Poultry Farming potentially play a vital role in income generation & reverse migration in hills of Uttarakhand

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Abstract

The concept of livelihood sustainability is directly connected with the economic activity of people: economic activity profits from the natural environment at the same time, nature have a function as a sink for “excretions” of the economic system in the form of emissions and waste. Since both resources and the environment’s absorption capacity are limited, economic processes must be sustainable if long-term development goals shall not be sacrificed to short-term prosperity. This paper focuses on the sustainable development through livelihood enhancement activity in mountain villages of Uttarakhand as mountain villages generally have a high proportion of women to men as compared to plain areas. This is due to high levels of out-migration of men in search of jobs and cash incomes. Typically, a mother in a rural mountain family works for 12 hours a day, of which 3.5 hours are spent on gathering fuel, fodder and water, 3.5 hours are spent on livelihood related work and 4.75 hours on daily household tasks (Chopra & Ghosh 2000).

Sustainability (sustainable development), is not only related to the environment, but also to the entire human system and it basic assets (i.e. public assets) on which the human lives are dependent. Basic human system assets are human lives, health and security; environment; property and public welfare; infrastructures and technologies, in particular those that belong to the critical ones (PROCHAZKOVA, D. 2011).

Poultry is one of the fastest growing segments of the agricultural sector in India today. While the production of agricultural crops has been rising at a rate of 1.5 to 2 % per annum, that of eggs and broilers has been rising at a rate of 8 to 10% per annum. As a result, India is now the world's fifth largest egg producer and the eighteenth largest producer of broilers. Driving this expansion is a combination of factors growth in per capita income, a growing urban population and falling real poultry prices.

Key words- Poultry Farming, Sustainable Livelihood, Reverse Migration
I. INTRODUCTION

Uttarakhand is a 27th state in the Northern Himalayan Region in India, with diverse agro-climate conditions. 86% of its covered area is in hills, more than 64% under the forest and only 12.7% is Net sown area. The total population is 101.17 Lakh in which 69.5% population from rural areas. Primary sector 13.4%, Secondary Sector 35% and Tertiary Sector 51.6% contributed in Gross State Domestic Product (advance) at the current price. (Uttarakhand At a glance – 2012-13)

From Census 2001 to 2011, the population growth rate 0.70% in hill districts and 2.82% in plain districts. The primary source of hill population is agriculture. The income from agriculture and allied activities in the hill areas is nominal in comparison to the plain. There is huge disparity in the income levels in hills in comparison of plains. In the rural hills due to tough geographical conditions, remoteness and lack of livelihood opportunities people are migrating from hills to plain. The migration rate in rural is 344 per 1000 persons in Uttarakhand. (NSSO-2010) In the last 10 years, there are 1,18,981 permanent migrants from 3,946 gram panchayats. The main reason for migration is the problem of livelihood/ employment followed by dearth of education; health and infrastructure. (Migration Commission Report - 2018)

Different livelihood development schemes i.e. DAY-NRLM, ILSP, are more focusing on sustainable development. The core area of development is end-to-end value chain development with the collective approach of community based (Self-Help Groups). There are several outcomes have been reflected in the fields during the last couple of years. Although migration is happing, but there are some examples of reverse migration in the some
areas. The project “Integrated Livelihood Support Project (ILSP)” is been carried with an objective to assure better economic security to the small, marginal and poor farmers by providing technologies throughout the value chain of farm and non-farm produce from procurement to the market development of the value added products. The project is financial assisted by IFAD and implemented in Munakot block of district Pithoragarh of Uttarakhand. Uttarakhand Gramya Vikas Samiti (UGVS) as an implementer and facilitator worked with targeted families, which are engaged in various livelihood-generating activities. The livelihood cooperatives are providing support to the members of Producers Groups, which helps to increased income by production and sale of produce. Households preferring self-employment (small & medium enterprise) in comparison to the job based employment, which is promoting reverse migration. The main objective of the study, is to identify how Poultry value chain contributes in reverse migration.

II. MATERIAL AND METHODE

The study was conducted in Pithoragarh district of Kumaon region of Uttarakhand. In order to get information about the sustainable livelihood as these are the major requisites of achieving sustainable development in this region. The primary data was collected through households’ survey. The study was conducted in 5 villages of Munakot block. Sample sizes of 93 households were selected randomly.

