

# A Brief Study on Simple Alternative Water Disinfection Program under Nepal Development Marketplace 2008

# 2010



tion Fund

2010

# **SIMPLE ALTERNATIVE WATER DISINFECTION PROGRAM**

## **1. Background**

A proposal on simple alternative water disinfection program was developed by Environmental Camps for Conservation Awareness (ECCA-Nepal) and was awarded under Nepal Development Market Place to carry out it as pilot phase for the period of one year from 1 July, 2008 to 30 June, 2009. This report describes mainly on PO undertaken activities in terms of technology transformation, implementation social mobilization and capacity building which support to achievement the set goal of the project. This report is prepared in this shape after paying a number of visits in various project areas where we carried out very lively interaction meetings with beneficiaries including school going students at their appropriate places.

## **2. Objectives**

1. The main objective of the field visit was to assess their overall progress and evaluate internally from PAF side so that we can assist management to take decision whether release its final payment or not;
2. Final monitoring the outcomes whether it satisfy in line with project objectives or not;
3. Also assess the tangible impact after implementing the project in project sites;

## **3. Methodology**

- Organize interaction meeting with real beneficiaries , executive members of water user committee's, high school s' students, and teachers;
- Monitor on the status of production volume and paid out expenses of beneficiaries for chlorines water;
- Taken views from beneficiaries about changing their chlorinated water drinking habit from ordinary drinking water habit;
- Site verification whether or not installation of WATA devices ( Chlorines produce device) as per proposal and also get information about how it is function at local level; school level; and community level;

#### 4. Visited Schedule

| SN | Date  | Undertaken Jobs (Assigned)  | Night Stop/Remarks |
|----|-------|---|--------------------|
| 1  | 6 Jan | <p><b>Tharpu-Phidim</b> along with NDM PO's Chairperson, it took nearlSy 4.5 hrs on vehicle)</p> <p>Phidim-Ilam (on reserved Mahindra Jeep along with Pos' staff)</p> <p>Discussed with Chairperson and other staff members of Sungave Development Centre and collect proposals of this organization;.</p> <p><b>Ilam-Birtamod</b> (on reserved van along with staff of Sungava Development Centre)</p>   | Birtamod           |
| 2  | 7 Jan | <p><b>Birtamod-Kanepokhari- Letang</b> with Deepak Tamang, Staff of ECCA-Nepal</p> <p>Letang-Jhante-Letang , locates approximately 7 km from main Letang Bazar (Used motorbike with Deepak)</p> <ul style="list-style-type: none"> <li>▪ Visited to Reservoir site and taken some footage;</li> <li>▪ Organized meeting with executive members of Jhante Drinking Water Committee in Jhante;</li> <li>▪ Conducted an interaction meeting with students and teacher in Shree Shichya Sadan High School, in Letang-5, Kheruwa;</li> <li>▪ Returned back to Letang and stayed at hotel;</li> </ul>     | Letang             |
| 3  | 8 Jan | <p>Moved to Fadani , around 7km far towards in the south-western direction from proper Letang Bazar(used motorike with Deepak Tamang).</p> <ul style="list-style-type: none"> <li>▪ Organized an interaction meeting with the members of nature club and teachers;</li> <li>▪ The whole discussion was focused on the following topics: <ul style="list-style-type: none"> <li>○ Existing status;</li> <li>○ Encountered problems while mobilizing society for drinking chlorinated water;</li> <li>○ Public adoptability;</li> <li>○ Future strategy for mass mobilization;</li> </ul> </li> </ul> | Letangs            |

