

Organizing Resource Generation and Nutritional Support (ORGANS)

## 2<sup>nd</sup> Phase Final Report

April 2008 – June 2009



July 2009



# Executive summary

Floating gardening is an indigenous, eco-friendly agro-practice in the floodplains of southern Bangladesh. Here, on floating platforms, built with aquatic plants like water hyacinth, vegetables crops are grown and seedlings are raised in rainy season, and in the following winter the platform residue is used to prepare beds for vegetable production.

The ORGANS project (April 2007-June 2009) of IUCN Bangladesh and CARE Bangladesh promoted floating and subsequent winter cultivation in the haor region of Bangladesh. The project was designed in response to the agreement between CARE USA'S ARMU and IUCN Asia in the late 2006. The project was planned and implemented as a significant part of the SHOUHARDO in every sense to contribute to the latter's goal of nutritional security and strengthening of socio-economic conditions. This report chiefly summarizes the achievements of the 2<sup>nd</sup> phase of the project (April 2008-June 2009).

Over 27 months' of ORGANS, a total of 900 households of 86 villages in four districts practiced and enjoyed the benefits of newly introduced agro-technique and are now ready to take the initiative forward. In this project, the strength of community participation has once again been demonstrated through modeling, validation and replication. Acceptance of the technology by the community-based structures (VDC) accelerated the implementation process. As a vital part of the project approach, 50-75% of women participation was maintained in all project activities. On the whole, in the 2<sup>nd</sup> phase, despite fewer crop cycles in monsoon 2008 and drought in winter of 2009, the agro-technique contributed to improve beneficiaries' nutritional, income generation, and land-use capacity scenarios.

It has been estimated that from an average floating platform (8 m<sup>2</sup>) and associated winter garden (32 m<sup>2</sup>) with total material cost of 600 Tk (input), 4000-5000 Tk (output) worth of vegetables could be produced in seven months. Nutritional needs of the target families were significantly met by floating and winter gardening by means of improved vegetables supply: in monsoon 2008, 54% vegetable produce were consumed, 33% were gifted and 13% were sold by the beneficiaries, whereas, in winter, the proportions were 53%, 9% and 38%, respectively.

This vegetable production in fact covered 50% of household's daily vegetable purchase in monsoon and was 3.5 times of daily household purchase in winter. Therefore, a significant sum of daily expenditure was also saved by the target families. In monsoon 2008, the production was about 6% of average daily HH income (Tk 130) and in the following winter, it was about 17% (Tk 160). An internal evaluation estimated that the household income of ORGANS beneficiaries has risen to 3281 Tk/month from SHOUHARDO haor regional baseline 2532 Tk/month, and the number of income sources has increased from 1.25 to 1.75 indicating significant impacts of ORGANS initiative on SHOUHARDO beneficiaries.

In the 2<sup>nd</sup> phase, 73% ORGANS beneficiaries had no or < 5 decimal of cultivable land by their homesteads. In 2008, floating platforms offered 5-20% more arable space to 52% beneficiaries in monsoon. Moreover, for 16% beneficiaries (without any personal arable land) floating gardens were in fact 100% space available in monsoon. Floating gardening, therefore, enhanced land-use opportunity for poor, marginal, landless people created significant social impact.

The ORGANS, although started in the fourth year of SHOUHARDO, has been implemented as an integral agricultural intervention of the whole programme through excellent support from the PNGOs. This report puts forward some ideas on promotion of floating gardening by considering issues like new ecosystems/areas, demand-supply chain, community-led initiative, disaster risk reduction, and also drawing attention to one-house-ecosystem concept and pertinent policy interventions.

Over the last four years, IUCN and CARE have been working together in the haor and coastal regions of Bangladesh addressing livelihoods, natural resource management, biodiversity conservation, and nutritional concerns of vulnerable communities. The ideas outlined in this report have the potential to take CARE-IUCN partnership much further as pioneering examples of cooperation in Asia.

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## Abbreviations

ASD	Assistance for Slum Dwellers
CAP	Community Action Plan
CBHQ	CARE Bangladesh Headquarters
CNRS	Central for Natural Resource Studies
DAE	Department of Agriculture Extension
HH	Household
IDEA	Institute of Development Affairs
IUCN	International Union for Conservation of Nature
KRO	Kishorganj Regional Office for the haor region
ORA	Organization for Rural Advancement
ORGANS	Organizing Resource Generation and Nutritional Support
PNGO	Partner Non-governmental Organization (NGO)
POPI	People's Oriented Program Implementation
SHOUHARDO	Strengthening Household Ability to Respond to Development Opportunities
SUS	Sabalambi Unnayan Sangstha
UP	Union Parishad
USS	Unnayan Sahayak Sangstha
VDC	Village Development Committee

# 1 ORGANS: AN OVERVIEW

## 1.1. Background

Floating gardening is a form of hydroponics. It is an age-old practice of cultivation in the floodplains of southern Bangladesh. In this agro-technique, aquatic plants, like water hyacinth, are used to build a reasonable sized floating platform on which vegetables and other crops are cultivated, and seedlings are raised in rainy season. Later on, the platform residue is used to prepare beds for winter vegetable gardens. Therefore, this system is an environment-friendly means to utilize natural resources of the wetlands to grow vegetables and other crops almost all-the-year-round.

IUCN Bangladesh facilitated the expansion of this technique in the southern parts of the country under the Sustainable Environment Management Programme (SEMP) <sup>1</sup> from 1999-2005. With this experience, IUCN Bangladesh collaborated with CARE Bangladesh to introduce this indigenous agricultural knowledge in the haor region in Habiganj during 2005-2006 under the SHOUHARDO Program as the Baira Project <sup>2</sup>.

After successful completion of the Baira Project, CARE Bangladesh and IUCN Bangladesh recognized the potential of this agro-practice and scoped out its expansion in the whole haor region under the SHOUHARDO. Accordingly, the present project 'Organizing Resource Generation and Nutritional Support (ORGANS)' started in April 2007 and ended in June 2009. This project had also been a timely response to the MoU signed between CARE USA's ARMU and IUCN in Asia in the late 2006, and was developed and had been implemented following a collaborative modality. This report

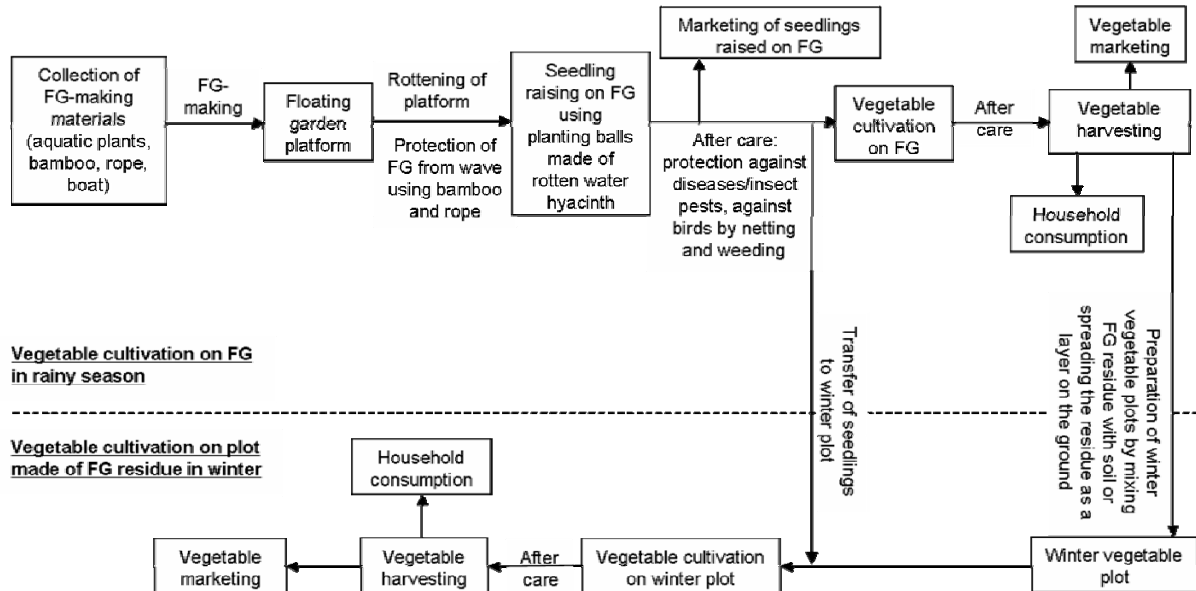


Figure 1. Flow-chart showing floating and winter vegetable gardening traditionally practiced in Bangladesh (FG, floating garden) <sup>2</sup>.

