



Enhancing Community Capacities for Learning and Adaptation to Climate Change (ECCLA)

Annual Report



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Background

Hilly villages are no excused of the impacts of the climate change. For this reason the farmers in the village have to understand on how the changing climate is and will impacting their livelihoods and agriculture system as almost all families are depend on the agriculture where water is major source. Likewise the climate change mostly affects the water system. Similarly, it is also important for them to know about the adaptation measures to be taken.



vegetable farm in Durlunga

Considering the issue as important, HICODEF and The Glacier Trust again started a project in Satakun and Durlunga of Deurali VDC from 21 June 2016 to 20 June 2017. From the experience of the previous project, all partners agreed to expand farmers' field school approach in another community and explored for the suitable site. Therefore, Satakun and Durlunga of Deurali VDC ward no 8 has been identified to expand project activities such as FFS in this village. Then the project has focused to enhance skill and knowledge on vegetable farming through FFS that helped community to know adaptation skill to climate change. The community will get benefit to uplift their livelihood through offseason vegetable farming, broom grass plantation, climate change orientation through massive community mobilization.

These are the major activities of the Project

1. Boom grass plantation
2. Farmers' field school
3. Climate Change Orientation
4. Construction of small scale irrigation system
5. Monitoring

Activities implementation and achievements

a. Inception workshop

The inception workshop has been organized with the community people of Satakun and Durlunga two sites of the project where 68 persons participated in the workshop. In this workshop we have shared the entire program's goal, objective, activities, budget as well as the role of the community. In the same time, the participant of the Farmer Field School (FFS) has also been selected in the event. The workshop

has established the relationship of trust between community and the project. They have shown keen interest and hearty welcomed the project.

1. Broom grass plantation

a. Process

- 71 HHs of Satakun and Durlunga involved in broom grass plantation. The broom grass has multiple benefits as it can be used as fodder, swiping as well as it protect the land slides. The villagers collected 20000 seedlings and planted in 8 hector of



Boom grass plantation at Baseni



Boom grass plantation at Satakun

barren land. All the HHs divided into the groups and provided separate land for plantation. All the groups have their responsibility for wedding and protection. A frame technology has been applied for plantation as it is in slopping land.

b. Achievements

- 8 hectors of barren land has been fulfilled.
- Entire community took part actively in plantation.
- The community of Durlunga able to sold 250 Kg of boom grass @50/Kg and able to earn NRs 12500/- in

first year. The income will be increased from next year.

- They will gain extra income and it will also help to sustain the environment.

c. Future plan

- Scaling up the initiatives by the community
- Timely wedding and protection.
- Marketing

2. Farmer filed school (FFS)

a. Process

Farmers' Field School is an informal learning process where monthly group discussion and practical works are held in the farmer's field. In the project area there are two FFS in two sites Satakuna and Durlungs. All together 62 farmers (42 F, 20 M) involved in FFS in both sites. There are 9 sub groups have been formed in two sites each sub groups have 6-8 participants. The classes are run on group discussion and learning by doing approaches. A session starts with short welcome and introduction followed by



Tunnel construction



review, agenda and expectation of the class, and then finalizing the content of discussion. After classroom discussion, all participants and the facilitator visit demo farmers' field to observe and carry out practical exercises such as nursery bed preparation, weeding, pest control etc. The local resource person (LRP) has also been appointed for regular monitoring and supports the farmers. HICODEF has outlined the discussions into following headings:



Nursery establishment at Satakun

- Participatory review and reflection of activities (of the past)
- Vegetable seeds distribution
- Discussion on contemporary issues, problems and areas of interest of the participants
- The FFS focus on organic farming therefore the participants discussed and learn about pest management, composting, bio pesticide etc
- Field observation by facilitator and participants
- Self-monitoring and evaluation by the farmers on their progress and the achievements
- Lecture or discussion by the facilitator on specific issues
- Group discussion and group work for practical learning on specific task such as nursery bed preparation
- Field Practical work for doing, observing and learning
 - Seasonal calendar of different vegetable has been prepared in the class. The calendar guides contents of session and discussion with respect to target vegetables. All together 9 Farmer field school classes have been conducted in the project period in both sites



Preparation for Nursery bed

including informal discussion and inception classes which are not count in the regular class as per plan and budget.

