

Case Study on Livelihood Diversification (Sheep and Chick Rearing) at Gaibandha and Sirajgonj, Bangladesh

Regenerative Agriculture and
Sustainable Livelihoods
for Vulnerable Ecosystems
(RESOLVE)

SUMMARY

This case study report is an output under the RESOLVE (Regenerative Agriculture and Sustainable Livelihood for Vulnerable Ecosystems) programme. The report is based upon *Sheep and Chick Rearing* models of the programme. Moreover, it is an assessment of the progress of the model in its one year pilot phase. The report presents a short discourse of the models based on field scenario along with the views and opinions of the implementing partners and right holders as well as cost benefit analysis focusing on the particular case story. The study result addressed that the models have achieved success in terms of diversification livelihood, income generation, women empowerment and in strengthening rural economy. A cost benefit analysis of the models has been assessed based upon two selected right holders from two different models. In the cost benefit analysis, present value has been calculated in terms of net accounting and present value. The report finally explores recommendation focusing on the limitations of the project and a way forward in order to meet the objectives of the models.

BACKGROUND

In Bangladesh, the economy is mainly based upon a traditional pattern of agriculture. Climate change impacts have been adding an adverse effect on the livelihood status for the marginal community of Bangladesh. According to World Bank (2010), developing countries like Bangladesh are facing 75-80 percent potential damage for climate change. In this regard, urgent supports to prepare the people for drought, floods, and rising sea levels are required. Moreover, a unique and comprehensive approach to mitigate the serious effect of poverty, unemployment, food security as well as the impact of climate change is welcomed as well.

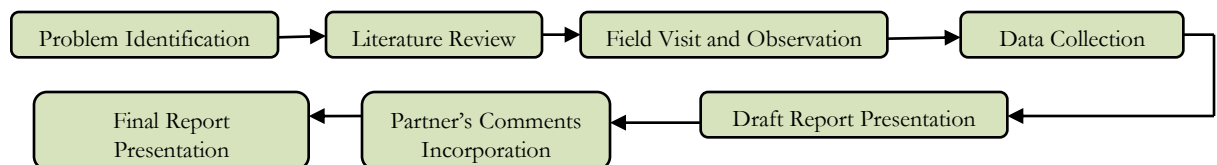
Under these circumstances, a new model developed by the RESOLVE (Regenerative Agriculture and Sustainable Livelihood for Vulnerable Ecosystems) programme emphasizing livelihood diversification for creating extra income opportunities entitled “Model on livelihood diversification” at Gaibandha and Sirajgonj has already been implemented for one year pilot phase. The livelihood diversification concept under the RESOLVE programme has introduced two models namely *Sheep Rearing* and *Chick Rearing*. *Sheep Rearing* and *Chick Rearing* are the two different models where sheep and chicks have been provided by local implementing partners GUK at Gaibandha and GKS at Sirajgonj respectively. They are also training the right holders for maximizing the benefit of the models. Women right holders are specifically getting spare opportunities for the easy manageable nature of the models. Moreover, RESOLVE not only assists the right holders but also provides technical support for developing the models to make it more profitable by minimizing existing limitations.

Livelihood diversification models are considered as significant ways to reduce unemployment, poverty as well as to ensure food security through income generation. Due to limited scope of employments (off-farming economic sector), the livelihood diversification in the rural areas has become one of the major challenges. However, it is expected that the existing present livelihood models under the RESOLVE programme may play effective role to diversify the rural economy through income generation, women empowerment and overcoming the climate vulnerability. The objectives under present research are:

- ❑ to find out the probable socio-economic changes of the stakeholders in terms of food and economic conditions.
- ❑ to address economic practicability of the models through cost benefit analysis.
- ❑ to promote women entrepreneurship to establish sustainable livelihood diversification towards climate resilient.
- ❑ to find out the limitations and provide possible solutions for the improvement of the models.