|    |                    |   |            |
|----|--------------------|---|------------|
|    |                    | <ul style="list-style-type: none"> <li>○ Current operational status of mini WATA device;</li> </ul> <p>Returned back to Letang (Used motorbike with Deepak)</p> <p><b>Lunched at Letang</b></p> <p>Moved to Guwaari-9, Letang , locates approximately 3 km in distance from Letang .</p> <ul style="list-style-type: none"> <li>▪ Organized meeting with with the nature club memebbers and school's teachers ;</li> <li>▪ While conducting interaction meeting, we visited on the following topics: <ul style="list-style-type: none"> <li>○ Status of Chlorine water users;</li> <li>○ Planning for carrying out study on chlorines water user through stududents;</li> </ul> </li> <li>▪ Returned to Letang (Used motorbike with Deepak)</li> <li>▪ Prepared report of this visit at hotel;</li> </ul> |            |
| 10 | 9 Jan              | <ul style="list-style-type: none"> <li>▪ Back to Biratnagar on reserved maruti van';</li> <li>▪ Communicating and galthering information about visit ;</li> <li>▪ Preparing for Mirgauliya visit;</li> <li>▪ Stayed at Biratnagar hotel;</li> </ul>   | Biratnagar |
| 12 | 11 Jan<br>[27 Mag] | <p>After completing observation at Mirgauli under NDM program activities.</p> <ul style="list-style-type: none"> <li>▪ Birtnagar- Birtamode (on reserved Maruti Van</li> <li>▪ Taken resered van for a day obseration from Birtamod;</li> <li>▪ Moved to Dhulabari, Mechiganar</li> <li>▪ Observed Kabi Siromani High School ;</li> <li>▪ Conducted first meeting with teachers</li> <li>▪ Organized interaction meeting with students and draws their view about using of chlorine water;</li> <li>▪ Returned back to Birtamod, Jhapa</li> <li>▪ Stayed at Birtamod;s</li> </ul>   | Birtamod   |

## 5. Sampled Spots for Monitoring

The last visit was made from PAF side by Prabin Manandhar from (7-8) January, 2010 at various schools of Letang and Jhante VDCs in Morang district.

On the first day, the monitoring team visited Drinking Water Users' Committee in Jhante for impact study on using chlorinated water under the model of community-to-community level social mobilization process. For which, various number of interaction meetings were organized and discussed on emerging impacts after using of chlorines for drinking water purpose. While meeting with the executives of the drinking water users committee, discussion was also mainly focused on product (chlorine solution). The whole discussion was a nice interaction regarding the chlorine solution and people were made convinced and found positive with the project and realized that people of Jhante are more conscious about drinking water in health aspect. The chairperson along with its treasurer seemed very much positive in scaling up the implementation of water disinfection program by providing orientation with distribution of chlorine water bottle at free of cost during the fair that is going to organize soon. All these are going to provide only for with a hope of increasing more and more people's involvement in chlorinated water for drinking. Meanwhile they have also planned for producing more and more chlorine water through its standard WATA. Device. Producing



Figure 1 An interaction meeting with executive members of Jhante DWUC

and using large volume of chlorines water also means good indicator for generating revenue for committee.

### The attended participants from Jhante Drinking Water Users Committee, Jhante VDC, Morang

| S.N. | Name Participants          | Designation  |
|------|----------------------------|--------------|
| 1    | Nanda Pd. Khatiwada-55 yrs | Chairperson  |
| 2    | Mukund Dhungana-52 yrs     | Treasurer    |
| 3    | Prem Pd. Rai               | Member/staff |
| 4    | Deepak Lama                | ECCA-Letang  |

Similarly, for the observation of the school to community models, the study member also visited all three schools namely: Shree **Shikshya Bikash Secondary School, Laxmi Secondary School,** and **Mahabharat Secondary School,** In these schools, Also organized a series of meetings one after another with the school management committee for experience sharing on the implementation of Mini WATA (a electronic device produces chlorines water through electrolysis process) and also discussed on encountered problems with the nature clubs' members or students.

#### **Shikshya Bikash Secondary School, Kheruwa-5, Letang VDC, Morang**

- At present, 714 students are getting study place in this school
- Received mini WATA devices on 50 % subsidized price (Rs.4000) with plastics bottle (50 ml) for chlorine filling nearly one year before;
- Trained four persons (two from nature club's student and two from schol staff ) on making chlorine solution;
- Functioning the chlorine making devices and found collection of Rs. 2800.00 from selling of chlorine solution in 10 months period;
- All students of child club are actively engaig in motivating community people by organizaing street drama, and orientation for



Figure 2 Meeting with students of nature club in SBS School, Kheruwa-5, Letang



purifying locally made chlorine solution;

