

Effect of Value Chain on Livelihood Improvement of RDRS Beneficiaries in Rangpur District

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Abstract

The main focus of this study was to determine the extent of livelihood improvement of the farmers due to their involvement in value chain process of RDRS, to explore the relationship of selected characteristics of the farmers with their livelihood improvement and to determine the problems faced by farmers in implementing value chain process and suggestions to overcome those problems. The study was carried out in Gangachara upazila under Rangpur district. One hundred and two farmers (around 50 percent) were selected as sample from an updated list of 200 farmers by simple random sampling method. Data were collected by a pre-tested interview schedule during 1st March to 15th April 2014. Based on Livelihood Improvement Status Index (LISI) of the 30 activities, top three activities of three aspects were i) Cattle (211.8); ii) Family planning (236.2) and iii) Knowledge on price of milk in the market (273.5). Near about two-third (62.7 percent) of the farmers had medium improvement, 19.6 percent low and 17.6 percent had high improvement. Thus, majority (82.3 percent) of the farmers had low to medium improvement in three aspects (assets and shelter, social empowerment and bargaining capacity). Among the ten selected characteristics of the farmers seven like educational qualification, farm size, annual family income, extension media contact and cosmopolitaness, savings and attitude towards RDRS showed significant positive relationship with their livelihood improvement, while their age, family size had no relationships. Lack of communication between buyers and producers (93.14 percent) emerged as the most important problem opined by the farmers. The least (84.31percent) problem mentioned by the farmer was lack of knowledge regarding value chain process in the farmers' level. The prime (95.10 percent) suggestion cited by the farmers was collaborative action can be taken by GOs and NGOs to improve the transport system. Capacity building training regarding this context can be increased among farmers' level (50.00 percent) was suggested by the farmers as the last suggestion.

Key words: *Effect, value chain, livelihood improvement, RDRS, beneficiaries*

Introduction

Bangladesh is a developing and predominantly a rural and agrarian country having a population of 157.6 million (BBS, 2014). Agriculture is an important sector in the economic development and poverty alleviation drive of many countries. The role of agriculture has played in the industrial growth and development of most

of the industrialized countries in the world cannot be over emphasized. The importance of this sector is more pronounced in the developing countries is the main thrust of national survival, employment and food (Muhammad et al., 2009). The infusion of value chain project creates self-employment for the borrowers, increases income leading

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to increased consumption/ savings, additional credit increases further income and so on, and the borrower is expected to increase their overall livelihood improvement. The poor have been benefited from such projects demonstrated by their increased income and assets. Several studies showed that beneficiary's households enjoy better standard of living, improved housing, higher human development status and greater assets and have shifted away from money lenders. In most cases, there is significant improvement in social indicators (i.e. livelihood improvement) such as children's school enrollment, fertility rates and use of clean drinking water (Hossain, 1988). The value chain as a concept describes the full range of activities that firms, farms and Workers do to bring a product from its conception to its end use and beyond. This includes activities such as design, production, marketing, distribution and support to the final consumer. The activities that comprise a value chain can be contained within a single firm or divided among different firms. Value chain activities can produce goods or services, and can be contained within a single geographical location or spread over wider areas.

RDRS Bangladesh is a respected, long-established development NGO working to empower the rural poor in northwest Bangladesh for over 42 years. It targets the beneficiaries to reduce their sufferings from different aspects of their life through technical knowledge, credit supply, and training for achieving economic development of their livelihood status

(RDRS. 2011). This study, thus likes to take initiatives to address the extent of livelihood improvement as well as impact on their living condition through implementing different approaches like value chain.

For understanding any meaningful socio-economic development program, if the main target is to involve the poorer section of rural people in development activities, it needs to know the specific problem issues. The issues on socio-economic development need more attention and thus it deserves a specific investigation. Now-a-day's most of the NGOs working in Bangladesh have been incorporating rural poor into their multiphase development activities. Value chain helps on socio-economic uplift of the lowest segment of people in Bangladesh. Hence, it is very necessary to undertake a research study on this aspect. In view of the foregoing discussion the researcher undertook a research study on the following objectives:

- To determine the extent of livelihood improvement of the farmers due to their involvement in value chain process of RDRS. The aspects of livelihood improvement status include:
 - Family assets and shelter
 - Social empowerment
 - Bargaining capacity
- To explore the relationship of selected characteristics of the farmers with their livelihood improvement.
- To determine the problems faced by the farmers in implementing value chain process and suggestions to overcome those problems.