<sup>1</sup> IUCN Bangladesh 2005. *Baira: the Floating Gardens for Sustainable Livelihood*. IUCN Bangladesh Country Office, Dhaka, Bangladesh, viii + pp. 61.

<sup>2</sup> Irfanullah, H.Md., Adrika, A., Ghani, A., Khan, Z.A. and Rashid, Md.A. 2008. Introduction of floating gardening in the north-eastern wetlands of Bangladesh for nutritional security and sustainable livelihood. *Renewable Agriculture and Food Systems* 23(2): 89-96.

captures the important interventions and outcomes achieved under the 2<sup>nd</sup> phase of the project (April 2008-June 2009).

The ORGANS aimed to contribute to the food security of the vulnerable population through such farming initiative. Using the available natural resources, the project would facilitate community mobilization and capacity building to promote sustainable homestead-based year-round agriculture practices as an alternative livelihood option in 100 villages of all the four districts of SHOUHARDO haor region over 27 months.

The 12-month long 1<sup>st</sup> phase of the ORGANS Project was successfully completed in March 2008<sup>3</sup>. In this phase, a good number of beneficiaries of 23 haor villages in Kishorganj and Sunamganj became aware of a novel farming system like floating gardening. Their knowledge level was improved through 25 formal training sessions, numerous on-site training sessions, a cross-visit and four exposure-visits. A total of 174 people managed to overcome the devastation of floods of 2007 and practiced floating gardening and associated winter gardening for the first time through intense motivation and will-power. Gender was addressed in every project activity including the beneficiary selection, baira cultivation, winter gardening and capacity building programmes (30-75% women participation).



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<sup>3</sup> IUCN Bangladesh 2008. Final Report (April 2007-March 2008): Organizing Resource Generation and Nutritional Support (ORGANS). IUCN Bangladesh Country Office, Dhaka Bangladesh, pp. 53. (unpublished)

Due to a late start for flood, only one crop-cycle was managed on the platforms instead of three. Most of the vegetables (amaranth, red amaranth and kolmi) grown on the floating gardens were consumed (87% of the produce) by the target families along with given away to their relatives and neighbours. A modest number of seedlings (bottle gourd, sweet gourd and bean) raised on these platforms were sold, but most were transplanted (94-99%) in available space in the homesteads and winter gardens. Winter gardening was also delayed due to delay in floating gardening. A total of 174 gardens were prepared with platform residues. A good amount of vegetables (amaranth, red amaranth and kolmi) was produced most of which was consumed (83%) or given away (5%) by the beneficiaries, and about 12% were sold.

The project, therefore, fulfilled the main objectives of contributing to nutritional security of the beneficiaries (covering 30-40% of HH vegetables requirement in monsoon) and improving their HH income (vegetables production was equivalent maximum 35% of daily HH income). Floating platform provided apparently landless communities with parcels of land (added 20-40% to existing agricultural land of 27% of beneficiaries), thus increasing their land-use capacity in monsoon.

In the first year, ORGANS has demonstrated effective collaboration between two esteemed organizations – CARE and IUCN – at the country level. At the programmatic level, the project has been implemented as a part of the main SHOUHARDO Program. Continuous support from Kishorganj Regional Office, CARE Bangladesh Headquarters and Partner NGOs was effectively capitalized throughout the project.

The 15-month-long 2<sup>nd</sup> phase of ORGANS started in April 2008. Table 1 summarizes the project targets and achievements. The following sections of this chapter give an overview of the project goal, specific objectives, major activities for 2<sup>nd</sup> phase and approaches taken to implemented the project.

**Table 1. Summary of the ORGANS project (April 2007 – June 2009).**

	Phase I (completed)	Phase II (on-going)	Total Target	Total Achievement
Timeframe	April 07 - March 08	April 08 - June 09	April 07 - June 09	April 07 - June 09
Village	23	63	100	86
Union	10	33	40	43
Upazila	5	19	20	21
District	Kishorganj, Sunamganj	Kishorganj, Sunamganj, Habiganj, Netrokona	Kishorganj, Sunamganj, Habiganj, Netrokona	Kishorganj, Sunamganj, Habiganj, Netrokona
Households	174 (F, 75%)	726 (F, 71%)	1,000	900 (F, 72%)
Beneficiary	1,200	5,100	7,000	6,300

F = % of female focal point

## 1.2. Goal and specific objectives

The overall goal and specific objectives of the ORGANS Project as recorded in the project document are given below. The 2<sup>nd</sup> phase interventions also contributed in achieving these goal and objectives.

### 1.2.1. Goal

Support to nutritional security of 1,000 (7,000 people) targeted households of SHOUHARDO haor region by promoting year round eco-friendly household-based vegetable gardening practices through natural resource management by involving poorer community.

### 1.2.2. Specific Objectives

- To organize and establish a community based 1,000 floating gardens through utilizing locally available natural resources in households adjacent to 100 villages of SHOUHARDO haor region
- To organize and establish a community based 1,000 (target HH to be selected from occupational groups) winter gardens through utilizing locally available natural resources in household premises of the same 100 villages of SHOUHARDO haor region
- To support nutritional deficiencies of poor household members and enhance their family income through the increasing of vegetable production, consumption and selling
- To enhance their capacity with the involvement of Village Development Committee (VDC) members in the year round vegetable gardening initiatives
- To encourage conveniently selling of vegetable produces of community gardeners to neighbors and in local markets
- To raise awareness and capacity of the concerned PNGO and CARE staff for replicating the vegetable gardening techniques in other operational areas of SHOUHARDO Program

### 1.3. Major activities for April 2008-June 2009

The major activities undertaken in the 2<sup>nd</sup> phase of ORGANS are listed below as per the project proposal.

1. Site selection
2. Beneficiary selection and baseline establishment
3. Motivation and capacity building of local community including VDCs
4. Exposure-visits organized with in the project sites for beneficiaries and VDCs
5. Facilitation of floating gardening
6. Facilitation of winter gardening
7. Input support to beneficiaries for floating and winter gardening
8. Follow-up activities in the ORGANS villages of 2007 and 2008
9. Selling of floating garden and winter garden products

10. Organizing nutritional awareness session
11. Capacity building of PNGO staff on baira cultivation
12. Incorporation of baira cultivation in VDCs' action plans
13. Knowledge sharing or review workshops
14. Engaging government service-providers and other stakeholders (Field days)
15. Development of information, education and communication material
16. Project monitoring and evaluation

#### 1.4. Guiding philosophy

ORGANS project has been designed keeping several guiding principles in mind as listed below.

1. Community participation
2. Organizing eco-friendly resource generation
3. Nutrition consideration
4. Livelihood consideration
5. Selling enhancement
6. Increase in the land-use capacity
7. Gender consideration
8. Linking with SHOUHARDO Program

The remaining chapters of this report highlights the achievements of ORGANS over 15-months (April 2008-June 2009) focusing on prevailing situation in the project areas, knowledge transfer, putting training into practice, nutritional security, income generation, land-use capacity enhancement, and mainstreaming of ORGANS into SHOUHARDO. Future avenues of collaboration between IUCN and CARE in Bangladesh have also been outlined in the last chapter.



