

## AWF NEPAL – Field report visit October 2011

Dhamili Kuwa (Rainas Tar), Bhalayakharka, Chakratirtha (district of Lamjung) –  
Khoplang VDC, Mirkhot, Gaikhur (Luintel) (district of Gorkha)

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AwF Nepal volunteer

### Background:

After a professional experience in seafood processing (6 years) and later on a degree in rural development, I was willing to develop technical knowledge in aquaculture, and particularly sustainable aquaculture practices.

Looking for an internship in tropical aquaculture, my internet research gave me AwF as a possible option, confirmed after contacting Dave Conley (current executive director of AwF) and Ram C. Bhujel (current Team Leader of AwF-Nepal program).

According to my expectations, Dave recommended 2 projects in course: in Hawaii or in Nepal.

After reading information on the projects, I chose Nepal for 3 main reasons:

- The project itself is based on women empowerment for the development of rural areas through small scale aquaculture, of very high interest to me as a rural development initiative (how does it work, how is such an initiative implemented in the field, what are the real benefits to local population, how is it funded, etc.)

- Its geographical proximity to Asian countries where aquaculture field is intensively developing. Therefore before the start of my experience in Nepal, I went to Bangkok in order to meet Ram Bhujel and learn about sex reversal tilapia technique, where AIT (Asian Institute of Technology) is pioneer.

And after my stay in Nepal, I went to India, in order to learn more about aquaculture. I stayed in a black tiger farm and visited different sectors such as hatcheries, vannamei farm, feedmills, etc.

- Experience Nepali rural life.

### Project situation in Nepal:



## **Objectives:**

- Get estimation of project profitability per farmer
- Learn small-scale fish farming and management
- Learn about the project coordination/structure
- Understand project development limitations
- Bring technical information when possible

## **Minutes of the report focused on:**

### Fish farming enthusiasm:

Basically 2 situations appear:

- In general, most farmers (80%?) are satisfied and willing to increase their production capacity. Will do in the next year or are limited in means/space/water resource/financial investment, etc. but intention is there.
- Some farmers are disappointed by the results after 1<sup>st</sup> year experiment (mostly due to lack of water), the minor part.

### Women empowerment:

In new groups formed, less attention is paid to women empowerment; mostly men are involved in the fish farming activity (Mr Kishore Panta (District Agriculture Development Office, DADO) mentions that the requirement to get financial support is to be a member of the Fisher's Association, not necessarily be a female).

In AwF former groups, it appears that some women who have been given the training do not participate anymore; it is actually the husband who is in charge of the full fish farming activities and decisions.

### Fish farming knowledge:

Most groups are well handled (leader highly interested in learning technical knowledge and experienced himself) and production results are improving year to year.

They are now speaking about/doing (by importance, top to down):

- increasing ponds size for commercial objective
- New farming systems such as integrated systems (aquaculture-agriculture)
- New investments (mostly electrical pumps for water supply and nets for fish collection)
- Cooperative creation
- New species introduction

As mentioned in previous reports, they expect more technical support (feed recommendations, solutions against water leakage, predators such as snake and birds, integrated systems)

## **I. Group meeting at Bhalayakharka School of Sailita “Ganodae”**

15/10/2011

Community Group: ***Progressive Women Fishery Group***

### *Assistants:*

15 persons (3 men + 12 women) were present,

Mr Khaga Raj Nakhola (Chair of the Fish Growers Association + President of the Fisheries farmers Group) assisted by Mrs Saraswoti + Mrs Purna,

Mr Prem Prasad Pokhrel (President of PASS Nepal, local NGO), Community Group coordinator,

Mr Nicolas Mazurier (AwF volunteer).

### *Background:*

The group of Bhalayakharka was initially formed by 25 members (mainly women) 6 months ago from AwF initiative; nowadays 23 members are active in the group.

This meeting takes place every month. Monthly 20 NRs. (0.20 Euro) are collected from each member for group organisation. Some farmers have to walk 3 hours to reach the meeting point, proof of their high interest. Members have received 45NRs for every sqm of fish pond realised.

President: Mrs Devaki Aryal

Secretary: Mrs Deuti Ghimire

Last month, the technical manual has been delivered during the technical training of Mr Hare Ram Devkota.

### *Meeting*

Managed by Prem Prasad Pokhrel, initiatives are taken by him.

I observed that women speak together about technical aspects once meeting is over because they don't have the opportunity during the meeting.

- 1- Questionnaire filled up by the farmers.
- 2- Issues discussed
- 3- Fish ponds visit in the local area.

Questionnaire results: cf end of this report.