RESEARCH METHODS

This is a narrative short case story report based on direct field visits and field observation. During the field visit, data have been generated through a questionnaire survey, focus group discussion (FGD), informal interviews etc. Research has been conducted based on 36 right holders (where 24 are under *Sheep rearing* model and 12 are under *Chick rearing* model). Opinions from local community representatives and implementing members have also been adopted in the report. The methodological flowchart of the research is given below:



COMMON CHALLENGES: LIVELIHOOD VULNERABILITY TO CLIMATE CHANGE

Geographically, Bangladesh is laid on a high disaster prone area. Various climate change impacts such as recurring flood, cyclones, salinity intrusion, altered rainfall pattern and drought enhance the vulnerable scenario that has direct and indirect effects on human livelihood and the economy. These effects greatly obstruct marginal people especially for the rural communities in aspect to decrease agricultural production and income opportunity as agriculture is the major occupation in Bangladesh. Moreover, adverse climate change impact makes the situation more acute. Considering the subsequent effect, the RESOLVE programme has developed different models aiming to diversify rural livelihoods. *Sheep Rearing* and *Chick Rearing* are the two new innovative models in this programme that have been designed to focus on how vulnerable communities can move towards climate resilience.

Due to its geo-physical position and socio-economical context, Bangladesh is prone to several types of recurrent natural disasters. Present study area Gaibandha and Sirajgonj are the two most common natural hazardous and disaster vulnerable districts in Bangladesh. For this reason, a study on the climate adaptability and ultimate resilience to the climate impact was the prime concern regarding the climate vulnerability among the marginal communities. The purpose of the present study is to find out the progress of the models through the case studies of the selected right holders. This research will show the present socio-economic status compared to the previous practice in terms of food and economic aspects of the particular right holders. Sustainability is one of the important components regarding feasibility of a model. Under this research, economic feasibility will be measured through a cost benefit analysis.

Emphasising women empowerment is one of the fundamental concerns of the RESOLVE programme. In rural areas of Bangladesh, women are basically deprived of getting education and training that could help them to become self-dependent. Considering this, the present study highlights how women empowerment can be accelerated through the models in the study areas. This study will show the growing small scale entrepreneurship (especially women generated) development in the *char* areas creating new livelihood options, which will ultimately strengthen the local economy as well as stable the vulnerability of disaster prone community. This study also helps to find out the existing potentials and obstacles of the *Sheep Rearing* and *Chick Rearing* models. Finally, this study will focus on the model limitations and the possible problem based solutions along with recommendations towards improving the models.

THE LOCAL CONTEXT OF THE STUDY AREAS

Present study areas-Gaibandha and Sirajgonj are the two most disaster prone districts in Bangladesh. Gaibandha district, located in the North-West of Bangladesh, is one of the poorest and most food insecure regions. The district consists of 7 upazilas, among which the targeted Sundargonj upazila is one of the most vulnerable *char* areas. Natural disasters like flood, river erosion, storm, cold spells, drought and *Monga* (seasonal food insecurity) are appearing in these areas with a devastating impact which causes a massive loss of lives and properties every year. Agricultural production is being hampered hugely due to adverse impact of climate change. Sirajgonj with an area of 2497.92 km² situated in the North-western part of Bangladesh is another district exposed to flood, river bank erosion,. In Sirajgonj, Kazipur upazila is the targeted study area which is mostly bounded by the mighty river Jamuna.

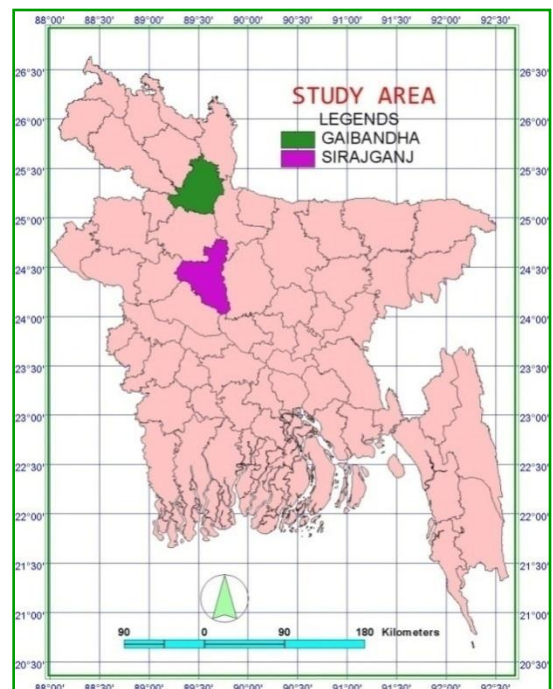


Figure 1: Map of the study area

Geographically, both Gaibandha and Shariatpur experience flood and consequently, river erosion almost every year. This is displacing a large number of families each year. Climate change has compounded the problem of existing prevailing natural disasters. The frequency and intensity of floods have increased many folds in recent years due to climate change. Being a flood plain, agriculture is the major economic sector for these areas. The traditional agricultural pattern that is practiced is mostly dependent on natural phenomena. Income and livelihood is based on this single occupation. People on account of *char* land areas are mainly detached from the main land and are deprived of all the basic needs.