## 2 INTERVENTION AREAS AND THE PEOPLE

With an aim to introduce floating gardening as a tool for improving nutritional security and socio-economic condition of the rural poor, the ORGANS has been implemented in four districts, namely Habiganj, Kishoreganj, Sunamganj and Netrokona, of the SHOUHARDO haor region. In the 2<sup>nd</sup> phase, a total of 102 villages of 19 upazilas and 41 unions were visited for assessing their suitability for floating gardening and subsequent winter gardening. Finally, a total of 726 households (71% with women as focal points) in 63 villages were selected after rigorous consultation with KRO and concerned PNGOs. Over the whole project tenure (April 2007-June 2009), a total of 86 villages were covered by ORGANS with 900 households. The targets of villages and households envisaged in the project plans could not be achieved due to unavailability of enough suitable villages in the SHOUHARDO working areas.

### 2.1. Prevailing scenario of the project site

To have a glimpse of pre-project scenario regarding socio-economic status, available resources, and status of vegetable consumption, cultivation and marketing, a baseline survey was conducted on all the selected households of four districts. The following sections of this chapter summarize the findings of the survey.

In the 2<sup>nd</sup> phase of the project, the total number of family members of 726 HH was 4159 with an average of 6 person /HH (children 45%, and 39% of the total children were <5 years) indicating high birth rate, and large number of growing children and lactating and pregnant mothers requiring nutritional support throughout the year.



### 2.1.1. Land occupancy

With a few exceptions, all ORGANS beneficiaries were landless people occupying small area of khas land to live in and to do vegetable gardening. For examples, a total of 45% HH had 1-5 decimal of homestead area, while 35% had 6-10 decimal of land. Regarding arable land, 16% beneficiaries had no land by their homestead at all; 9% had less than 1 decimal/HH, 57% had 1-5 decimal/HH, 16% had 6-10 decimal/HH while the rest had more than 11 decimal of land per HH.

### 2.1.2. Occupations, income and migration

In terms of occupation, rainy season was more diverse with fishing, agriculture, day-labourer and business (85%), than winter which was more skewed towards agriculture and day-labourer (70%). On average, earning persons per HH was 1.3 (range 1-3 persons/HH). The average per capita income per day was 22 Tk in monsoon (range 5-60 Tk/capita) and 26 Tk in winter (range 5-75 Tk/capita). The data show very low per capita income by the beneficiaries even compared with average country standard (average per capita annual income US\$ 520 in 2006–2007). There is a tendency of migration of the earning persons both in winter (11%) and rainy seasons (16%) in the project areas indicating less availability of work in monsoon than winter.

### 2.1.3. Vegetable consumption, cultivation and selling

In four haor districts, project beneficiaries were found to consume, cultivate, buy and sell quite a wide variety of vegetables: a total of 31 varieties – 20 in monsoon and 24 in winter (Table 2.1). Beneficiaries of these districts sold 11 varieties in monsoon and 22 in winter. In monsoon, number of varieties sold was less compared with those were cultivated and bought.

**Table 2.1. List of vegetables consumed, cultivated, and/or sold by ORGANS beneficiaries in four districts.**

English name	Bangla name	Scientific name	Status *	
			Monsoon	Winter
1. Ladies finger	Dherosh	<i>Abelmoschus esculentus</i>		
2. Amaranth	Daata shak	<i>Amaranthus tricolor</i>	C	P
3. Red Amaranth	Lal shak	<i>Amaranthus tricolor</i>	P	P
4. Jackfruit (seed)	Kanthhal bichi	<i>Artocarpus heterophyllus</i>		
5. Ceylon spinach	Pui shak	<i>Basella alba</i>	CPS	
6. Wax gourd	Chaal kumra	<i>Benincasa hispida</i>	CS	
7. Cauliflower	Phulkopi	<i>Brassica capitata var. botrytis</i>		S
8. Cabbage	Bandhakopi	<i>Brassica capitata var. oleracea</i>		C
9. Papaya	Penpe	<i>Carica papaya</i>	C	
10. Arum	Kochu	<i>Colocasia esculenta</i>		
11. Arum	Mukhi kochu	<i>Colocasia esculenta</i>	P	P
12. Jute (young leaves)	Paat shak	<i>Corchorus capsularis</i>		
13. Cucumber	Shasha	<i>Cucumis sativus</i>		S
14. Pumpkin	Mishti kumra	<i>Cucurbita maxima</i>		
15. Carrot	Gajor	<i>Daucus carota</i>		
16. Aquatic spinach	Kolmi shak	<i>Ipomoea aquatica</i>	CS	
17. Sweet potato	Mishti aloo	<i>Ipomoea batatas</i>		
18. Hyacinth bean	Shim	<i>Lablab purpurea</i>		CPS
19. Bottle gourd	Lau, Kodu	<i>Lagenaria siceraria</i>		S
20. Ridged luffa	Jhinga	<i>Luffa acutangula</i>		
21. Sponge/ smooth	Dhundal	<i>Luffa cylindrical</i>		

English name	Bangla name	Scientific name	Status *	
			Monsoon	Winter
luffa				
22. Tomato	Tometo	<i>Lycopersicon esculentum</i>		CS
23. Bitter gourd	Korola	<i>Momordica charantea</i>		
24. Teasle gourd	Kakrol	<i>Momordica dioica</i>		
25. Radish	Mula	<i>Raphanus sativus</i>		CP
26. Chilli	Morich	<i>Solanum frutescens</i>		
27. Eggplant, Brinjal	Begoon	<i>Solanum melongena</i>		
28. Potato	Aloo	<i>Solanum tuberosum</i>	PS	CS
29. Snake gourd	Chichinga	<i>Trichosanthes cucumerina</i> var. <i>anguina</i>	PS	
30. Pointed gourd	Potol	<i>Trichosanthes dioica</i>		
31. Cowpea	Barboti	<i>Vigna sinensis</i>		

\* C= Top 5 vegetables cultivated by the beneficiaries, P= Top 5 vegetables purchased from market, S= Top 5 vegetables sold by the beneficiaries

The average value of vegetables purchased by the respondent beneficiaries from the market was 14 Tk/HH/day in monsoon and 7 Tk/HH/day in winter. (Such purchase could be as high as 80 Tk/HH/day in monsoon; and 60 Tk/HH/day in winter). On the other hand, the market value of the self-produce consumption was ranged from 0-35 Tk/HH/day in monsoon and 0-50 Tk/HH/day in winter. On average, the self-produced vegetable consumption was 42% higher in winter than in monsoon. This explains the lower purchase of vegetables in winter. A very small amount of vegetables was also sold by the beneficiaries in rainy season, but the average value of vegetables sold was estimated 14 Tk/HH/day in winter.

In the 2<sup>nd</sup> phase, the ORGANS entered into the SHOUHARDO villages more than three years after the inception of the programme. SHOUHARDO's campaigns in favour of winter gardening in haor indeed had some significant impacts on the winter data obtained during the present surveys conducted in the second half of 2008. But the vegetable production situation in monsoon was not encouraging enough apparently due to an absence of promoting alternative agriculture options for haor in the rainy season.

#### 2.1.4. Problems associated with vegetable gardening and selling of produce

Land scarcity and heavy rainfall were identified as the main two barriers for vegetable cultivation in monsoon in the project areas. On the contrary, land scarcity, unavailability of quality seed, unavailability of irrigation water and damage by biological agents like insects, diseases, etc. hampered vegetable cultivation in winter. In most of the cases, the vegetables were grown in very small amount consumed totally by the concerned households, thus not feasible to sell in the market. Nonetheless, 18% beneficiaries identified poor communication to the marketplace as a barrier for selling produces.

#### 2.1.5. Illness

The data analyses suggested that children of the targeted households suffered from three major nutrition related disorders/diseases: around 51% suffered from weakness, 20% from anemia and remaining 13% from stomach upset.

### 3 CAPACITY AND KNOWLEDGE IMPROVEMENT

Floating gardening was a completely new technique to the target haor communities. Therefore, proper awareness and suitable approach to enhance their knowledge and capacity was one of the foremost activities of ORGANS. In doing so, three basic methods were followed. Class-room training sessions were conducted for one or a couple of villages in monsoon and just before winter, accompanied by practical demonstration, to make the beneficiaries understand the techniques of floating gardening and subsequent winter gardening. The second mode of capacity enhancement was on-site training where individual beneficiary was assisted to perform baira-making, seed sowing and after-care by the project staff. The third and final mode was to take representative beneficiaries from each village to other villages to give them exposure to best practices. In addition to these, staff members of all PNGO were trained or briefed on floating gardening on different occasions.

