not join the meeting due to time and cost. And in Chnok Tru, where there are several different ethnic groups, we were only able to include one group.

Some visions were too small. We need to encourage communities to make their visions bigger. We need to challenge them to think about a state of being that they would like to see in the future. Some people were not dreaming, but only suggesting activities or small changes. Moreover, the community members debated which visions to prioritize so that some actions could be taken within a 3-month period. For example, Prey Chas debated fish conservation and recognition of fish (*trei chdoar*) raising but left the fish conservation aside because of the feeling that 3 months is too short to get that done; the Neang Sav men's group changed their minds on prioritizing their vision in the same way. However, it is important to take into account the importance of a vision rather than think only of achieving the plan in a short period. Communities should be encouraged to see that while the vision is big, they can take simple steps that contribute to achieving it in the long term.

From the review of the report of each village by NGO partners, it is clear that there are differences, similarities and various means to measure progress for each proposed action plan. For example, some used the description "record keeping"; some used a numerical measure (e.g. 30 households have grown vegetables); and others used "attendance list."

This situation needs further explanation, as this is the basis by which progress is reviewed by the communities themselves.

More interaction is necessary between the NGOs and community facilitators to back up and support the process of action plan implementation. They will need to clarify information in the process of writing up the outputs. For instance, in Raing Til, the NGO Ponleu Kumar invited both community facilitators to its office in Pursat and reflected on the overall process during documentation and report writing for their assigned community; in Chnok Tru, ADIC called several times to clarify information and also visited the community again to increase its understanding of the situation. At the same time, we provided support and stimulated questions on how action plans would be implemented. To know whether this worked, we need to find out more from other partners.

Dependency is strong, especially in the floating villages. We need to be prepared for this. Asking the question "who benefits?" is a good way to stimulate the community to take ownership. Many communities have examples of self-reliance but they have forgotten about them or are unaware of their capacity. This is an opportunity to remind them that they can be self-reliant.

Finally, it is extremely important that the record keepers go into as much detail as possible. For example, when someone says in the after-action review that "the participants were active," we can ask them to elaborate further: Who was active? Why? What were they saying? This will reveal more depth and can open up fruitful discussion within the facilitation team.

NOTES

- ¹ Community Life Competence Process Learning Event, Process Report, 19–23 August 2013, Siem Reap, Cambodia.
- ² The scoping study was conducted by WorldFish in April–May 2013 together with NGOs, government officials and academic representatives. The study involved talking to villagers and community representatives in many provinces around Tonle Sap Lake.
- ³ The report on Baseline Monitoring and Action Planning by the ADIC (2012) and an article from this research project appeared in CDRI's Cambodia Development Review and report on post-fishery reform (2014) the Cambodian Case.
- ⁴ Refers to state land given to resource-poor households per the government Sub-Decree on Social Land Concession.

APPENDIX 1: PARTICIPANTS IN COMMUNITY VISIONING IN EACH VILLAGE

No.	Village	Separated participants			Mixed participants		
		Male	Female	Total	Male	Female	Total
1	Santey	-	-	-	15	7	22
2	Rohal Suong	-	-	-	23	12	35
3	Kampong Kor Leu	11	21	33	-	-	-
4	Bakou	-	-	-	7	7	14
5	Peam Ta-Uor	10	33	43			
6	Raing Til	-	-	-	10	22	32
7	Chnok Tru	-	-	-	4	15	19
	Yok Kunthor cluster	-	-	-	8	0	8
	Koh Mano cluster (Muslim community)	-	-	-	3	9	12
8	Anlong Ta-Uor	-	-	-	9	19	28
9	Muk Wat	7	17	24	-	-	-
10	Prey Chas	16	24	40	-	-	-
11	Tramper	8	8	16	-	-	-
12	Neang Sav	8	14	22	-	-	-

Note: Some groups separated and then mixed. In Chnok Tru, day 1 was for group 1, day 2 was for group 2, and days 3 and 4 combined the two groups. In Chnok Tru, two other cluster communities—Yok Kunthor and Koh Mano (Muslim community)—were separately organized but the findings from these two clusters were incorporated into Chnok Tru.

APPENDIX 2: COMPARISON OF COMMUNITY VISIONS AND ACTION PLANS WITH COMMUNE INVESTMENT PLANS IN KAMPONG THOM AND KAMPONG CHHNANG PROVINCES