LIVELIHOOD DIVERSIFICATION APPROACH

The diversification of livelihood specifically through rural diversification has become the subject of a growing amount of conceptual and policy based research at the present time (Dev *et al*, 2002). Livelihood diversification and income generation has been considered as an ultimate challenge for the rural marginal people for a long time. Livelihood diversification refers to the attempts by individuals and households to find out the new ways to raise incomes and reduce environmental risk, which differ sharply by the degree of freedom of choice (to diversify or not), and the reversibility of the outcome (Hussein and Nelson, 2000). Livelihood

diversification includes both on-farm and off-farm activities undertaken for income generation besides the main household's traditional agricultural activities. Livelihood diversification generally occurs as a result of an increased importance of off-farm wage labour in the household livelihood portfolio or through the development of new forms of on-farm/on-site production of non-conventional marketable commodities (Warren, 2002). An inherent function of the approach implies sustainable development of economical development through strengthening the rural or marginal community. Livelihood diversification may take place when rural producers change the composition of agricultural products they produce in terms of on-farm or off-farm activities. More recently, the approach has been used as new paradigmatic way to improve climatic vulnerability as well as climate adaptive measure for vulnerable communities. In this regard, the models of the present study (*Sheep Rearing and Chick Rearing*) have been put into action to help the rural people of *char* land to adapt the adverse impact of climatic change e.g. concurrent flood, drought, riverbank erosion, cold wave etc.

Livelihood or occupational diversification has two key components which are usually related:

Multiplicity: Multiple livelihoods (jobs, incomes etc.) requiring several part-time, concurrent activities.

Change, Transformation or Adaptation: Usually from an essentially subsistence agricultural sector to non subsistence, non-agricultural sectors, part of which we might call the rural non -farm economy (RNFE).

Source: Start & Johnson, 2004

FROM INNOVATION TO LEARNING

Sheep rearing and Chick rearing are two different models of livelihood diversification. *Sheep rearing* is being practiced in both Gaibandha and Sirajgonj where *Chick rearing* is being practiced in Sirajgonj.

Innovation One: *Sheep rearing Model*

Sheep rearing model is a new innovative model in the RESOLVE programme. Through the model, a total of (24) twenty four right holders (12 from Gaibandha and 12 from Sirajgonj) have been selected for the programme. Each and every member has been given 6 sheep. The main aim of the programme is to diversify livelihood options in the climate vulnerable areas giving more emphasis on women generated households. Here, the targeted right holders are mainly women and most of them are landless. In *Sheep rearing* model, sheep are given to the right holders by local implementing partner



Figure 2: Sheep rearing at Gaibandha

GUK at Gaibandha and GKS at Sirajgonj. They trained the right holders in order to get maximum benefit through the model as well. Furthermore, during the damage of agricultural crop they can survive by having extra income through selling their sheep.

Innovation Two: *Chick rearing Model*

Chick rearing is another innovative model in RESOLVE programme, which has been practicing at Sirajgonj supported by local partner GKS. Although *Chick rearing* is not well planned, the practitioners could not be termed as desired beneficiaries. The present implementing model, in this regard is different from the previous traditional practice. Here, *Chick rearing* model has been taken as a role model to diversify the livelihood of the selected right holders. The model has been introduced to the community (selected right holders) which is committed to the resilience



Figure 3: Chick rearing at Sirajgonj

towards adverse impact of climate change. In the model, local implementing partner GKS have provided chickens to 12 right holders in the study area. They were also provided with training, suggestions along with monitoring the progress of the implementing model.