5 sub groups in Satakun and 4 sub groups in Durlunga has been established in the name of insects and plant diseases to remember with clear role and responsibility. The entire FFS has been focused on vegetable farming. The project only provided 300 gms cabbage, 300 gms Cauliflower, 62 gms Tomato, 330 gms bitter gourd, 200 gms bottle gourd, 200 gms Sponge gourd and 300 gms Cucumber seeds to the farmers and all the farmers bought the seeds by their own for massive production The participants gained knowledge and skill on modern agriculture techniques as well as new

modality of vegetable farming like tunnel with mulching farming which is very adaptive method to the climate change as the vegetable grows in the tunnel which maintained the temperature. The facilitator applied the participatory tools and techniques as much as possible. The facilitator organized games, singing, dancing etc to make the class interesting and lively.



Preparing botanical pesticide and liquid manure

b. Achievements

- 20 tunnel plastics, 20 Kg nails, 67 gabion wire, 9 spray tank, 9 hajari, 1 roll mulching plastic and 20 Kg nursery plastics have been distributed after formulation of rules and regulation on time.

- 20 farmers constructed tunnels and started farming inside the tunnel. The farmers contributed local materials like bamboo, ropes and labour for tunnel construction.

- All the plant transplantations have been completed

in all tunnels. Likewise some farmers cultivate vegetable in outside field in small scale.

- The farmers able to produce 10088 kg of tomato, 11450 kg of cabbage and cauliflower and 4900 kg of cucurbiti groups of vegetable like pompkin, bottle guard, bitter guard, beans etc in total 26438 Kg of vegetable has been produced. They are able to consume vegetable for 9 months by consuming 1.57 kg per day in average.

- Likewise the farmers sold 10700 kg tomato, 6180 kg cabbage and cauliflower and 2155 kg of cucurbiti groups of vegetable and earned NRs 380000.00. In average they able to earn NRs 6140/HH. Furthermore the farmer who has tunnel able to earn NRs 8000 to NRs 10000 with in this period and some of the farmers able to earn NRs 3500 to NRs 10000 by cultivating outside the tunnel.

- Survivals of the vegetable plants are good so far.

- Leadership will develop as the participants of FFS

have to put their views and learning with other participants. There are also the mandatory rules of leadership handover in one class to another as they have to handover their responsibility of reporting, evaluation of class, management and entertainment.



Door to door marketing

- The farmers have adequate knowledge to recognise the pests in the vegetable farm and they prepared botanical pesticides for pest control and liquid manure in both FFS that is also environment friendly and not harmful to human and also it helps enhance the soil quality. It also help to reduce the cost of investment as it is prepared locally by themselves.

- The farmers also used *Bokasi* fertilizer instead of chemical fertilizer.

- The farmers have enhanced adequate knowledge on vegetable farming. They have made yearly plan according to



Tomato in tunnel farm



Vegetables inside and outside the tunnel

seasonal calendar for cultivation of vegetable. Therefore now they have proper plan for systematic vegetable farming.

- The farmers also able to use animal urine for pest management that enhanced the production.
- There is no dropout in FFS. The communities acknowledged the FFS and showed their ownership on it. They have participated very actively. They helped each other for understanding and through monitoring and feedbacks.
- The farmers already started selling by themselves in the local market of Jhyalbas in Deurali VDC. Once they

produce enough the traders will come to them to collect the products. And the local cooperative is also initiating for vegetable marketing.

- The vegetable farming is turning their life and they able to earn extra income that will uplift their livelihood as well as it will reduce the unemployment.
- Some of the HHs expend the income for education of their kids and also invest in agriculture (purchasing seeds) and buying animals like goats and also for consumption.
- Some of them are planning for scaling up the vegetable farming to become commercial farmers.