#### 3.1. Conveying a novel agro-technique to haor community

A total of 45 training sessions were arranged to train 813 beneficiaries (76% female) on floating gardening during monsoon and 44 training sessions were conducted for 719 beneficiaries (71% female) on subsequent winter gardening using baira residue. VDC members, representatives from UP, DAE personnel, school teachers, elite persons, and



**Floating garden training session in Derai, Sunamganj.**

PNGO and CARE staff, of the locality were invited as guests. A total of 471 and 359 guests were participated in monsoon and winter training sessions respectively. Presence of these people in training sessions enhanced the acceptance of technology by the community.

Therefore, a good number of individuals of 63 villages became aware of the newly introduced techniques. This gave them sufficient knowledge and confidence to practice this farming technique in 2008. In 2008-09, the project left 726 trained self-reliant people to transfer the technology to more people in the coming future.

At least an on-site training was provided on floating platform construction, seed sowing on floating platform, guti preparation and winter bed preparation by the project team in each village. This activity made the learning process efficient and helped the community to grab the technology easily.



**An on-site training session on seed sowing in Sunamganj where Mr. Kasem, Member of Mohonpur Union Parishad participated.**

### 3.2. Sharing of problems and solutions among communities

As the third mode of capacity building, 10 exposure visits were organized during monsoon and winter of 2008-09 where 138 beneficiaries (about 45% female) from 63 villages participated. These visits were found to be very useful for sharing knowledge among different villages practicing baira cultivation or winter gardening for the first time. The visitors exchanged their views and ideas on floating gardening with the people of visited sites. In winter, visitors particularly shared their experience on winter gardening, especially how to tackle extreme drought in early 2009. For example, in Habiganj, visitors from Sunamganj learned about mulching process, rain-water harvesting and water storage management techniques. These visits, on the one hand, uplifted beneficiaries' confidence level, and on the other hand, acted as incentives for best practitioners being a representative of the village. On returning from the visits, the

visitors shared their experience with their families, neighbors and fellow baira farmers, and conveyed the experience, knowledge and skill of one area to their native areas.



**Beneficiaries from Netrokona observing floating gardens at Maguri village of Tarail upazila, Kishoreganj.**

### 3.3. Capacity enhancement of PNGOs

The initiative also organized training and briefing sessions on floating gardening for PNGO staffs to spread the farming technology to more communities and improve the sustainability of the program. Project staff participated in senior staff and cluster meetings of concern PNGOs where Field Coordinator (FC), Technical Officer (TO), Cluster Supervisor (CS), Asset Transfer Facilitator (ATF), Food Distributor (FD) and Community Facilitator (CF) were present. A good number of PNGO staff have been acquainted with the techniques through these sessions, and are expected that they will include this technology in their future activity and spread it in more villages in their working areas.

In addition, Community Health Volunteers (CHV) of all the selected villages were sensitized to talk about importance of floating gardening in their regular weekly/monthly nutritional sessions for mothers and children. Both these activities immensely helped mainstreaming the ORGANS into the SHOUHARDO.

## 4 TRAINING IN PRACTICE

The capacity enhancement and transfer of knowledge under ORGANS initiative has equipped beneficiaries to cultivating vegetables and obtaining nutritional support throughout the year recognizing floating and winter gardens as production units. This chapter briefly highlights how lessons gathered from training were put into practice by the beneficiaries in 2008-2009.

### 4.1. Production units in monsoon

A total of 741 baira platforms were prepared by 726 beneficiaries in 63 villages in monsoon 2008. Seven of them, however, were destroyed by wave-action in the haor. In monsoon 2009, the water came relatively late in the haor. By June 2009, as ORGANS exited, 18 floating platforms were prepared in Sunamganj and Habiganj by 15 beneficiaries.

Most of the beneficiaries made floating platforms (on average 16 ft long, 6 ft wide and 4 ft high (2 ft when rotten)) in adjacent canals and ditches. The platforms took about four weeks to get ready for cultivation. During floating platform preparation, the women were helped by their husbands and/or sons. The platform preparation time varied from 0.25 to 2.5 man days (1 man day = 8 hrs). The average time taken to prepare a platform was 1 man days. In most of the cases this period was spread over several days as most of the people built platforms in their leisure time.



**A beneficiary of Goarai village at Dowarabazar upazilla of Sunamganj making his floating platform with assistance from his neighbour.**

The ORGANS supported its beneficiaries by supplying six types of seed, namely Spinach, amaranth, kankon (gima kolmi), bottle gourd, sweet gourd and bean in monsoon 2008. The germination rate on the platform was good, for example, amaranth and kolmi seeds took 3-4 days to germinate, whereas Indian spinach took 8-10 days. In 2008, no unusual level flood occurred in the haor areas, so only 22% platforms were protected from usual haor waves by erecting bamboos or binding with banana stalk.

The ball-like seed germination structures made from rotten water hyacinth were used to help in rapid seed germination for bottle gourd, sweet gourd and bean. Gourd and bean seeds took around 4 days to germinate. These seedlings were kept on floating platforms for 10-30 days (on average 13 days) before transplanting on the soil. About 99 % of these seedlings were transplanted by the beneficiaries in their own gardens and the remaining were sold or given away to neighbours or relatives.

## 4.2. Production units in winter

A total of 726 beneficiaries who practiced floating gardening also carried out winter gardening in the late 2008. Since most of the beneficiaries were landless people, they made their winter gardens by their homesteads. When flood water receded, the platforms were dismantled and residues were mixed with soil to prepare beds.



**Preparation of demonstration winter plot as a part of training session.**

The average area of winter garden where platform residue was used was 2 decimal/HH. On average, beneficiaries mixed residue in three-fourth of their cultivable land adjacent



to their homesteads. Some beneficiaries, however, leased some parcels of land to cultivate vegetables seeds of which were provided by the project. In winter, the project supplied six types of seed, namely red amaranth, amaranth, okra (ladies finger) brinjal, bati shak and bitter gourd to the beneficiaries.

The project also promoted eco-friendly measures to protect crops from pest infestation in both the seasons. Most of the beneficiaries, therefore, used i) a mixture of neem leaf extract and water or ii) ash to tackle pests. However, on rare occasions, kerosene or Bordeaux mixture was used to address the pest problems. Nonetheless, net was distributed to all the beneficiaries for protecting their floating and winter gardens particularly from poultry attack.

## 5 NUTRITIONAL SECURITY ENHANCEMENT

The main purpose of the ORGANS was to introduce and promote floating cultivation in selected haor villages as an alternative livelihood option that can ensure year-round vegetable production in the areas and enhance food security of those vulnerable people.

Over 45 days of floating gardening, more than 15% HH produced 500 Tk or more worth of vegetables with a maximum of 1677 Tk/HH. Monsoon production of about 60% HH ranged between 200 and 500 Tk/HH. About 54% of the total vegetables produced were consumed, 33% were gifted to neighbours/relatives and 13% were sold by the beneficiaries. The statistics shows that a good amount of vegetables harvested from floating garden that ensures nutritional security of beneficiaries and their neighbours during monsoon. It has been calculated that the vegetable cultivation over 1.5 months on floating gardens covered 50% of their daily average HH vegetable purchase (14 Tk/HH) in the rainy season as estimated at the beginning of the project (Section 2.1.3). The production could have been much higher if more crop cycles could be performed in the monsoon. But it did not happen due to early recession of water from haors.

In winter, on the other hand, about 60% HH produced 1000-3000 Tk worth of vegetables, 25% HH produced 3001-6000 Tk, 6% HH produced 6001-10000 Tk, and 5% HH produced more than 1000 Tk. Some beneficiaries leased arable land from others to grow winter vegetables using the seeds supplied by the project. This explains much higher vegetable production by some beneficiaries. About 53% of the produce was consumed by the households, 38% were sold and remaining 9% were distributed to relatives and neighbours. In four months (January-April 2009) of winter gardening, the beneficiaries on



**A baira farmer showing her winter garden produce, Sunamganj, April 2009.**

average produced 25 Tk worth of vegetables per HH per day, almost 3.5 times of winter daily vegetable purchased before the onset of the project (Section 2.1.3).