Methodology

Gangachara upazila under Rangpur district was selected as the study area for this research. Gangachara upazila consists of six unions, namely Balapara, Mornia,

Gajgnonta, Laxmitary, Kolkonda, and Alambiditar. Out of these six unions Laxmitary and Mornia were selected purposively for conducting the study where

value chain programme implemented milk business activity operated by RDRS. The beneficiaries of value chain project of RDRS of Gangachara upazila under Rangpur district were the population of the study. An updated list of 200 beneficiaries of the study area was collected from NGO named RDRS. Out of 200 respondents a sample of 102 respondents (about 50%) were selected by random sampling technique.

Selected nine characteristics namely age, educational qualification, family size, farm size, annual family income, extension media contact, cosmopolitaness, annual savings and attitude towards RDRS were considered as independent variables. These variables were measured employing prevailing standard measuring methods.

Livelihood improvement is the dependent variable of the study. It was measured by computing a "Livelihood Improvement Status Index" in mainly three aspects of livelihood status. They were identified through literature review and visit to study area. The aspects were: i) family assets and shelter, ii) social empowerment and iii) bargaining capacity. From the three aspects, total 30 activities (15 from assets and shelter, 8 from social empowerment and 7 from bargaining capacity) were identified and selected. The measurement procedure of three aspects of dependent variable are describes as follows:

- i) Family assets and shelter: Family asset was measured on the basis of asset possession of a respondent household. Shelter is the housing unit condition of the respondent.
- ii) Social empowerment: By considering three indicators i.e. a) decision-making ability, b) social participation and c) social mobility measure the social empowerment. Decision-making ability: It refers to the activity of

respondents in a decision-making process in her family affairs. Social participation: It is the degree to which people are involved in social activities like marriage, birthday etc. and formal organizations office bearers or members and regularity in their attendance to meeting. Social mobility: It is the degree of movements of an individual's from outside of his/her social system.

- iii) Bargaining capacity: For measurement of bargaining capacity seven statements were selected in respect with the improvement of respondents.

The respondents were asked to express opinion on how extent her livelihood status has been improved in each of 30 activities along a 4-point scale: "high", "moderate", "low" and "not at all". The responses of the scale was given scores as 3 for "high", 2 for "moderate", 1 for "low" and 0 for "not at all". The summation of the scores against all the 30 specific activities produces the "Livelihood Improvement Status Score" of a respondent. This score could range from 0-90, where 0 indicating not at all improvement and 90 indicating high improvement.

For comparative analysis of livelihood improvement status of a respondent in individual activities a "Livelihood Improvement Status Index" was calculated by considering the concept and formula used by Huda (2011) and using the following formula:

Livelihood Improvement Status Index,

$$LISI = P_{hi} \times 3 + P_{mi} \times 2 + P_{li} \times 1 + P_{ni} \times 0$$

Where,

P_{hi} = Percentage of farmers with high improvement

P_{mi} = Percentage of farmers with moderate improvement

P_{li} = Percentage of farmers with low improvement

P_{ni} = Percentage of farmers with not at all improvement

In respect of any activities in livelihood improvement status the “Livelihood Improvement Status Index” could range from 0 to 300, where 0 indicating no improvement and 300 indicating high improvement.

Pearson’s Product Moment Correlation Co-efficient (r) was used to examine the

relationships of independent variables of the respondents with their livelihood improvement status. The problems and suggestions were measured on basis of number of citations. A structured interview schedule was used for collection of relevant data. Finally, data were collected from the study area during 1st March to 15th April 2014.

Findings and Discussion

Livelihood Improvement of the Farmers

Livelihood improvement status of farmers in family assets and shelter: The indices of fifteen family assets and shelter ranged from 3.9 to 211.8 against the possible range of 0-300. Distribution of the farmers according to their family assets and shelter are presented in Table 1. As the respondents were poor farmers’, RDRS try to improve their livelihood status. That is why, a new concept value chain is introduced and cattle are given to the farmers as family asset for improving their livelihood status. As a

result, cattle as asset possession are in the first positions in the rank order having LISI value of 211.8. Due to similar reason, poultry as asset possession are in the second positions in the rank order having LISI value of 189.1. Furniture is always needed for better living status. Besides high price of timber, there are other comparatively cheap sources like steal or partex for preparing furniture. Furniture as asset possession is in the third positions having index value of 180.5 which also are familiar with our present social condition.