- The school staff name Gopal Dhakal who sells the chlorine solution by visiting door to door of community people (neighbourhood)
- At this moment, using of chlorine solution getting low due to winter season; people have still thinking of supersituation that bacteria in winter doesn't harm so they stop to use chlorine solution;
- Krishna Dangi studying in grade 9 explained that diseases like cold influenza, Typhoid have reduced dramatically in this monsoon.
- The following students and teachers were attended in Shikshy Bikash Secondary School, Kheruwa-5, Letang, Morang

| S.N. | Name Participants | Grade/Designation                 |
|------|-------------------|-----------------------------------|
| 1    | Pradip Subha      | Student-Grade 8                   |
| 2    | Krishna Dangee    | Student-Grade 9                   |
| 3    | Jeeven Dhakal     | Student-Grade 10                  |
| 4    | Uttam Limhu       | Student-Grade 9                   |
| 5    | Ganesh Adhkari    | Student-Grade 8                   |
| 6    | Rama Singchury    | Chlorine Making Training Receiver |
| 7    | Sunita Shrestha   | Student-Grade 10                  |
| 8    | Gokul Khanal      | Chlorine Making Training Receiver |
| 9    | Gopal Dhakal      | Chlorine Making Training Receiver |
| 10   | Saroj Pant        | School Teacher                    |
| 11   | Deepak Lama       | ECCA-Letang                       |

### Shree Laxmi Secondary School, Fadani-7, Letang VDC, Morang

- At present, 800 students are studying at this school
- Received mini WATA devices on 50 % subsidized price (Rs.4000) with plastics bottle (50 ml) for chlorine filling on the same day as above school;
- Found trained three persons (two from nature club's student and one from school staff ) on making chlorine solution organized for two days by ECCA;



Figure 3 Hoarding Board of School, Letang

- Involved 53 hhs and collected Rs. 800 from them by selling chlorine solution;
- Hampering in production of chlorine

solution due to load shedding

- Due to local people feeling of costly in compare to water guard of 200 ml now difficult to sell so advice has given to down the price of solution;
- Presently, distributing chlorine solution at Rs. 17 for the first time and charge Rs. 5 for refilling, while in the market 200ml of water guard bottle cost only Rs 35;
- During the meeting question raised on expired solution and made them clear on using expired solution in toilet, flooring and vegetables refreshing purpose;
- Team of teachers are very positive and planning to cope this problem and they themselves involve in encouraging chlorine solution to their parents of students.
- The following students and teachers were attended in Shree Laxmi Secondary School, Fadani-7 Letang, Morang

| S.N. | Name Participants                                   | Grade/Designation |
|------|---|-------------------|
| 1    | Rajan Joshi   | Student-Grade 10  |
| 2    | Nabin Sanwa   | Student-Grade 9   |
| 3    | Bimal Shahil  | Student-Grade 7   |
| 4    | Sangita   | Student-Grade 8   |
| 5    | Binda Ghale   | Student-Grade 8   |
| 6    | Jyoti Mall  | Student-Grade 6   |
| 7    | Suman Chongbang Chlorine Making Training Receiver   | Student-Grade 10  |
| 8    | Dil Maya Bardaya                                    |                   |
| 9    | Kamal Karki   | Student-Grade 10  |
| 10   | Narayan Khatiwada Chlorine Making Training Receiver | School Teacher    |
| 11   | Deepak Lama   | ECCA-Letang       |

#### **Mahabharat Secondary School, Guwabari-9 Letang, Morang**

- 500 students are engaging in this school;
- Mini-Wate device is now not operation, before exam it was functional, due to stoping chlorine water for drinking;
- Four members have trained under two days intensive chlorine making training ;
- At this moment, 150 households have already sold chlorine solution including refilling status;
- Rs.1650 has been collected from the selling of chlorine solution from approximately 30 households



Figure 4 An interaction with school's teachers at Guwabari, Letang



- The following students and teachers were attended in Mahabharat Secondary School, Guwabari-9 Letang, Morang ;

| S.N. | Name Participants | Grade/Designation |
|------|-------------------|-------------------|
| 1    | Mukund Niraula    | Student-Grade 7   |
| 2    | Kalpana Rai       | Student-Grade 9   |
| 3    | Milan Limbu       | Student-Grade 9   |
| 4    | Sharaddha Subbha  | Student-Grade 9   |
| 5    | Prashna Rai       | Student-Grade 9   |
| 6    | Homlarni Subbha   | Student-Grade 9   |
| 7    | Jas Maya Tamang   | Student-Grade 9   |
| 8    | Ram Kumar Tamang  | School Teacher    |
| 9    | Birkram Rai       | "                 |
| 10   | Chand B. Rai      | "                 |
| 11   | Uma               | "                 |
| 12   | Lawati            | "                 |
| 13   | Dhan Kumar Rai    | "                 |
| 14   | Deepak Lama       | ECCA-Letang       |