A survey was carried out in the first week of May 2009 to assess the potential vegetable production till June 2009. The data analysis suggested that if the standing crops are nurtured properly and no natural calamities (torrential rain, extreme high temperature, etc.) hinder crop production, 35% beneficiaries may produce 1001-1500 Tk worth of vegetables in seven weeks. Moreover, 26% of beneficiaries may enjoy production of 500-1000 Tk and 27% <500 Tk over the same period. The lion portion of this production would come from cultivating brinjal, bitter gourd, amaranth, red amaranth and okra.

#### **Bachchu Mia (76): Defying the old age**

Bachchu Mia of Chalbon village (Solukabad, Sunamganj) is a landless farmer having 3 decimal of homestead area. Owing to landlessness he was initially not included as an ORGANS beneficiary by the VDC. But his eagerness and commitment made VDC bound to include him in the initiative.

Bachchu Mia used to produce sweet potato seedlings on floating platforms in a small amount earlier, but did not have enough knowledge on the technique. After receiving training, he made five platforms – the highest number of platforms made by any individual beneficiary – in a pond of a local mosque. The total area of his floating gardens was 35.64 m<sup>2</sup> which was 30% of his homestead area. He is one of the top 5% beneficiaries who produced 775 Tk or more worth of vegetables. Although he could not manage enough crop-cycles, thus earned handsome amount of money, he did not get disappointed, rather more confident. Till early May 2009, the total production from Bachchu Mia's winter garden was almost 4000 Tk of which he consumed more than 2000 Tk worth of vegetables and sold almost all the remaining. He has also preserved the seeds of amaranth, red amaranth, okra, bottle gourd and Indian spinach for the next year.

Bachchu Mia is now looking forward to monsoon 2009 and made four platforms in May-June.

Therefore, the initiative has managed to increase the food availability at the project sites, mainly at the HH level, and contributed to the food security of the target beneficiary's all-year-round. It is, however, difficult to determine any nutritional impacts by questionnaire survey and correlate it with increased in-take of vegetables. Nonetheless, the beneficiaries mentioned the positive effects of their improved nutrition on loss of man days, illness (e.g. diarrhea), epidemic ailment and energy. They felt themselves much better than they used to be (Annex 2).

## 6 CONTRIBUTION TO HOUSEHOLD INCOME

In spite of water stagnation in monsoon, floating farming can provide haor-dwellers with some space on water to grow vegetables. Most of the beneficiary households of ORGANS project area depended upon day-labour and fishing. In 2008, those people were engaged in floating cultivation as an additional source of income along with nutritional supply (Chapter 5). The vegetable production thus indirectly helped the target population by partially covering their household expenses for food.

From the experience of six weeks of floating gardening, it has been estimated that the monsoon production was 6% of the average daily monsoon HH income (130 Tk) of the beneficiaries and about 50% of average daily monsoon HH vegetable purchased (14 Tk). In winter, the vegetable production was 17% of the average daily winter HH income (160 Tk) of the ORGANS beneficiaries. Therefore, a significant sum of daily expenditure was saved by the target families.

### **Sopna's dream – floats with floating gardening**

Sopna Rani Sarker, wife of Devendra Sarker, of Elampur village (Nabigonj, Habiganj) is an exceptional beneficiary receiving training on floating gardening. This family of five hardly had any arable land on their own and were passing their days in extreme misery. But floating gardening showed a glimpse of hope for this poor family.

Sopna practiced floating gardening for the first time in 2008, and raised good number of bottle gourd and pumpkin seedlings on the floating platforms during the monsoon. After the recession of water she sowed the seedlings and harvested early fruits. Her total production was 6,600 Tk of which she sold a total of 3,700 Tk. And she used the income meticulously. She bought bamboo for making fish traps and canes for making baskets. She sold the baskets locally and earned good sum of money. The newly built fish traps were used by her fisherman husband, thus saved their expense for buying such traps in monsoon 2009.

They have indeed discovered floating gardening as a rewarding option.



Before the project, only 50% of the beneficiaries used to sell winter vegetables produced by them. But in winter 2009, all the beneficiaries sold their some portion of their vegetables allowing them some extra cash in hand.

An internal evaluation was conducted in the mid July 2009 to evaluate the impacts of ORGANS compare with non-ORGANS beneficiaries (Annex 2). The study estimated that the HH income – a critical indicator of progress with SHOUHARDO haor regional baseline 2532 Tk/month – has risen to 3281 Tk/month for the ORGANS beneficiaries, and the number of income sources has increased from 1.25 to 1.75. As a proxy of income, household expenditure has also been significantly improved as households now have increased food purchasing power – from 1,850 Tk /month to 2,079 Tk. These are

particularly important indicators as they directly impact on the food security status of households.

An input-output analysis may also shed some light on the economic benefits received from floating and winter gardening. On average the surface area of a floating garden was 8 m<sup>2</sup> and the average area for winter garden 32 m<sup>2</sup>. It has been estimated that the total material cost as input was 600 Tk in the monsoon and winter of the 2<sup>nd</sup> phase. The output in terms of vegetables and seeding production was 4000-5000 Tk over 7 months of monsoon and winter. These data collected by the project team during project implementation match with that of the internal evaluation conducted in July 2009 (Annex 2). It has also been estimated that the decomposed residue of floating platform used as organic matter in winter has on average market value of 1000 Tk (Annex 2). If this value is considered, the income would be much more.

## 7 LAND-USE CAPACITY IMPROVEMENT

The vulnerable people of the project area are constrained by not having sufficient cropping space in terms of access to lands basically in two ways. Firstly, many of the beneficiaries were landless, and secondly, even if they had some arable land adjacent to their homesteads, most of it went under water for more than six months a year. Under such condition the floating platforms can provide the farming communities additional space through using stagnant water by their homesteads, which would otherwise remain unutilized in the monsoon.

### Transforming the village called Maguri

Maguri of Tarail, Kishoreganj is an excellent village to promote floating gardening given its location on the edge of haor and availability of water hyacinth. But at the onset of monsoon 2008, the villagers of Maguri were not much interested in trying a new agro-technique like floating cultivation. The ORGANS personnel had rigorous discussions with the VDC and villagers sharing with them the benefits floating farming may bring in to them. These attempts convinced a few villagers who wanted to give it a try.

The project targeted to train and to provide support to 10 beneficiaries of this village like all other villages of ORGANS. But at the end of monsoon, a total of 25 farmers practiced floating gardening by adopting this technology from the trained baira farmers. Now the people of this village very much realize that floating gardening can really change their lives by giving opportunity to grow quality vegetables almost throughout the year. Ratan Mia, the Organizing Secretary of Maguri VDC said that the villagers were targeting up to 100 floating gardens in Maguri in 2009. Floating garden has indeed changed their perception of life.

Through the ORGANS initiative, the floating platforms created by the beneficiaries for vegetables production offered them increased land-use capacity without much cost. For 16% beneficiaries floating platforms were the 100% cultivable land available in monsoon since they did not have any arable land at all. Moreover, in monsoon 2008, floating gardens provided <5% increase in arable land for 20% beneficiaries, 5-10% increase for 42% beneficiaries and 11-20% increase for about 10% ORGANS beneficiaries. For poor, marginal, landless people of the project site enhanced landownership, although for monsoon only, created significant social impact.



Some beneficiaries also leased arable land from others to grow winter vegetables using the floating platform residue and the seeds supplied by the project. In this way the impact on land-use capacity went beyond the monsoon.