Table 1 Livelihood improvement status of farmer according to their assets and shelter

Subject matter	Percent farmers mentioned their extent of livelihood improvement				LISI	Rank
	High	Moderate	Slight	Not at all		
Cattle	30.4	51	18.6	0	211.8	1
Goat	2	32.4	50	15.6	120.8	7
Poultry	18.6	53.9	25.5	2	189.1	2
Furniture	6.9	70.6	18.6	3.9	180.5	3
Solar energy	1	16.7	33.3	49	69.7	9
Television	1	4.9	17.6	76.5	30.4	10
Radio	1	2.9	5.9	90.2	14.7	11
Solar Fridge	0	0	3.9	96.1	3.9	15
Mobile	0	33.3	55.9	10.8	122.5	6
Bi-cycle	0	19.6	54.9	25.5	94.1	8
Motor-cycle	0	2	1	97	5	14
Sewing machine	0	2.9	2.9	94.2	8.7	13
Hut/tin house	16.7	46.1	36.2	1	178.5	4
Tin shed building	6.9	53.9	28.4	10.8	156.9	5
Building	0	3.9	2.9	93.2	10.7	12

Ownership of sewing machine, motor-cycle and solar fridge involves big amount of

money and generally rich people enjoy that facilities. Poor people have little scope to

avail it. So, 'sewing machine', 'motor-cycle' and 'solar fridge' was found as lowest, second lowest and third lowest rank in the table having index value of 8.7, 5 and 3.9 respectively.

Livelihood improvement status of farmers in social empowerment: The LISI value of eight selected areas related to social empowerment of farmers varied from 42.2 to 236.2. Distribution of the farmers according to their social empowerment related areas are presented in Table 2. Three sub-sections namely a) decision-making ability, b) social participation and c) social mobility constitute the social empowerment aspect of livelihood improvement status in this study. The first four areas belong to decision-making capacity followed by next two areas under social participation and the last two belong to social mobility of the farmers. After involving in value chain process of RDRS, the farmers had wide vision and their decision making ability, awareness and access to family planning materials and advices have been increased. On the other hand, different family planning programmes are being implemented in

Bangladesh for controlling the fast population growth. Hence, 'family planning' became top in the rank table obtaining the LISI value of 236.2. For obtaining better livelihood improvement status, health consciousnesses are mostly needed which is increased due to various NGOs health related interventions especially by RDRS in the study area. As a result, it is observed that in the research area comparatively high improvement in the healthcare sector. Consequence to that phenomenon, their decision-making ability in 'family healthcare' became second in the rank with index value of 231.4. Generally, the ultra poor farmer had limited opportunity to visit own upazila headquarter rather they have some personal or organization related works to do there. In Bangladesh, head of the family have to do hard works in the field for their survival besides the NGO directed work. So 'visit to own upazila head quarter' and 'visit to NGO office' was found as lowest and second lowest in the rank table having LISI value of 42.2 and 87.3 respectively.

Table 2 Livelihood improvement status of farmers' according to their social empowerment

Activities	Percent farmers mentioned their extent of livelihood improvement				LISI	Rank
	High	Moderate	Slight	Not at all		
Purchase, sell or mortgage of land	34.3	52.9	6.9	5.9	215.6	4
Child Education	37.3	53.9	8.8	0	228.5	3
Family healthcare	45.1	44.1	7.9	2.9	231.4	2
Family planning	50	38.2	9.8	2	236.2	1
Participation in social function (marriage, birthday etc.)	2	67.6	29.4	1	170.6	5
Participation in village meeting	2	37.3	47.1	13.6	127.7	6
Visit to NGO office	2	22.5	36.3	39.2	87.3	7
Visit to upazila head quarter	2	8.8	18.6	70.6	42.2	8

Livelihood improvement status of farmers in bargaining capacity: The LISI value of seven selected areas related to bargaining capacity of farmers' varied from 160.7 to

273.5. Distribution of the farmers' according to their bargaining capacity related areas are presented in Table 3. As mentioned earlier, after involving in value

chain process of RDRS, cattle and poultry as family asset has been increased and also the farmers' knowledge, ability to bargain, and awareness about marketing has been increased. So, 'Price of milk in the market' and 'Price of poultry and egg in the market' became the first and second in the rank

order having LISI value of 273.5 and 243.2 respectively. 'Communication of the nearest market' and 'Price of grain crops in the market' was found as lowest and second lowest in the rank order having LISI value of 160.7 and 178.4 respectively.