<table>
<thead>
<tr>
<th>SN</th>
<th>Name of Village</th>
<th>District</th>
<th>Nos of HH (SC/ST/OBC)</th>
<th>Nos of HH (General)</th>
<th>Male</th>
<th>Female</th>
<th>Interview with HH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bisa Bajer</td>
<td>Pithoragarh</td>
<td>1</td>
<td>16</td>
<td>9</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>Marh</td>
<td></td>
<td>3</td>
<td>15</td>
<td>12</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>Urga</td>
<td></td>
<td>1</td>
<td>14</td>
<td>10</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Salmora</td>
<td></td>
<td>2</td>
<td>15</td>
<td>13</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Bhateri</td>
<td></td>
<td>4</td>
<td>22</td>
<td>18</td>
<td>8</td>
<td>26</td>
</tr>
<tr>
<td>6</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>62</td>
<td>31</td>
<td>93</td>
</tr>
</tbody>
</table>

Source: field survey; March- April 2019

To fulfil objectives of the study, a field based systematic study was carried out on the basis of questionnaire in selected area to find out the challenges and Descriptive analysis has been done based on the data.
III. THE OUTCOME OF THE STUDY

The study was conducted in 5 villages of Munakot blocks of Pithoragarh district of Uttarakhand. The study covered 93 households include those are marginal farmers and just above or below poverty line.

![Household Occupation](image)

Figure 1 Occupation of household in the study area

1. Socio economic profile

Assessing the socio-economic profile of the households is crucial for prioritizing the needs of the people which is linked with the successes of any developmental programme. 12% sample households belong to SC/ST/OBC categories. 33% respondents were female and 67% were male.

79% sample households are engaged in agriculture and allied activities (i.e. horticulture, livestock etc.) and rest of them are 8%, 7%, 4%, and 3% are in wage labour; shop keeping; Pension & Private Jobs, petty business respectively. The literacy level is low among women than men in the families. As far as young generation is concerned, almost all children are attending the school regularly.

2. Land ownership and type (in nali)

Land is the most valued productive resources that are wealth creating and livelihood sustaining assets for a significant majority of the interview households. The size of land holding and its productivity determine the social and economic status of a farming family. 73% households have their own land and the average cultivated land size is 5.25 nali. Irrigated land is 17%, un-irrigated is 30% and 53% is fall under forest, barren land etc. (50 nali =1 Ha)
3. Scattered Land holding

Agricultural land are scattered in the region and divided into 4 types. The analysis of data regarding the land holding reveals that the average size of land holding per family is less than one hectare. As per the following 37% land are divided in two pieces, 30% in four, 22% in 6 and 15% in more than eight pieces. The time taken to reach their fields in the cluster plots, household takes minimum 20 minutes and maximum 1 hour.

4. Traditional Crop Production

The data reveals that most of the households are producing traditional crops for their own consumption, in which very few farmers having surplus produce and the annual sale income Rs. 6,000 to Rs. 18,500. In the 68% sample, women decide which crops to produce. It was obvious; women in this region play a very significant role in subsistence economy. Women are engaged in agriculture and livestock, but the man dominates marketing activity.

5. Taken up new high Income Generating Activities

After collection and compilation of assessment data, it has found that agriculture; livestock rearing and non-farming are the main source of income. So earning from these sources will be the family income. As per the data reveal that 76% household has taking their interest to producing new high value income generating activity vegetables (Pea, Radish, Cabbage, Onion, Potatoes etc), spices (Turmeric, Garlic, Ginger etc,) and livestock (Poultry, Cow, Goatrty etc). During the survey, it has also found that the farmers’ cooperatives are also engaged in marketing of vegetable, spices and poultry. The member sells their produce to the cooperative especially in spice, eggs, chicken, vegetables and knitting produce. The cooperative fixes a rate for these produce, which are much better than the rate given by the intermediaries, and buy it from the member on cash basis. It is very clear through the observation and interaction with the household that farmers were showing more interest in poultry, vegetables and spices. The household will get better productivity as well as higher prices for their crops in less time and without damaging their crop by the wild animals.

Poultry is a short duration activity and providing respective returns on lesser investment. There is high demand of Chicken and Eggs in the market. Poultry business is making its good presence in the villages and setting of
example of reverse migration in the village; it has come into the notice that more than 27 youths of Bhateri village have reverse back to the villages and stated poultry cultivation.

6. Cost – Benefit Scenario in Poultry

6.1. Profitability Analysis:

Profit maximization is the main goal of a producer. To earn profit producer wants to maximize profit through minimizing cost. The focus of our study is to estimate the costs returns and finally the profitability of the farm.

In general, the main aim of layer farm is the production of egg. After egg production rejected birds are sold this meets the demand for meat. Thus, layer farm’s return comes from both egg and meal.