## 8 ORGANS IN SHOUHARDO

The ORGANS has introduced an eco-friendly natural resource-based floating gardening as an alternative livelihood option in the SHOUHARDO haor region to improve the socio-economic status and nutritional uptake throughout the year. The project also envisaged that it will be directly linked with the existing organizational arrangements, facilities, and activities of the SHOUHARDO – considering a programmatic approach. Therefore, the target VDCs shall be oriented towards the cultivation techniques and liaison with the selected PNGOs shall be maintained as enhancement measures of vegetable gardening initiatives. Accordingly, starting from village and beneficiary selection, KRO, PNGOs and VDCs were involved in every steps of the project implementation. But, since the project entered into SHOUHARDO in the fourth year of the latter's implementation, it was a challenge to mainstream ORGANS activity and making it acceptable not only to the beneficiaries, but also to PNGOs, local government bodies and government service providers. Therefore, specific activities were targeted to the latter three stakeholders.

At the community level VDCs were motivated to include floating gardening in their Community Action Plans (CAPs). Realizing its huge potential in haor areas, VDCs of 50 villages incorporated in their CAPs till June 2009. VDCs of the remaining 13 villages included floating gardening in their resolution books and assured to give a due reflection in their CAPs once these are reviewed in a few months time. This campaign influenced other non-ORGANS villages as well, for example, Nasnee village of Derai, Sunamganj. People of this village agreed to make floating garden in this monsoon and this decision was recorded in their VDC resolution book. They also agreed to incorporate floating cultivation in village's CAP whenever it is reviewed next. These demonstrate high acceptance of this agro-technique by the haor community.



SHOUHARDO coordination meetings at upazila and district levels are a regular event to involve local administration and government bodies in the programme implementation. ORGANS team also incessantly attended district and upazila level coordination meetings and Union Parishad meetings to illustrate the significance of floating gardening as an alternative approach for nutritional security and poverty alleviation. Progress of the project has always been appreciated by the stakeholders and they provided necessary guidance as needed. Project team also regularly attended hub meetings of SHOUHARDO participated by CARE and PNGO representatives.

The ORGANS has been implemented in the SHOUHARDO villages with close association with the concerned PNGOs. Community Agriculture and Health Volunteers of PNGOs have been strongly involved in the project activities from facilitation to data collection. Special briefing sessions were also organized for different PNGOs in their monthly meetings to brief about the agro-technique and the project so that staff working in non-ORGANS area can explore the possibility of introducing floating gardening in their working areas.

The project team involved government service providers during different project activities like training sessions. Furthermore, eight field days involving officials of DAE, including Agriculture Extension Officers, were organized in all the districts to show project activities on the ground. DAE officials very much appreciated the initiative and encouraged the motivated beneficiaries to continue practicing the technology in coming days.

Through above-discussed activities, ORGANS found itself in the mainstream of the SHOUHARDO. Needless to say, continuous, cordial cooperation from KRO and CBHQ was duly capitalized in this venture. And very supportive and enthusiastic outlook of PNGOs, namely CNRS, SUS, USS, IDEA, POPI, ASD and ORA was a vital element in this endeavour.

#### **Floating gardening helps youngsters' education**

Rina Akter is a typical housewife in Borocoat village in Mohonganj Upazila of Netrakona. She has two sons and a daughter. Her daughter (11) is studying in class five and boy (9) in class three.

Rina prepared her floating and winter gardens efficiently and earned good sum by selling vegetables in 2008-2009. This helped her to meet up her family's vegetable demands to a greater extent.

Moreover, she bought 350Tk worth of books for her daughter and now paying 250 Tk as her daughter's and son's tuition fees every month – a superb example of women empowerment.





## 9 WAY FORWARD

The ORGANS has successfully promoted organic agriculture through environment-friendly system in the haor region. It has encouraged an alternative livelihoods option in relation to the seasonality, thus reduced food insecurity in the project areas. In addition, the landless participants accepted floating farming owing to increasing opportunities for utilizing space on the water. From project implementation point of view, the programmatic approach indeed maximized the impact compared with project approach. For example, integration of floating garden activities with agricultural initiative of SHOUHARDO and involving seven PNGOs facilitated comprehensive change.

Once again the strength of community participation through modeling, validation and replication has been demonstrated. Community to Community approach for knowledge sharing through exposure visits was found effective. Acceptance of the technology by the community-based structure (VDC) accelerated implementation process, especially by inclusion in community action plans (CAPs). The demand-supply-demand chain has not been truly established during the project tenure, but has started to be activated in the area.

In addition to the community, this introduced technology attracted agriculture extension service provider and create ample scope in the wetland. A couple of other NGOs in Sunamganj have taken up floating gardening in their agendas. During the last Caretaker Government tenure, floating gardening was demonstrated in Sunamganj with local administration as a tool to address poverty.

Finally, the ORGANS has been a good, successful example of collaboration between CARE and IUCN at the country level. These have rightly been articulated in the Final Workshop held on 29 June 2009 (Annex 1).



## New ideas for future collaborations

Given the existing potentials of promoting floating gardening and subsequent winter gardening in the wetlands of Bangladesh, IUCN Bangladesh proposes a number of avenues that could be explored to take CARE-IUCN collaboration forward. It has been emphasized in the Final Workshop of ORGANS (Annex 1) that the collaboration between IUCN and CARE should not be confined to floating gardening only. Therefore, some ideas are also listed in the following sections.

### 9.1. Up-scaling in wetlands

The first idea is quite straight forward: extension of floating gardening in other new areas of Bangladesh with similar conditions where CARE is working or planning to work in near future. Both haors and floodplains are good bio-ecological zones in this connection as long as the selection criteria of a site are fulfilled. In this case, some modification in this technique might be necessary to accommodate local need as we did while introducing floating gardening in the haor region.

While doing so, some advocacy issues could also be considered. For example, floating gardening is an option which addresses issue from nutritional security to disaster risk reduction. At the moment DAE's involvement is very limited in terms of promotion of floating gardening despite its environment-friendly nature. DAE in SHOUHARDO areas could be encouraged to uptake this agro-technique in their annual programmes through proper advocacy. Similarly, pourasava and district administration can also be sensitized to uptake the technique in urban areas as a means of water hyacinth management, compost production for government nurseries/plantation, and employment opportunity to poor slum-dwellers.

### 9.2. Exploring new ecosystems

Charlands of Jamuna River and coastal areas of Bangladesh are very vulnerable in terms of nutritional security and appropriately covered by SHOUHARDO interventions. Although floating gardening is practiced in certain areas of greater Barisal, it has not been exercised in other coastal districts. Floating gardening may also help in adding organic matter to the soil through associated winter gardening, especially in low productive, relatively new charlands. Field testing is, however, necessary before planning large scale promotion in these two areas (charland and coastal area).

### 9.3. Through community initiative

In the haor region, up scaling of floating garden should now concentrate on community-based initiative. SHOUHARDO has successfully promoted community-based organizations (VDC, Village Development Committee) in its villages, which can organize floating garden-based production system for their respective villages. In this third idea, this approach will

- a. Consider demand-supply-demand of the area and will produce seedlings accordingly to sell to the local market (direct selling) or to supply seedlings to CARE's interventions like homestead vegetable gardens and field crops (buy-back system);
- b. Introduce a benefit-sharing mechanism of all participants, with an option to generate fund for local development; and

- c. Promote common property management concept (right to utilize 'common' water surface in monsoon).

#### 9.4. Market-oriented approach

Floating garden produces are organic. Increasing demand of organic (vegetables) products may be fostered by linking baira production centers at village level in haor with the super-market chains in Sylhet and Dhaka cities.

#### 9.5. In disaster risk reduction

Flush flood in early April is a big concern in the haor region, especially when climate is becoming very unpredictable. Floating gardens could give farmers an option to raise boro rice seedlings, thus harvesting paddy a few weeks earlier than usual, and avoiding damage from flush flood. Collective effort has to be taken at village level to maximize such benefit. Field testing, however, is needed in haor before recommend this idea on a bigger scale.



#### 9.6. Floating Gardens – attractive enough?

Comprehensive household 'production system' in wetlands could be floating gardening centered. Floating gardens not only provide nutrition security, they also generate some extent of income. Furthermore, it could be used as a vehicle to promote 'Environmental Governance', since it

- Is an environment-friendly technique;
- Considers natural resource management in its core;
- Thrives on people's active participation; and
- Has the potential to engage local CBOs and local government as income generation option.