Visions	Chnok Tru	Phat Sanday	Kampong Kor (does not yet have commune investment plan)
Fish conservation and natural resource management			
Conservation and natural resource management (fish, flooded forest, lakes, etc.)	L2 - CIP		
Fisheries and regulations			
Permitted use of gear suitable to location for those who live next to conservation areas (<i>lob lok</i> 250 m)		FL1, ML2	
Family-scale aquaculture (legal trot fish) and family fish ponds		FL2, ML3, M (√)	
Food security, livelihoods and household strategies			
Aquaculture	L3 - CIP		
Technical skills to raise animals in each household		FL1, ML2 - CIP	
Family-scale aquaculture			L3
Livestock raising (chicken, ducks, pigs)	L2 - CIP		
Social land concession for rice farms	L1 - CIP		
Sufficient food to eat, improved living conditions and reduced dependency on fishing through dry season rice cultivation on land allocated by the state, through secondary crops and floating gardens		FL1, FL3, ML2, ML3	
Increased fish value at the market through processing		FL3, ML2, F (√)	
High rice yield and price, increased dry season rice to improve livelihoods			L4
Quality dry season rice seeds with high yield			L2 (√)
Low price of fuel and fertilizer for the rice fields			L1
Market with good hygiene for agricultural products and advanced rice dryer warehouse for better rice prices			L1
Household, water and sanitation			
Social land concession for residential land with fixed houses	L1 - CIP		
Reliable water supply station	L3 - CIP		
Increased access to safe water supplies and reduced water-borne diseases		FL2, ML3 - CIP	
Sufficient ponds and wells for consumption			L3
All households having clean houses with clean environment and toilets			L3
Better health and hygiene practices	L3 (√) - CIP	FL2, ML3	
Public health access			
24-hour health services at health center	L3		
Access to equal health services (health center) and staff regularly present at health post		FL2, ML2	
Waste management (plastic, toilets)	L2 - CIP		
All households having toilets and improved sanitation		FL1, ML3 - CIP	

Women and children			
Gender equality and family happiness without violence	L3 - CIP		
Education and vocational training			
Increased level of education (junior and senior), secondary school and Buddhist school, kindergarten		FL1, ML2	
Enhanced community education (secondary school) and vocational training			L2
Better road that connects to school	L4 - CIP		
Other infrastructure (road, market, pagoda)			
Granite road for 3 km, hospital, bridge, school and electricity for all households			L1
Canals for irrigating rice fields (water gate) and managing the water effectively			L1
Road along commune boundary	L1 - CIP		
Permanent market building	L1 - CIP		
Social issues and community development			
People attending community development activities and meetings		FL4, ML3 - CIP	

Note: CIP = commune investment plan.

APPENDIX 3: COMPARISON OF COMMUNITY VISIONS AND ACTION PLANS WITH COMMUNE INVESTMENT PLAN IN SIEM REAP PROVINCE

Visions	Peam Ta-Uor	Muk Wat	Santey
Fish conservation and natural resource management			
Conservation and natural resource management (fish, flooded forest, lakes, etc.)	L3 - CIP		
Ecotourists visiting conservation areas	L2 - CIP		
Conservation of the lake (Tonle Om), growing trees (spawning areas), conservation of new village fish ponds and natural resources			L1 (✓) - CIP
Livelihood and household strategies			
Aquaculture	L4 (✓) - CIP		L2 - CIP
Vegetable growing	L3 (✓) - CIP		
All households having <i>chankar</i> land for secondary crops		L3	
Plenty of fish like in the past		L1	
Family-scale aquaculture (legal trot fish) and family fish ponds		L3 - CIP	
Sufficient food to eat, improved living conditions and reduced dependency on fishing through dry season rice cultivation on land allocated by the state, through secondary crops and floating gardens		L3 (✓) - CIP	
Improved quality of life through skills in animal husbandry (cows, pigs, chickens and secondary crops)			L3 - CIP
Market with good hygiene for agricultural products, and advanced rice dryer warehouse for better rice prices			L2
Household, water and sanitation			
Decent houses	L2 - CIP		
Reliable water supply station	L2		
Better and clean housing conditions (leading to better health)		L3	
All households having toilets and improved sanitation		L2 - CIP	
Sufficient village ponds with water		L1	
All households having clean houses with clean environment and toilets			L3 (✓) - CIP
Public health access			
A health center in the community	L1		
Access to equal health services (health center) and staff regularly present at health post		L1 (✓) - CIP	
Education and vocational training			
Better education and vocational skill training	L3		L1 - CIP
Kindergarten in the village		L1	
Other infrastructure (road, market, pagoda)			
Good road and culverts along the roads during dry season	L3 - CIP		
Granite and concrete road for 3 km, electricity, and culverts		L1 (✓) - CIP	
Granite road for 3 km, hospital, bridge, school and electricity for all households			L2 - CIP
Only one technical agency to manage fishery sector		L1	
Canals for irrigating rice fields (water gate) and managing the water effectively			L2 - CIP

Note: CIP = commune investment plan.



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Approximately 500 million people in Africa, Asia and the Pacific depend on aquatic agricultural systems for their livelihoods; 138 million of these people live in poverty. Occurring along the world's floodplains, deltas and coasts, these systems provide multiple opportunities for growing food and generating income. However, factors like population growth, environmental degradation and climate change are affecting these systems, threatening the livelihoods and well-being of millions of people.

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Contact Details:
CGIAR Research Program on Aquatic Agricultural Systems
Jalan Batu Maung, Batu Maung, 11960 Bayan Lepas, Penang, MALAYSIA
www.aas@cgiar.org

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