### Shree Kabi Shiromani High School, Dhulabari-4, Jhapa

- A total of 850 students study place, govt. run school locate outskirts of Dhulabari city;
- Proposed for high school from 2067;
- About 50 students were present during interaction meeting;
- Deep boring water is main source of water , tested as free from germs and bacteria;
- Chances of contamination of germ during water storage place;
- During the monitoring, no use of mini-wata device due to clean source of water;
- Two from students and one teacher were trained through the program;
- At school students from grade six to nine ;
- To this monitoring time, only 25 students have purchased chlorine solution for the first time and have not been refilled yet except one household .



Figure 5 Participated students in interaction meeting



- Rs. 380 amount has been collected from the selling of chlorine solution from approximately 25 households
- The following students and teachers were attended in Shree Kabi Shiromani Lower Secondary School, Dhulabari-4, Jhapa ;

**Figure 6 Interaction with school's Teachers**

| S.N. | Name Participants                | Grade/Designation |
|------|----------------------------------|-------------------|
| 1    | Laxman Rijal                     | Student-Grade 8   |
| 2    | Bikash Karki (training receiver) | Student-Grade 9   |
| 3    | Kamal Gautam                     | Student-Grade 9   |
| 4    |                                  | Student-Grade 9   |
| 5    |                                  | Student-Grade 9   |
| 6    |                                  | Student-Grade 9   |
| 8    | Prem B. Karki ( trained)         | School Teacher    |
| 14   | Deepak Lama                      | ECCA-Letang       |

## 6. Previous Monitoring Visits

Prior to this visit, two similar type of visits had also been paid during project period along with other PAF staff namely: Lal Bahadur Siwa; Ramesh Lama and Arun Pandey in different occasions. The objective was the observation of the model Program that ECCA had been running the project in Morang district through the approach of school to community and community to community.

Despite of these, I have also attended the International Seminar on WATASol Approach organized by ECCA-Nepal along with others on 21 April, 2009 at Hotel Himalyan, Kupandol, Lalitpur.

## 7. Major Findings /Outcomes

Through in-depth monitoring ,observation visits, the team has found the following findings in the program areas:

**Role model approaches for Social Mobilization:** The way through which mobilizing local people are found totally different, new and seems effective than what PAF has being adopted. For mobilizing local people, program adopted two approaches with different motives:

- Community to Community: for mass mobilizing, the particular community who uses drinking water from the same source or storage or management using chlorines water for drinking and meanwhile encourages other, to use chlorine water for water purification, who do not belongs to other than that community. This approaches not only helps message flow on wider scale using chlorinate water but also establish new relationship with new community for purifying drinking water.



Figure 7 Reservoir tank of Jhante Drinking Water Supply

During the last interaction meeting with executive members of Jhante Drinking Water Committee, that the private school nearby Jhante has recently ordered for purchasing large quantity of chlorine water for purifying drinking water at school environment. Similarly, some households residing nearly this community has also purchased record of chlorine water contained bottle from this drinking water committee. This could happen as a result of proper dissimilation of using chlorines waters makes them keep away from diseases even in monsoon season and also maintains healthy surroundings environments.

- School to Community: Under this approaches, first entire schools students get orientations on water purification using chlorine water from the members of nature club, who supposed to be main catalyst for social mobilizer get already indepth knowledge about chlorine solution and its importance through project. Then again project organized a two-days training on various aspects such as: for chlorine producing, device handling, using, repair and maintenance knowledge to two participants among from child club or nature club's memers along with concerned teacher and peon from the selected school for handngling, chlorine water's quality assessing and proper using of chlorine water that produce from Mini-Wata device. Afterwards, these oriented with trained school students visit parents houses and convey the message and encourage for water purifying with the use of chlorine water. Thus message of using chlorine water for purifying passes from students to family and hence spread out the message and mobilize the whole community. During the monitoing, such child clubs are functioning well and actively participated on this movement. Now, they are playing active role in mobilizing their parents and neighbourhood. They display street drama show for motivating to use of chlorine water for drinking purpose.