Main issues (regularly mentioned):

- Nets requirement (to collect fishes in November-December when fingerlings applied in May)
- Ponds extension (current size too small for commercial point of view)
- Start vegetable crop with pond's residual water + manage dike's culture (currently inexistent or not-controlled hence source of snake habitat)
- Solutions to snakes and birds (kerosene and nets). Mr Krishna Raj Pandae mentions it is possible to fish the snakes.. Let's try!
- 130 fishes died; the cause remains unknown; lack of dissolved oxygen (DO) mentioned by Mr Hare Ram Devkota during last visit (I would mention possible contamination from high dose of fermented dung, urine, or other possibly waste thrown to the pond as feed in inappropriate quantity)

- Water supply management (many ponds visited are facing lack of water during the dry season); ponds construction in areas not favourable to fish farming
- The technical training shall take place before the beginning of the project; in this case, it took place 2 months after ponds construction, hence technical errors have been made and results expected are quite low.

*Fish ponds visit:*

a- Neighbourhood of Sailitar School:



Pond recently built. Aprox. 50sqm



Mr. Prem Prasad Pokhrel, left  
Group of women present at the meeting

Main concerns of this farmer are fish mortality unexplained, snake presence, diving beetle (*cybister limbatus*), lack of experience in feeding (ingredients, possible edible plants, quantities).

Planning to plant leguminosae on the pond's dike.

Recommendation: some more dung to be added to the pond in order to favour phytoplankton production.



Lack of water supply – near to drying point



Lack of water supply – Surface layer of dense algae

Main concern of these farmers is the lack of water supply.

The unique solution they see is deep water pumping (estimation of 10-15 meters deep shall be enough).

But then it means electricity consumption apart from pumping equipment purchase, which would reduce if not cancel the profitability of small scale fish culture practice.

b- Neighbourhood of village market:



Pond nearby the river Borang khola

We can see the river in the backyard of the photo; this river doesn't dry during hot season, hence the farmer (Deuti Ghimire, group secretary) and her husband are planning to launch trout farming. She will require technical support. Indeed, she is ready to make a pig keeper above this pond to directly fertilize the pond.

## **II. Field visit at Luintel village (Gorkha district) – Khoplang VDC, Mirkot, Gaikhur.**

16/10/2011

Community Group: ***Luintel Fishery Group***

### ***Assistants:***

Mr Basudev Acharya (Group president),  
Mr Khaga Raj Nakhola (Project Coordinator – Lamjung area),  
5 farmers of the area.

### ***Background:***

25 farmers form this group (approx. 75% women, 25% men). It represents 3 villages: Khoplang VDC (Village development Community), Mirkot, Gaikhur (locally named Luintel).

### **1. Field visit**

The full day has been dedicated to field visits (3 hours walk from Rainas Tar).



a- Mrs Kalpana Khanal farm.

Existing pond of 300sqm (initially 150sqm 2 years ago and increased to 300sqm this year). Cultivating grass carp, common carp Naini (i.e. Mrigal). For him the season starts in may with the introduction of fingerlings, and stops in October end. He is planning to go for sale onto local market. Estimated cost: 2kg local feed every day. Acquired a pump NRs. 10.000, used every day for water supply. Planning to dig new pond.

Pond digging NRs. 50000.

b- Mrs Sarada Luintel farm.

At first pond of 50sqm with the help of AwF financial support, increased to 150sqm last year. (cost dug estimated NRs.25.000). She is saying having sold 10kg fish in 2010, after own consumption.

c- Mr Tilak Luintel farm.

First pond of the village. 50sqm initially, now increased at 200sqm. 600 fingerlings introduced in the pond this year (may, from Bhandara hatchery). Market-oriented production.

d- Mr Rishi Ram Luintel farm.

Started in 2010 the fisheries activity. Pond of 45sqm. Dug cost: 6000NRs. (4 people x 5 days). Introduced common carp, grass carp. Recently sold 7kg of fish (45 pieces, total 2100NRs.) to a neighbour for wedding ceremony.

## 2. Interview

See [Video 8](#) for detailed Luintel Interview farmer on Youtube:

<http://www.youtube.com/watch?v=KdJC44w20HM>

Video translation available on Annex document

### III. Conversation with Mr Kishore Panta, District Officer for Agriculture Development.

From passed experience, DADO is willing to finance only ponds of 200sqm size this year. They comment that 50sqm ponds are not profitable for a family as a commercial activity.

Planning to support financially 10 ponds construction before the end of the year for a total amount of NRs. 50.000.

Elected farmers will be decided after consultation of Mr Pramad Rijal, from Fishery Development Fund.

Mr Panta also mentioned the need of a hatchery in Lamjung District, for which Mr Krishna Raj Pandey (progressive farmer awarded from government for good results, met in field visits) could be supported. Investment estimated at NRs. 400.000.