#### 9.7. Promotion of "One House - One Ecosystem" Concept

In this concept improvement of 'individual' homestead environment is targeted to improve the environment of a 'landscape'. The concept includes biodiversity conservation, water management, sanitation, and homestead vegetable production through eco-friendly fertilizer option under one umbrella.

- Water management (safe drinking water supply, ditch to reserve water for agriculture, rain water harvest system, etc.);
- Health and sanitation;
- Homestead vegetable production to meet household consumption;
- IPM, vermi-compost – as eco-friendly options;
- Plantation of indigenous fruit-bearing, medicinal, and timber-yielding trees on the homestead periphery; and
- Floating gardening, if in wetlands

## 9.8. Making CARE's pro-poor initiatives Climate Change resilient

A good number of projects are being implemented by CARE at the moment often taking holistic approach to improve the poor's condition in vast geographical areas. But such attempts could be under threat due to climate variability that we have been experiencing in recent years. IUCN can assist CARE to consider climate variability and climate change issues in its on-going projects, thus making people more climate change resilient in the years to come.

## 9.9. Intervening at policy level

Convening power is one of the major strengths of IUCN especially at the policy level. On the hand, CARE is unparalleled on the ground. These two strengths could be combined to make some real changes through the future programmes of CARE on livelihoods, disaster management, nutritional security and so on.

IUCN Bangladesh and CARE Bangladesh have been working in Bangladesh since the mid 2005. Over the last four years, Baira Project in Habiganj, Biodiversity-Livelihood Linkage Project in Cox's Bazar and ORGANS in the SHOUHARDO haor region have indeed made this collaboration a stronger one every day. Exploring the ideas outlined above may help to take CARE-IUCN partnership much forward in the near future and highlight as a pioneering example of cooperation in the Asia region.

## Annex 1: Minutes of the Final Workshop, June 2009

**Date:** 29 June 2009, Monday

**Venue:** Hotel Supreme, Sylhet

### Introduction

The ORGANS team organized the Final Workshop (April 2007-June 2009) (Annex 1a) where representatives from USAID, CARE Bangladesh, PNGOs and IUCN Bangladesh were present (Annex 1b). This report summarizes the major discussions and recommendations.

### Major Discussion, Decisions and Recommendations

Mr. Zakir A. Khan welcomed the participants for their participation in the workshop. After three presentations from IUCN, CBHQ Env & GIS and KRO, a dazzling discussion took place on project achievements, scopes of improvement in similar future interventions, and data analyses for upholding project achievements participated by all the participants including Ms. Shahnaz Zakaria from USAID. A good discussion was also taken place on future scopes of collaboration between CARE and IUCN Bangladesh. At the end, Mr. Faheem Y. Khan furnished his closing remarks. Dr. Irfanullah facilitated the program.

A summary of the discussion, action points and recommendations is given in the table below.

No.	Issue	Discussion	Decision / Recommendation
1.	<b>Contribution of ORGANS to SHOUHARDO</b>	<ul style="list-style-type: none"> <li>This contribution should be calculated to understand actual contribution of ORGANS in nutritional security venture of SHOUHARDO.</li> </ul>	<ul style="list-style-type: none"> <li>KRO (RC) will give a date to meet with IUCNB and CBHQ (Wadud/Raquibul to communicate Das) to discuss about it.</li> </ul>
2.	<b>Extension and sustenance of floating gardening (FG) in haor</b>	<p>Feasible areas/villages in terms of</p> <ul style="list-style-type: none"> <li>Physical conditions (deep haor, etc.)</li> <li>Livelihood dimension (use of aquatic plants, etc.)</li> <li>Situation analysis</li> </ul> <p>must be considered before promoting FG in haor.</p>	<ul style="list-style-type: none"> <li>IUCNB volunteered to help any NGOs wanting to promote FG in their working area.</li> <li>Maximize output from small FG beds</li> <li>Visible income is need for sustainability</li> </ul>
3.	<b>Future collaborations</b>	<ul style="list-style-type: none"> <li>IUCN's policy level access and CARE's field strength should be fostered in future partnership.</li> <li>Any new project should be designed based on established baseline, background check / study.</li> <li>Future collaboration should not be limited only floating gardening.</li> </ul>	<ul style="list-style-type: none"> <li>CBHQ will arrange a meeting with IUCN Bangladesh on future collaboration in 1<sup>st</sup> or 2<sup>nd</sup> week of July.</li> </ul> <p>The suggestions as follows.</p> <ul style="list-style-type: none"> <li><b>Floating gardening (FG):</b> the feasibility to extend FG in other areas, namely coastal or char areas of SHOUHARDO.</li> <li>Scope to extend FG in deep haor could be tested.</li> <li>Integration in SHOUHARDO 2<sup>nd</sup> phase.</li> <li>'Community initiative' for baira cultivation in a village considering demand-supply-demand model.</li> <li>Common property management concept – right to use water surface.</li> </ul>

No.	Issue	Discussion	Decision / Recommendation
			<ul style="list-style-type: none"> <li>• <b>Policy:</b> IUCNB has the potential to influence govt. So, IUCNB can help CARE at the policy level through appropriate collaboration.</li> <li>• <b>Local government:</b> IUCN can help environmental governance.</li> <li>• <b>Climate change:</b> Food security under climate change.</li> </ul>
4.	<b>SHOUHARDO 2<sup>nd</sup> Phase</b>		<ul style="list-style-type: none"> <li>• Interested agencies should look for USAID documents on 15 July and August to learn about the scope.</li> </ul>
5.	<b>Final report</b>		<ul style="list-style-type: none"> <li>• Organic recycling process and risk of haor, increased crop diversification, consumption period, breakdown of land use (5-20%), landless people taking land from others for winter gardening (Badebahar), protection (Maguri shifted baira during Resmi), and actual (visible) changes offered by ORGANS needs be highlighted in report.</li> </ul>
6.	<b>Lessons learned</b>	<ul style="list-style-type: none"> <li>• Organic produces through environment-friendly technique</li> <li>• Good example of collaboration between CARE and IUCN</li> <li>• Programming approach maximized the impact compared with project approach</li> <li>• ORGANS agenda mainstreamed in comprehensive plan of community (CAP)</li> <li>• Create scope to integrate ORGANS activity in larger community through 7 PNGOs of Haor region</li> <li>• Modelling the power of community participation: Modeling→ Validation →Replication</li> <li>• Acceptance of technology by the existing community structure (VDC) expedite implementation process</li> <li>• Integration of floating garden initiatives with agricultural activities of SHOUHARDO provides comprehensive change</li> <li>• Alternative livelihoods option in relation to the seasonality reduce food insecurity</li> <li>• New technology attracts agriculture extension services and create ample scope in the wetland</li> <li>• Landless participants owned floating garden culture due to increasing scope of utilizing land in the water</li> <li>• Community to Community approach sets examples of experimental learning (cross learning through exposure visits)</li> <li>• Demand supply demand chain gradually activated</li> </ul>	
7.	<b>Limitations</b>	<ul style="list-style-type: none"> <li>• Early recession of water create uncertainty to cultivate baira in every monsoon.</li> <li>• Less amount of income creates less amount of encouragement.</li> <li>• Limited monitoring due to limited introduction of PM&amp;E.</li> <li>• Limited scope of extension in deep haor sites due to furious wave action.</li> </ul>	

#### Final remarks

- KRO, CBHQ, USAID and PNGOs appreciated the achievements made by the ORGANS over the last 2 years 3 months.
- IUCN thanked CBHQ, KRO and PNGOs for their cordial cooperation during project implementation.