What the farmers learnt from the classes

- Technologies of tunnel farming including construction of tunnel with plastic and local materials
- Difference between tunnel farming and open space farming
- Verities of vegetable to be cultivated and vegetable seed selection



Practical session in FFS

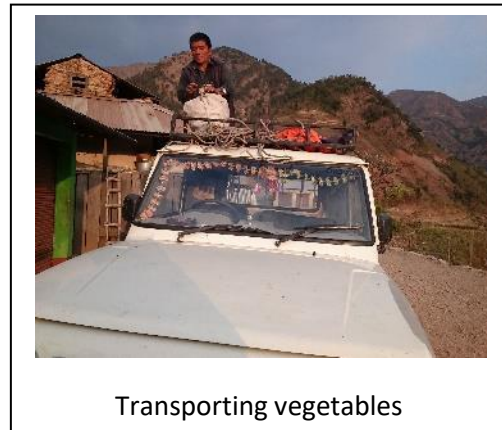


Packaging for market

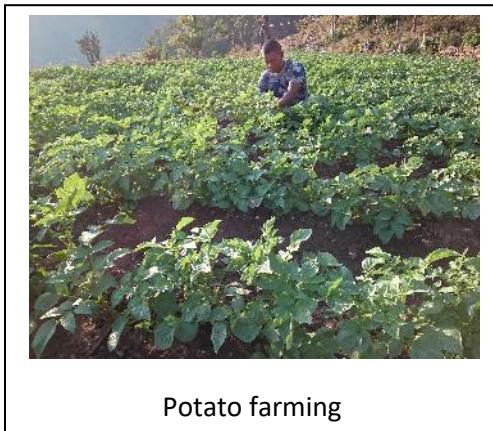
- Nursery bed establishment
- Preparation of seasonal calendar for vegetable farming
- Off season farming
- Adequate use of fertiliser and botanical pesticides
- Production of compost and Bokasi fertilizers.
- Mulching, plantation and sticking technologies.

c. Learning

- Tunnel farming is very much appropriate for adaptation to climate change as the plants in the tunnel are survived in the heavy rainfall in this monsoon.
- Seeds and materials will motivate the farmers for regularity.
- Divided into the subgroups create the healthy completion among them and also easy to run the practical session.
- Theory classes including practical session will help the illiterate farmers to remember and also make the class interesting.
- Marketing and production should be run simultaneously so that the farmers will be encouraged to scale up.
- Tunnel should be maintained regularly in windy season as the wind blew the tunnel.
- All the farmers should cultivate the similar types of products in the same time so that they can



Transporting vegetables



Potato farming

sell the quantity of products in the market. It will also reduce the transportation cost.

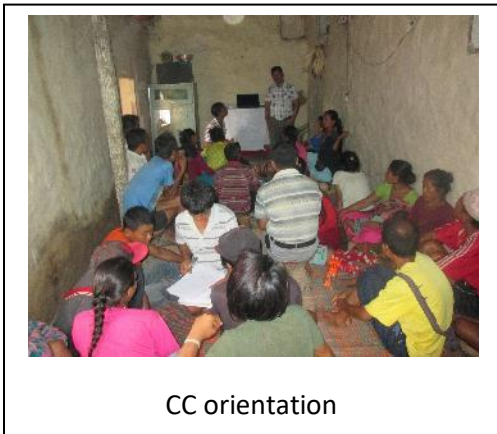
- The farmers should focus on off-season farming into the tunnel so that they can get high price.
- There are always challenge to select appropriate participants for FFS.

d. Problems/Issues

- The farmers transport the vegetable in the sack due to unavailability of vegetable crates so it damaged some vegetables.
- The farmers spent substantial time as they visited door to door for selling vegetable.
- In the initial time the field was not empty for some of the farmers so we couldn't able to start farming in same time.

e. Future plan

- Scaling up the vegetable farming.
- Cultivate the farming around the year into the tunnel. Some of the farmers will add tunnels by themselves.
- Focus on off-season and organic farming.
- Marketing of vegetables.
- Some of the farmers will turn into commercial farmers.
- Develop as a vegetable pocket area.