Objectives of DADO:

- Increase technical knowledge to farmers
- Implement aquaculture in paddy fields
- Solicit AwF for new species introduction
- Coordinate financial support to farmers with AwF

#### **IV. Group Meeting at Rainas Tar (Dhamili Kuwa) School**

See Videos 5+6

A general group meeting takes place every month to discuss about the group's fisheries issues and find common solutions to encountered problems.

A total of 63 farmers divided into 3 groups form this fisheries community.

This day's meeting, usual problem such as water supply (sometimes the village canal is stopped due to various reasons), snake and bird predation.

They are also debating to start recording expenditures and profits, to have a better follow-up of their fisheries activity.

20 farmers (17 women, 3 men) only are present: it is the rice collection season and many people are required in the fields. President, vice-president and secretary, all 3 women, are present.

Questionnaire results: cf end of this report.



One pond reconverted in rice culture. (Lack of Water supply)

#### **V. Meeting with Mr Krishna Raj Pandey, progressive farmer.**

Mr Pandey is very respected as a farmer (last year he obtained Agriculture prize for its good practices and developments). He owns 600 orange trees in Gorkha District and 4 fish ponds apart from its vegetables and rice activities.

He is the first to manage ponds with rice field culture for the production of fingerlings.

He is planning to go for hatchery activity but needs financial support (4 ponds of NRs. 100.000 each).

See Video 7 where he exposes his role in Gorkha District.

## **VI. Group meeting CHAKRATHIRTA**

2011 recently formed group, 15 farmers form part of it, 8 are present at the meeting. At the school, some village farmers are present to assist a 3 months training on agriculture and cattle training. The opportunity is taken to present the aquaculture activity to these farmers. 2 Women explain the easily implemented fish farming activity and its benefits.

See Video 3.

From the 8 farmers present, they give their results on the fish production (started in March, collected early October) sold at the market: Average weight of 4.5kg per farmer has been sold. They have not used the fish for their own consumption.

Questionnaire results: cf end of this report.

## **CONCLUSION**

AwF project has started approx. 3 years ago in this area; the general feeling is that first year farmers are happy to receive funds to dig their pond, it is an experimental year.

Second year results expected are high. Some are satisfied, others are disappointed.

Third year, special attention has to be brought to the technical assistance as we can see lack of interest of some people, ponds getting abandoned, production results very low, etc.

There is not much monitoring cost/revenues, hence any kg sold to the market is seen as a high profit; daily cost in feed and initial investment are not really considered as fish farming represents a secondary activity.

Nevertheless, the satisfaction of a high number of farmers, willing to develop this activity to a market-oriented one is encouraging. It shows that dedicated work pays and it is possible to convert this activity in profitable one.

Water supply is the main issue for small scale fish farming development in the Mid-Hill area of Nepal.

Water availability should be better monitored and studied before the implementation of the project, in order to choose adequate eligible farmers for ponds digging, otherwise profitability and motivation of the farmers will decrease and discourage new comers to start fish farming activity.

The application of plastic layer in the ponds' bottom is a solution; it is not diffused to the farmers whom primarily think about the use of underground water by the way of using electrical pump.

Concerns regarding predation from snakes and birds is high; influence on production is difficult to measure.

But technical knowledge exists (snake traps, K7 films on top of the pond for instance), they are not communicated to farmers.



Technical knowledge is required by most of the farmers. An evidence in this is what vegetable they could feed fishes with. They provide banana leaves which are not much eaten by fishes. It seems “taro” is very well accepted by tilapia and some carps. It can be made easily available in the ponds environment from cultivation as a wild plant. Is crab culture interesting to be studied? This question arises because some farmer believes in pond’s water leaks due to crab galleries dug in pond. Even though this might not be the cause, it proves fresh water crabs to be a possible alternative to fish culture, if market is there.

It seems DADO is getting more and more involved in fisheries activities. This shall continue and for that a direct link AwF-DADO (Mr Kishore Panta) might be established, in order to coordinate subsidies and field policy (small ponds/big ponds; hatchery facilitation through Mr Krishna Raj Pandey support, development of new species or consolidation of existing (fingerlings availability problem if multiplying the species), etc.).

It is very encouraging to see the initiative of small scale aquaculture in the mid-hills region of Nepal giving positive results. The creation of cooperatives to develop the marketing side of it is a good sign. But special attention should be given to the results obtained and technical knowledge in the field, otherwise poor results will lead to stop the activity from some of the participants. It might be the time to consolidate the efforts put in this project by investing in experts time and technical trainings while reducing temporarily the spread of small (50sqm) size ponds and maybe favouring 200sqm size ponds (DADO strategy).