Table 3 Livelihood improvement status of farmers' according to their bargaining capacity

Statements	Percent farmers mentioned their extent of livelihood improvement				LISI	Rank
	High	Moderate	Slight	Not at all		
Price of grain crops in the market	21.6	37.2	39.2	2	178.4	6
Nature of vegetable buyers	29.4	52	16.6	2	208.8	4
Communication of the nearest market	19.6	23.5	54.9	2	160.7	7
Price of livestock in the market	29.4	26.5	39.2	4.9	180.4	5
Price of vegetable in the market	32.4	55.8	11.8	0	220.6	3
Price of poultry and egg in the market	46.1	51	2.9	0	243.2	2
Price of milk in the market	75.5	22.5	2	0	273.5	1

Total livelihood improvement status of farmers' in three aspects: The observed scores of the total livelihood improvement status of the farmers varied from 20 to 67 against possible range of 0 to 90 with mean and standard deviation of 42.70 and 9.63

respectively. On the basis of the above mentioned scores, the farmers were classified into three categories viz. 'low' (up to 33); 'medium' (34-52) and 'high' (above 52).

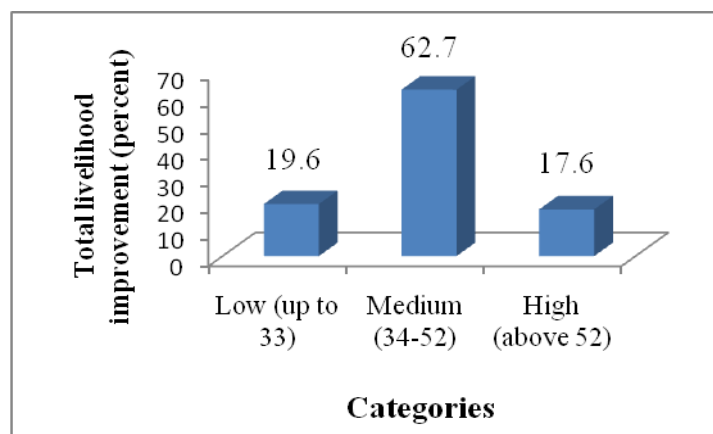


Figure 1 Bar graph showing distribution of farmers based on total livelihood improvement status

Slightly more than three-fifth (62.7 percent) of the farmers had medium improvement, 19.6 percent low and 17.6 percent had high

improvement (Figure 1). Thus, majority (82.3 percent) of the farmers had low to medium improvement in three aspects

(assets and shelter, social empowerment and bargaining capacity). For further improvement in these aspects farmers need to improve educational level. Overall extensive and coordinated development approach from both the GOs and NGOs are needed in the research area.

Relationship between the characteristics of the farmers and livelihood improvement: Pearson's Product Moment Correlation Co-efficient (r) was computed in order to explore the relationship between the selected characteristics of the farmers and their livelihood improvement. The relationship has been presented in the Table 4.

Among the nine selected characteristics of the farmers, seven had significant

relationships with their livelihood improvement status. The relationship between educational qualification and livelihood improvement of the respondent was positively significant. Farm size and livelihood improvement relationship of the respondent was positively significant. This may be due to that farming land is a vital resource of the farmers. Without this capital none can produce food crops, cash crops, fishes, poultry and livestock. The farmers having larger farm size logically had more livelihood assets. Thus, the larger their farm size, the more would be their livelihood assets. Ahmed (1977) also observed similar relationships in his respective study.

Table 4 Relationships between the dependent and independent variables

Dependent variable	Independent variable	Computed values of 'r' with 100 df	Tabulated value of 'r'	
			0.05 level	0.01 level
Effect of value chain in livelihood improvement	Age	.057	0.195	0.254
	Educational qualification	.233*		
	Family size	.099		
	Farm size	.383**		
	Annual family income	.331**		
	Extension media contact	.592**		
	Cosmopoliteness	.726**		
	Savings	.489**		
	Attitude towards RDRS	.303**		

*Correlation is significant at the 0.05 level and ** Correlation is significant at the 0.01 level

The relationship between annual family income and livelihood improvement of the respondent was positively significant. Sources of annual family income were not only farm based but also service oriented. So, annual family income of the farmers remarkably helped themselves to improve livelihood. Hossain (2000) and Islam (2004) also observed similar relationships in their respective study. Extension media contact and livelihood improvement

relationship of the respondent was positively significant. The farmers who maintain regular contact with different communication media can obtain valuable information. This information may contribute for the betterment of their livelihoods. Ahmed (1977), Latif (1974) and Lionberger (1966) also found similar relationships in their respective study. Cosmopoliteness and livelihood improvement relationship of the respondent

was positively correlated. The relationship between savings and livelihood improvement of the respondent was positively significant. The finding has conformity with the findings of Islam (2005). The relationship between attitude towards RDRS and livelihood improvement of the respondent was positively significant. The finding has conformity with the findings of Huda (2011).