CC orientation

3. Climate change orientation (CC)

a. Process

1 days of CC orientation has been conducted in Satakun and Durlunga. The FFS participants are the primary participants of the workshop but other villagers also participated in the event as they were very much enthusiastic on it. Altogether 63 participants (41 F, 22 M) participated in the workshop. The workshop has been

organised locally and try to make it more practical. The conducted in very participatory manner including brainstorming, related video documentary show, pictures exhibition and history recall localising the issues.

b. achievements

- 63 farmers capacitated on the issues of climate change in practical manner.
- 2 local level adaptation plan of action have been prepared and the community take ownership to implement by their own.

c. Future plan

- Practice the knowledge on the ground.
- Action plan implementation.

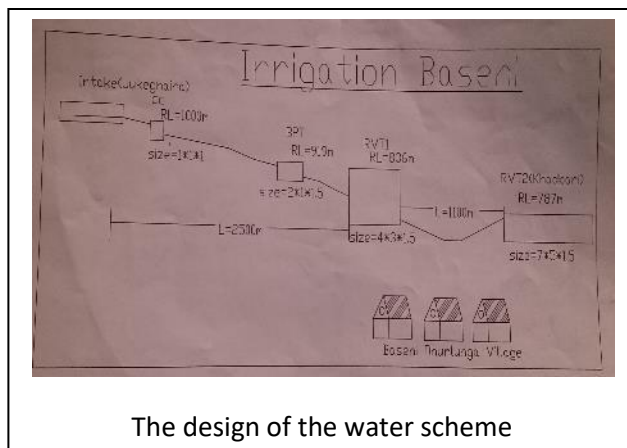


Video show on CC orientation

4. Construction of small scale irrigation system

a. Process

One of the project site named Durlunga/Baseni has plenty of fertile land but the community could not get benefitted due to unavailability of water for farming. Furthermore the community of Durlunga doesn't have proper clean drinking water. They have been drinking the very unsafe water from private small canals gone through middle of the village. Therefore the community has highly demanded for the irrigation scheme to be used for double



The design of the water scheme



purpose drinking as well as irrigation. Once the water comes to the village and barren land community can cultivate around the year that will uplift their livelihood as well as enhance health and hygiene. So the project has plan for small irrigation system for the community of Durlunga. There are the water source in upper hill of Durlunga in the distance of about 3600 meters. HICODEF facilitated to form the users' committee whom have the all the responsibility to construct the scheme. HICODEF hired the technical person for survey and prepared design and estimate. The cost of the scheme was very high so we have negotiated with community for



Irrigating the vegetable farm

matching fund as the project has only NRs 600000. The community heartily accepted the proposal and collected NRs 5000 from each benefitted HHs. The agreement has been made with the user's committee and started working for the water scheme.



RVT 1 construction

Achievements

- All the necessary structures like intake in the source, collection canbers and 18000 litters capacities Reservoir Tank (RVT 1) has been constructed above the village and already collecting the water and distributing.
 - The RVT has well covered by tin sheet to protect for children and animals. Likewise it also protect from the dirt.
 - 10 HHs of Dhusenni village and 19 HHs of Durlunga village has already got safe drinking water from the scheme.
- The pipe has already been kept till RVT 2 through RVT 1.
 - There are 3 pipelines from RVT 1 one for drinking water for durlunga, 1 for irrigation to durlunga and one for RVT 2. And water is distributing through the junctions.
 - Even though RVT 2 not constructed so far but the water has already reached to the site of RVT 2 and started using for irrigation in some land.
 - As the community raised the fund and collected local materials for the scheme and also labour to construct the scheme determine the sustainability as they have felt ownership on it.