RESULTS AND OUTCOMES

The main achievements of the models are-

Diversification of Livelihood

The most important goal and achievement from the models is diversification of livelihood of the selected poor right holders. Before practicing the model, these people were totally dependent upon single livelihood centered with traditional agriculture. However, after involving in the model these right holders are getting extra benefit besides their traditional livelihood.

Income Generation

Present *Sheep and Chick rearing* model are also creating income opportunity by diversifying the livelihood. Previously, their income or source of money was based on agricultural crop or day labour but at present, they are getting money by selling their sheep, chick and egg.

Empowering Rural Women

Empowering rural women is one of the fundamental issues in the programme. Women right holders; however, were the most targeted group in the models. They are now able to contribute their family by practicing the models (Case Story-1). Through visiting the field of study and talking to the women right holders it has been recognized that, women are influential people and they can play a decision making role with their husband as well.

Poverty Reduction

Poverty is one of the major focused phenomena in the study area. As the people of the *char* land areas are hard core poor, RESOLVE has taken the challenge to reduce poverty among the selected right holders. The *Sheep and Chick rearing* models have helped in this aspect by creating an income generating opportunity, a diversification of traditional livelihood as well as building awareness among the right holders.

Food Security

There is a direct link between income generation and food security. The models are playing significant role in context of food security which is one of the fundamental objectives of the RESOLVE programme. Through field visits it was found that the targeted right holders were able to eat three times every day which was quite difficult in the pre-programme period.

Moving towards Climate Resilience

The pilot phase has been primarily designed to be set in the climate vulnerable areas to make the community more resilient to the adverse impact of climate change in the selected study areas. The practicing models are climate adaptive in the sense that these can survive in heavy rainfall and fluctuating temperature variation. The model can sustain itself in the adverse situation of natural disasters like floods and cyclones that occur almost annually and destroy agricultural crops.

Others broad achievements include:

- Strengthening the community by awareness building and training facility
- Move the community towards food security and climate adaptation
- Strengthening the local economy

Case Story – 1

Right Holder: Mrs. Nazma Begum

Age: 35 years



Mrs. Nazma Begum is one of the beneficiaries of the *Sheep rearing* model who lives at Changmari village in Sreepur union, Sundorganj, Gaibandha. Her husband, Safi Mia is a day labourer in a brick kiln and spends most of the time of a year outside of the house. They have two children. Before involving themselves in the programme, they had to live from hand to mouth. At present, Nazma is happy to benefit through the sheep provided by the model. Six (6) months ago, she received a total of 5 sheep from GUK. During this time, she also received another 3 lambs. In the past, most of the family expenditure was covered by her husband's income. However, at present, she can contribute to her family. Through selling sheep, she has managed to buy a goat. *"In past, my children could not go to school as we could not give them school book and other educational equipment. But they can go to school now"* said Nazma with a happy face. She thinks that by practicing the model, rural women like her can change their livelihood.

Case Story – 2

Right Holder: Mrs. Shohagi Begum

Age: 65 years



Mrs. Shohagi Begum is a resident of Bishurigacha village in Kashrajbari union under Kazipur upazila, Sirajgonj. Her husband died when she was young. After her only daughter's marriage, she is presently living alone in a small cottage. Under the RESOLVE *Chick rearing* model Shohagi received 6 chickens. She said *"I have no earning person in my family. I live alone and these chickens are my source of income and livelihood"*. Visiting her home it was found that, at present she has 22 chickens. In last six months, she has bought at least 18 hens and cocks. Shohagi, popularly famous as *Shohagi Nani* (Grandmother Shohagi) is living in peace and happily now as a beneficiary of the *Chick rearing* model.

COST BENEFITS ANALYSIS

Cost benefit of the models has been assessed based on two right holders from each of the two different models. The main aim of the assessment is to find the feasibility of the models in terms of monetary value. The practicing duration of the models is only six months. In an initial stage of the practicing model, it does not meet the target in some cases.

Cost Benefit of *Sheep Rearing* Model

This assessment of *Sheep rearing* is based on the right holder, Jahanara Begum at Gaibandha (Table 1).