## Annex 1a. Programme

<b>Time</b>	<b>Topics</b>	<b>Facilitation</b>
8:30-8:50	Welcome and Introduction	Zakir A. Khan
8:50-9:00	ORGANS - Background Information	Md. Abdur Rashid
9:00-9:35	ORGANS - An alternative Initiatives of Livelihood and Achievements	Haseeb Md. Irfanullah
9:35-10:00	Sharing of learning experiences in implementation of ORGANS	Sekhar Bhattacharjee
10:00-10:20	<i>Tea Break</i>	
10:20-11:00	Learning sharing by ORGANS Participants	ORGANS Beneficiaries
11:00-11:45	Question and Answer	Open discussion by All participants
11:45-12:30	Views and Reviews by Guest Participants	USAID, CARE Bangladesh and IUCNB Country Representatives
12:30-12:45	Closing Speech - Comments and Recommendations	Faheem Y. Khan
12:45 - 14:00	<i>Lunch</i>	

## **Annex 1b. List of Participants**

### *CARE-SHOUHARDO, Haor Region*

1. Mr. Zakir A. Khan, RC, Kishoreganj (Head of the Haor Region)
2. Mr. S. Sekhar Bhattacharjee, RPM, Kishoreganj
3. Mr. Murad Khan Wahid, TM (L&G), Kishoreganj
4. Mr. Ali Hasan Mahfuz, PO, Derai, Sunamganj
5. Mr. Md. Neamat Hossain, PO, Nabiganj, Habiganj
6. Mr. Md. Mizanur Rahman, PO, Kishoreganj
7. Mr. Md. Mohabbot Ali, PO, Netrakona

### *CARE-SHOUHARDO, CBHQ*

8. Mr. Faheem Y. Khan, TL, SHOUHARDO
9. Mr. H.K. Das, NTC, SHOUHARDO
10. Mr. Md. Abdur Rashid, TC, Env. & GIS Unit
11. Mr. Abdul Ghani, TS, Env. & GIS Unit

### *USAID, Bangladesh*

12. Ms. Shahnaz Zakaria

### *PNGOs*

13. Mr. Pankej Ghosh Doshdin, FC, IDEA, Habiganj
14. Mr. M.A. Mannan, FC, SUS, Netrakona
15. Mr. Mahboob Karim Milton, TO-L&G, ASD, Sunamganj
16. Mr. Md. Sarwar Hosain, FC, CNRS, Sunamganj
17. Mr. Sanowar Hosein Khan Pathan, FC, SUS, Derai
18. Mr. Md. Abdur Kuddus, FC, POPI, Bajitpur
19. Mr. Md. Zahir, FC, ORA, Karimganj
20. Mr. Tarun Kumar Shaha, FC, USS, Habiganj

### *Beneficiaries of ORGANS Project*

21. Mrs. Zayeda Begum, Netrakona
22. Mr. Md. Suzan Mia, Kishoreganj
23. Mr. Bacchu Mia, Biswamberpur, Sunamganj
24. Mrs. Zahanur Bibi, Derai, Sunamganj
25. Mrs. Shohana Islam, Habiganj
26. Mrs. Zahera, Nabiganj

### *IUCN Bangladesh*

27. Mr. Raquibul Amin, PC
28. Dr. Haseeb Md. Irfanullah, SPO and Focal Point, ORGANS
29. Mr. Mohammad Abul Kalam Azad, PM, ORGANS
30. Mr. Md. Ahsanul Wahed, FF, Sunamganj, ORGANS
31. Mr. Lutful Hasan Abru, FF, Derai, ORGANS
32. Mr. M. Abubacker Siddique, FF, Habiganj, ORGANS
33. Mr. Asaduzzaman Khan, FF, Nabiganj, ORGANS
34. Mr. M. Abdul Hannan, FF, Kishoreganj, ORGANS
35. Mr. Mohammad Abdul Jalil, FF, ORGANS, Netrakona
36. Mr. Md. Shahjahan, Admin. Assistant, ORGANS



## Annex 2. A brief synopsis of the outcome of ORGANS, SHOHARDO Collaboration CARE Bangladesh, SHOUHARDO Haor Region <sup>4</sup>

With a view to assess household level production improvement which contributed to economical as well as nutritional value of SHOUHARDO targeted poor and extreme poor participants; an in-depth participatory views exchange discussion session was conducted in three different districts i.e. Kishoreganj Habiganj and Sunamganj under SHOUHARDO haor region. The study was qualitative and intensive in nature than a formal survey. Different community representations such ORGANS Participants, SHOHARDO CHD participants and non participants were ensured in the opinion exchange sessions. **Focus group** and **individual interview** tools were used to explore information. There were on an around 15 participant attended in each focus group discussion. Related information is as follows:

Name of visited place	Location	Total # of Respondent	# of Male	# of Female
Maguri Vilage	Dhamiha, Tarail, Kishoreganj	13	13	0
Tukchandpur Village	Kaliarvanga, Nabiganj, Habiganj	14	0	14
Patharia Village	Kaliarvanga, Nabiganj, Habiganj	13	1	12
Rangarchar Village	Rangarchar, Sunamganj Sadar, Sunamganj	11	0	11
Horinapati Village	Rangarchar, Sunamganj Sadar, Sunamganj	16	4	12

Participants of ORGANS and non-participants expressed their views with an enthusiastic manner and keenness towards this initiative. They expressed that they will continue this initiative either project continue its support or not. They have the required knowledge and interest to provide technical support to other farmers who will adapt the similar initiatives current year. A significant number of control beneficiaries are in the process to take initiative in this year. They are well in practice to keep seed for their own and species are most adaptive for baira (hydroponics plantation). The average area of baira is 8 square meters.

The participants those who are landless PEP (Poor and Extreme Poor) expressed that this initiative gave them room to clutch land in the monsoon. This is a great opportunity to cultivate vegetable in rainy season considering haor context. They are able to utilize vegetable minimum 9 months and earn money on an average Tk 3000 to 3500 from the sell proceed of production in one baira and land in winter. They don't have to take any extra efforts for making organic matter to cultivate vegetable in winter season. Typically they use decomposed residue of baira as Organic Matter (Market value is on an average Tk1000) in winter vegetable cultivation which enhances production in winter. Baira participants could earn Tk 3000 to 3500 after having consumption vegetable from minimum 16 square meters land. It is relatively difficult to measure nutritional impact through conducting interactive FGD, however what they expressed on the effect of nutrition are on the area of loss of man days, illness, epidemic ailment and energy. They hardly faced incidence of diarrhea and loss of man days and felt them selves much better than previous.

The below table indicates an average monetize value of benefit from one baira cultivation in one season.

Total Production both in Baira and winter (Tk)	Consumption (Tk)	Sell proceed (Tk)	Distribute to neighbor and relatives	From Seed (Tk)	From Decomposed residue (OM)
7400-8750	2500-3000	3000-3500	800-1000	100-150	1000-1100

They contributed the earning money for maintaining livelihood in the area of children's education, treatment, food, clothing and maintenance of houses.

<sup>4</sup> This report, provided by KRO on 27 July 2009, is included here without modifications.

**Overall outcome/impact at HHs as well as community level:**

- Scope of production at PEP HHs level is increased in monsoon
- Land holding capacity of landless is being unfold
- Alternative livelihood option is being created for the PEP which enable them to cope with up for the diversification of income earning option
- Organic recycle process is introduced which leads the entire community towards enabling sound environment and cost effectiveness
- Nutritional uptake is increased at PEP HHs level
- HHs average amount of income<sup>5</sup> (ranging from Tk 3900-Tk 4650) indicates significant progress other than non ORGANS intervene villages
- Significant number of community people showed greater enthusiasm for accepting this new initiative

With findings from different locations, this study/assessment had no intention to arrive at a general conclusion on outcome/impact of ORGANS project under SHOUHARDO haor region. The following points are made with this note of caution that these general points are applicable only to those communities where this assessment took place and not beyond that.

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<sup>5</sup> The HH income is another critical indicator of progress where the Regional baseline was Tk 2,532/month which has risen to Tk 3281/month; and the number of income sources has increased from 1.25 to 1.75. As a proxy of income, HHs expenditure also been significantly improve while hhs have been able to increase their food purchasing power from Tk 1,850/month (baseline) to Tk 2079. These are particularly important indicators as they directly impact on the food security status of HHs.