RVT 1 covered by tin sheet



Challenge

- Construction of RVT 2 as all 34 HHs got water properly and they can use irrigation system to their entire field.
- To protect the intake as it is in the fragile site.

Future plan

- Search for fund to construct RVT 2 as people are very much enthusiastic to construct RVT 2.
- Regular monitoring and maintenance.

5. Monitoring

a. process

Monitoring is the major part of the project activities for smooth execution of the project as well as getting timely feedback for correction if there is any mismanagement. It also encourages frontline workers as well as community to work efficiently. Furthermore it supports entire project to be sustain in the future. Therefore the monitoring activities has been incorporated in the plan of the project. There are two types of monitoring

- **regular monitoring**

- The facilitator and LRP have been monitoring the project activities regularly and provide comments and feedback on site. They also visited frequently at all the field of the farmers and observe their vegetable cultivation and provide feedbacks for betterment.
- Focal person from HICODEF and sometimes VDC leader also visited the sites and observed farmer field and also irrigation scheme including plantation. They interacted with the farmers and motivate them to promote vegetable farming.
- The speech of focal person touched to the farmers and it would encourage them to do well. It showed that timely visit by the focal person is so important to motivate the farmers.



Monitoring of FFS

- **Expert/External monitoring**



- External expert Mr Dinanath Bhandari with climate change expert Kriti Shrestha of Practical Action visited the HICODEF.
- At the time we have reviewed the development so far by sharing photographs of the running project and also the past project.
- Then the team visited to past project area in Dhabaha to monitor the initiatives. We have found the broom



Discussion with farmers by external expert

grass has well protected and grown up and they were also planning to scale up in barren land. However some of the farmer who established tunnels scaled up and

regularise vegetable farming but some of them were seemed very inactive. The team discussed with farmers and encouraged them to continue vegetable farming by utilising tunnels.



Intake observation and discussion with community by trustee of TGT

- The team also visited the locally established Lekhbeshi cooperative and discussed for proper marketing of the vegetable products to promote farmers.

- Visitors from TGT Dr. Morgan Phillip and Richard

Allen along with Dinanath Bhandari of Practical Action paid their visit to old project site Dhabaha and new project sites Durlunga and Satakun. They have observed the project activities and interacted with the farmers regarding project activities.

- In Old project site Dhabaha 7 Farmers around 25% practicing their knowledge of vegetable farming and turned into vegetable entrepreneurs however rest of the farmers growing the vegetable for consumption.
- The visit team also visited the irrigation site and observe the water resource and the design of the scheme. They have discussed with the community for the optimum utilization of the resources and also make sure the community contribution as the cost of the scheme is very high. The community has made



Observation of tunnel farming by Co-director of TGT



commitment to raise the fund to complete the project on time. The cost of the scheme is Eighteen lacks and the project has only Six lacks so the community need to raise Twelve lacks to complete the scheme.

- As per the feedback of the visit team the location of the intake and collection chamber of the irrigation scheme has been changed and it has already been constructed.
- Boom grass has been observed well growing in the slope land might reduce the land slide and support their livelihood by selling them. This species also uses for fodder for animals. The locals have scaling up the plantation by their own in both old and new sites.
- Mr Richard Allen the trustee of TGT again visited Durlunga and observed the progress of irrigation scheme on April 2017.
- They expressed their views that they were satisfied the progress after their previous visit in February 2017 along with Dr. Morgan co-director of TGT and Mr. Dinanath Bhandari of Practical Action.
- They have discussed with the community and provide feedbacks for sustainable of the infrastructure as well as the proper utilization of water resource to uplift their livelihood.
- The visit team also interacted with the local cooperative named Lekhbesi Social Entrepreneur Women Cooperative for marketing of the vegetable. The cooperative members told us they have a plan proper plan for vegetable marketing. It has started to build vegetable collection centre and also maintained linkage and coordination with the vegetable traders.



Discussion with local cooperative for vegetable marketing

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