Table 1: Cost benefits analysis of *Sheep rearing* model

Category of benefits	Benefits in Tk.	Costs category	Cost based on accounting value	Cost based on present value (i=12 %)	Net profit/loss based on accounting value	Net Profit/loss based on present value
Selling of Sheep (2)	2800	Purchasing of sheep (5)	9000	-	400 (Profit)	252 (Loss)
Existing sheep (7)	10500	Shade preparation	3000	-		
		Cost of food	500	-		
		Preventive measures from disease	400	-		
Total	13300		12900	13652		

*Cost based on present value= $R \times (1+i)^t$

Here, R= 12900(Cost of accounting value), i=12 percent (12 percent determined as per national rate of interest discount), t= Time .5 years or Six month.

The result of the cost benefit analysis shows that, the net profit based on accounting value is Tk.400 where net profit/loss is based on present value is Tk.252 which indicates loss. It is an assessment based on six months and initial phase. Further assessment will be needed to find out the actual figure of the model's cost benefit scenario.

Cost Benefit Analysis of *Chick Rearing* Model

The cost benefit analysis of the *Chick rearing* model based on the right holder, Sahela Begum at Sirajgonj is shown here (Table 2).

Table 2: Cost benefits analysis of *Chick rearing* model

Category of benefits	Benefits in Tk.	Costs category	Cost based on accounting value	Cost based on present value (i=12 %)	Net profit/loss based on accounting value	Net Profit/loss based on present value
Self consumption	2500	Purchasing of chick	2000	-	6650 (Profit)	6213 (Profit)
Selling of Chick	10500	Shade preparation	3000	-		
Distribution with neighbors	150	Cost of food	2000	-		
Selling of eggs	1000	Preventive measures from disease	500	-		
Total	14150		7500	7937		

***Cost based on present value= $R \times (1+i)^t$**

Here, R= 7500(Cost of accounting value), i=12 percent (12 percent determined as per national rate of interest discount), t= Time .5 years or Six months.

The cost benefit analysis shows that, the net profit based on accounting value is Tk.6650 where net profit/loss based on present value is Tk.6213 which indicates that it is profitable to the practice. In the case of *Chick rearing*, here six months is enough time to assess. Hence, the result depicts the positive figure to practice the model.

CONSTRAINTS TO SUCCESS

Lack of Knowledge

People in the study areas are mostly uneducated. They have a strong belief in their traditional practice and culture instead of the newer one. It is found that, despite of giving training facility and instruction they are not following it properly.

Remoteness

The present study area under the Sundarganj and the Kazipur districts, are both remote areas and the transportation mode of the area is single modal basis (only by the boat).Due to the muddy roads and detached *char* land areas, field facilitators cannot move easily during the rainy season.

Traditional Practice

Though *Sheep rearing and Chick rearing* are presented in the models in an organised and systematic way, most of the right holders are practicing the models in the traditional way as usual. It is one of the important reasons beyond its rapid success.

Project Limitations

Through the field visit it was found that the right holders do not get instant veterinary support for the treatment of their sheep and chicks. Although some instructions and guidelines have been provided, people do not follow it properly. Talking to the right holders, it was found that in some cases, they like to maintain their traditional way for treating their sheep and chicks and as a result, the sheep and chick died after one or two days of sickness.

WAY FORWARD AND RECOMMENDATIONS

Though the livelihood diversification models achieved much success to meet up the objectives, it is still lacking in some areas of implementation and assessment at the field level. In spite of its short duration (nearly six months), it is moving towards success gradually but there are some constraints in the way of success of the models. In this context, some recommendations to way forwarding the models are given below:

- ❖ Increasing field co-ordination and assistance
- ❖ Providing veterinary assistants to prevent unusual deaths of sheep and chick disease (especially for the rainy season).
- ❖ Giving priority to the right holder's aspiration to sustain the model
- ❖ Providing training facility to the right holders
- ❖ Developing an alternative food source for sheep in the flood period (especially in the rainy season as then the grazing fields are being inundate for meeting the food demands of the sheep)
- ❖ Developing proper marketing channels to sell the sheep, chicks and eggs with a view to maximising benefit.

CONCLUSION

Despite of some constraints, it can be concluded that the models play a significant role in changing the socio-economic status of the right holders. Progress so far has met all the objectives of the project pillars including livelihood, economic, food security, empowering women and climate resiliency. However, this case study is only based upon six months of progress and may have some limitations and constraints. Finally, it can be concluded that if the limitations and constraints can be minimised, the models will be more feasible regarding climate adaptive measures in vulnerable community.

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