**Inclusive Project Location :** Majority of project location are fall under rural and densely populated by Janjati including and followed by dalit and other communities. Monitored area like In Jhanta of Morang where targeted beneficiaries are mostly from Rai/Limbu follows by Bramin/chettri also included Dalit of 150 households. Similarly, students from schools of lower secondary and higher schools in Morang are main actor for initiating social mobilizers. Thus, this picture of program involvement clearly revealeds that the project is also satisfy inclusiveness approach too.

**Revenue generating for Project Sustainability:** Since PO has purchased ten Mini –WATA and four Standard WATA on 31 October, 2008 and all handed over to selected ten government owned schools and communities in program districts.

Handed over all three set of **mini WATA devices** out of ten in Letang alone, each worth of Rs. 8000 an electronic device use for prodcing low volumn of chlorine. Since each schools has paid its half cost for making more responsible ownership. In the case of Morang district, we have found that PO have been provided three mini-WATA devices to Letang based government schools and have started to generate income from the selling of produced chlorines water contained bottle. The main consumer of chlorine water is parents and relatives of the students who mobilized by students. To this last monitoring, we have found that the involvement number of parents who purchased & earning status by schools.

**The Staus of Chlorine Water User Households Number and Earned Income by School (As of 8 January, 2010.** Source: from monitoing and observation visit

| S.N | Letang Schools' Name                               | No of Students | Purchased HHs No. | Generated Income (Rs.) | Remarks            |
|-----|--|----------------|-------------------|------------------------|--------------------|
| 01  | Shree Shichya Bikash High School, Kheruwa-5        | 714            | 560               | 2800.00                | 10 months          |
| 02  | Shree Laxmi High School, Fadani-7                  | 800            | 53                | 800.00                 |                    |
| 03  | Shree Mahabharat High School, Guwabari-9           | 500            | 150               | 1650.00                | 25-30 hhs refilled |
| 04  | Shree Kabi Shiromani High School, Dhulabari, Jhapa | 850            | 25                | 380.00                 | 1 hh               |

The above table shows that all these schools on one hand functioning chlorine water producing devices well, while on another hand, it generating income for school and making healthy students and protects thiers students from getting water born diseases. This also concluded that popularity for purifying water using chlorine is increasing day after another which helps the project run sustainability after withdrwaing of project from these areas.

Similarly, handed over a single standard WATA (of worth Rs. 36000.00 )device out of four in Jhante Drinking Water User Committee also been handed over to Jhante Drinking Water Committee in Morang. The device is now operational and started to generate selling income from such produced chlorines water to its water users Committee's members. About 1400 households from ward no 1,2,8, 9 are getting 24 hours continue drinking water through 500 private stand taps, 62 community owned stand taps and 18 public taps of temple, schools and cremation place. From the water disinfection program, about 40-45 households have already involved and used chlorinated water for drinking water. So far now, Rs. 7000.00 revenue has been collected from the selling of chlorine .

Due this device, the Jhante drinking water user committee has expanded its relationship with other organizations like Jhante High School, Letang Residential School from which requested for providing Chlorines water. From this observation, we can conclude that device makes money which means making this awareness sustainably.

Capacity building through organizing two days trainings with provided booklets for operational guideline of wata devices.

## **8. Summary Conclusions**

To this reporting time, the program implementing partner organization namely in short ,ECCA-Nepal, has been delivered all orientations interaction about chlorinator device by providing with flirs in proposed various locations of Morang, Jhapa, Lalitpur, Bhaktapur and Kavre during initial project period.

## **9. Conclusion and Recommendation**

From a number of paid monitoring visits, conducted series of interaction meetings with real beneficiaries (i.e. nature clubs students, teachers at schools of Morang & Jhapa districts and meeting with local citizen, executive members of water users committee at Jhante Drinking Water Committee), studied the progress reports, and assessed Pos' submitted program progress and audited financial reports, the study and monitoring team has reached to say that overall performance achieved during project period is appreciative and rating in the best rank in term of performance and one of successfully implemented programs compare to other currently implemented programs under NDM-200