As a volunteer for AwF Nepal, I would like to thank the persons who have made possible my venue to this project, personally Ram C. Bhujel, Team Leader of AwF-Nepal program and Madhav K. Shrestha, prof. at the IAAS who organised the field visits and very nicely integrate me to his family during my stay at Rampur campus, Dave Conley, Executive Director of AwF whom encouraged me to realise this volunteer experience, and all people directly involved in the development of AwF initiatives that I couldn’t meet yet. I wish long life to sustainable aquaculture practices, and will myself professionally get involved in this field in which I see a great future to increase food safety worldwide and reduce malnutrition.

Please feel free to ask me any further detail I might have omitted, I would happy to answer if I can. Contact: [nicolasmazurier@gmail.com](mailto:nicolasmazurier@gmail.com)



Fish caught by cast net in a 90sqm pond after 3 attempts, Chakhratirtha.

AwF NEPAL questionnaire  
Mid-Hills region of Lamjung & Gorkha  
October 2011

39 answers in 3 different group meetings (Sailitar, Dhamili Kuwa, Chakhrathirtha)

**I. QUESTIONS**

**- Project statistics:**

Q1. How many farmers undergoing fish culture in each village? Previous/Newcomers

Q2. Have the pond size been increased by the existing farmers?

Q3. Specific feed preparation or wastes from human/cattle?

Specific feed means: mix of different ingredients such as: rice bran (dhuto), soy oil cake, mustard oil cake (peena), wheat flour, maize flour, soy bean flour (bhatta).

Wastages from human/cattle are: dhal bhat wastes, vegetables wastes, dung and urine, herbs and plants around the pond.

Q4. How many people benefit from the activity (women, children, neighbours, family members)?

Q5. Total expense by pond?

Generally only pond digging cost has been taken into account for the answer.

Q6. Harvesting time: explanation of the results?

Q7. Any profit if production sold?

**Project vision:**

Q8. Are men implicated in the groups of women running the project?

Q9. What is satisfaction degree of current farmers? (Scale from 1 to 5 if this measurement workable in the communities)

Q10. What are the weaknesses according to farmers (lack of means, administrative support, technical knowledge)?

Seen as a request, it is natural to ask for everything..

Q11. What developments farmers think for future?

Q12. Main constraints to the production development?

## **II. RESULTS**

	<b>Sailitar</b>	<b>Dhamili Kuwa (Rainas Tar)</b>	<b>Chakhratirtha</b>
Nb. People	14	17	8
Q1	23	63	14
Q2	N/A (recently launched)	Yes, approx. 40%	N/A (recently launched)
Q3	Specif. feed 70%	Specif. feed 90%	Specific feed 40%
Q4	N/A (recently launched)	Direct: 6.6 beneficiaries / fish pond	Direct: 5.6 beneficiaries / fish pond
Q5	Avg.: 5800 NRs.	Avg.: 8000 NRs	Avg.: 4000 NRs. (50% answers only)
Q6	Avg.: 6 months (technical problems in many ponds)	Avg.: 6,5 months	Avg.: 4 months (recently started)
Q7	N/A (recently launched)	70% sold some qty 25% own consumption 5% N/A	50% sold avg. 300NRs. 30% own consumption 20% N/A
Q8	Yes 100%	Yes 100%	Yes 63% Little 12% N/A 25%
Q9	Data not workable	Avg. satisfaction 3.6	Avg. 4.1
Q10	Technical knowledge, Material requirement, Financial support	Technical knowledge, Material requirement, Financial support	Technical knowledge, Material requirement, Financial support
Q11	- Increase pond size - Go for commercial activity	- Increase fingerlings availability - Increase pond size - Go for commercial activity	- Increase pond size - Educate children
Q12	Water supply, Financial support, Snakes, Birds	Water supply, Snakes, Birds	Water supply, Technical knowledge, Market development

Please note, all data are under influence of the mediator/reformulating questions orally.

As a reference, these are prices I have been given for feed cost:

1kg soy bean: 50NRs; 1kg wheat dust: 25NRs; 1kg mustard oil cake: 25NRs; 1kg maize: 25NRs; 1kg rice bran: 25NRs.

### **Field CONTACTS:**

- Mr Khaga Raj Nakhola (chair of the Fish Growers Association + President of the Fisheries farmers Group). Coordinator of AwF in Lamjung district as a volunteer, he hosts volunteers during their stay and organise the meetings and field visits. English communication difficult. Mobiles: 9846429585, 9806898315.

- Mr Prem Prasad Pokhrel (President of PASS Nepal, local NGO). Coordinator of AwF project in Chakratirtha. Fluent in English. M: 9846301989.

- Mr Kishore Panta (district Officer for Agriculture Development); in charge of fisheries development.

- Mr Dilli Ram Devkota (teacher at Shree Amar Jyoti Higher secondary School, Luintel). Excellent translator and dedicated person. M: 9746012032. Take care of a class of 68 children, from 1<sup>st</sup> to 8<sup>th</sup> grade.. As a reference, monthly salary = 15.000NRs.