Problems faced by the farmers: The researcher made an attempt to identify the various problems in implementing value

chain for livelihood improvement. These are given in Table 5. It is evident from the data contained in the Table 5 that 'lack of communication between buyers and producers' (93.14 percent) emerged as the most important problem opined by the farmers. The result might be due to that the RDRS may not arrange sufficient training and for the buyers and producers. Although some short duration trainings are arranged to increase their communication skill but they are not so effective.

Table 5 Rank order of problems faced by the farmers in implementing value chain for livelihood improvement

Problems	No. of citation	Percent	Rank
Lack of communication between buyers and producers	95	93.14	1
Lack of proper transport system	81	79.41	2
Unavailable input support	74	72.55	3
Difficult to adopt value chain market system rather than traditional market system	68	66.67	4
Lack of knowledge regarding value chain process in the farmers' level	86	84.31	5

'Lack of proper transport system' (79.41 percent) was the second most problem perceived by the farmers. It may be due to that RDRS beneficiaries farmers lives in the river embankment. The transport system is not good from the river embankment to the town. That is why; farmers opined it as second problem. Unavailable input support (72.55percent) was the third important problem cited by the farmers. The result might be due to that the farmers do not get input in proper time.

The least (84.31 percent) perceived problem mentioned by the farmer was 'lack of knowledge regarding value chain process in the farmers' level. The educational status of the farmers' is not so good that's why their knowledge regarding value chain process is also less. On the other hand value chain is a new concept; development of perception among the less educated rural farmers is difficult.

Suggestions opined by the farmers: Many suggestions were suggest by the respondents to overcome the problems. These are given in Table 6.

Table 6 Rank order of suggestions opined by the respondents to overcome the problems

Suggestions	No. of citation	Percent	Rank
Collaborative actions can be taken by GOs and NGOs to improve the transport system	97	95.10	1
Development of more local actors for better input supply to the farmers	85	83.33	2
Motivational training programme and workshop can be enhanced in this regards	78	76.47	3
Regular liaisons can be maintained between buyers and producers	69	67.65	4
Capacity building training regarding this context can be increased among farmers' level	51	50.00	5

It is noted from the data in table 6 that the foremost (95.10 percent) suggestion cited by the farmers was 'collaborative action can be taken by GOs and NGOs to improve the transport system'.

'Development of more local actors for better input supply to the farmers' was the second most important (83.33percent) suggestion offered by the farmers. More

Training programmes, seminar and workshop are required which will be helpful to prepare more local actors.

'Capacity building training regarding this context can be increased among farmers' level (50.00 percent) was suggested by the farmers as the last suggestion. This is due to that capacity building training improves the capacity and skill of the farmers'.

Conclusion

On the basis of the findings and their logical interpretations in the light of relevant facts, the conclusion might draw:

The majority (82.3 percent) of the farmers had low to medium improvement in three aspects (assets and shelter, social empowerment and bargaining capacity). So, it may be concluded that the extensive and coordinated developmental approach can be taken by both the GOs and NGOs. From the findings of Livelihood improvement Status

Index (LISI) it is observed that considerable improvement is occurred in some areas but still there is a great scope to improve in other areas for which necessary measures can be taken. Farmers faced a considerable amount of problems and they also opined few suggestions in this regards. So, the concerned GOs and NGOs can take effective initiatives to minimize the problems through proper execution of these suggestions.

Recommendations

RDRS and other concerned organization should take proper steps for distribution of desirable amount of inputs support to the beneficiaries in value chain process. Different motivational approach should also

be taken to overcome other problems for proper utilization of input for maximization of output. Concerned government authorities as well as NGOs should come forward with special care for improving the

areas of livelihood which are not at expected level. Special care should be taken by RDRS and other concerned organizations working in the study area so

that more beneficiaries could be included in their value chain process for enhancing livelihood development.

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