The relevant cost and returns of the present study is discussed below-

To calculate net return we have used following formula -

\[ \text{Net return} = \text{GR} - \text{GC} \]

Where, \( \text{GR} = \text{Gross return} \), \( \text{GC} = \text{Gross cost} \)

Here, \( \text{GC} = \text{TFC} + \text{TVC} \)

Where, \( \text{TFC} = \text{Total fixed cost} \), \( \text{TVC} = \text{Total variable cost} \)

To calculate benefit-cost ratio we use following formula-

\[ \text{Benefit} – \text{Cost ratio} = \frac{\text{Gross return (GR)}}{\text{Cross Cost (GC)}} \]

6.1.1. Total cost:

The cost items are classified into two broad categories, i.e. (i) Fixed cost and (ii) variable costs. Poultry production includes different types of costs under the following heads -

6.1.1.1. Fixed Cost:

i) Housing Cost:

Housing cost is the most important cost for poultry production. In the present study, most poultry house found within the living house and some were outside of living house. The housing cost is calculated by the summation of total making cost. House is a fixed asset. In our study area, average housing cost is Rs.75,000 per cycle.
ii) Electricity and Equipment Cost:

Electricity is considered fixed monthly cost. For a farm with 1000 birds has average electricity bill of Rs.1550. It raises as the number of birds rises. Again, for equipment farmer bear a cost. The farmers use different tools and equipment, such as - coop, feeder-drinker, bowl, case etc.

Therefore, we have also considered depreciation where calculating cost of these equipments. In our study area, average equipment cost is 13,850 per cycle.

6.1.1.2. Variable Cost:

i) Labour Cost:

There are broadly two kinds of labours in the poultry farm. Such as - hired labour and family labour. Here we have considered hired labour cost (Although family member are playing the role of hired labour). In this study, we have found that, each labour is paid Rs. 8,000 per month. An average labour cost is Rs. 24,000 per 3 months. So, it is a major cost item for poultry farm.

ii) Feed Cost:

Feed cost is the major cost item for poultry farms. In our study area only one firm i.e. Godrage Agrovate supplies their feed inside. Some farmer purchase feed from market at an average Rs. 24 per kg. So, in every day a part of capital is invested for feeding the bird. In the study area average feed cost for 3 month is Rs. 96,000.

iii) Veterinary Cost:

Veterinary expense is another important cost item of poultry production. Veterinary services included cost of vaccine, medicine, and fees of doctors. Total medicines costs were calculated by taking current market prices. Here average veterinary cost is Rs. 1,840 per cycle.

iv) Bird Purchasing Cost:

This is primary cost for the poultry grower. This cost varies from one farm to another according to the size and numbers. In our study area we have found that, price of little bird varies from 18-25. Here average bird purchasing cost is Rs. 24,000@ 24 each bird.
v) Transportation Cost:

Transportation cost includes two types of cost. Such as - cost for bringing feed from market and cost for bringing feed from market. Here, we found that, for a bag feed transportation cost is 10-30 based on distance from market. Here, average total cost is Rs. 22 per bag and average total cost is Rs. 3,520 per cycle.

vi) Other Cost:

Other cost incurred due to sudden occurrences, such as - need for extra bird purchase, repairing of poultry house, extra medicine and other managerial cost. Here, average other cost is Rs. 3,400 per cycle.

Table 2: Total cost of poultry production per farm @ 1000 birds/cycle (1 cycle=90 days)

<table>
<thead>
<tr>
<th>Cost Items</th>
<th>Unit</th>
<th>Unit price</th>
<th>Average cost</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Variable cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour cost</td>
<td>Rs per cycle</td>
<td>8000</td>
<td>24000.00</td>
<td>9.79</td>
</tr>
<tr>
<td>Feed cost</td>
<td>4 kg /bird</td>
<td>24</td>
<td>96000.00</td>
<td>39.14</td>
</tr>
<tr>
<td>Veterinary cost</td>
<td>Per cycle</td>
<td></td>
<td>840.00</td>
<td>0.34</td>
</tr>
<tr>
<td>Birds purchasing cost</td>
<td>Rs. per bird</td>
<td>24</td>
<td>24000.00</td>
<td>9.79</td>
</tr>
<tr>
<td>Transportation cost</td>
<td>Rs. per bag</td>
<td>22</td>
<td>3520.00</td>
<td>1.44</td>
</tr>
<tr>
<td>Other cost</td>
<td></td>
<td></td>
<td>3400.00</td>
<td>1.39</td>
</tr>
<tr>
<td>B) Fixed cost</td>
<td></td>
<td></td>
<td>93500.00</td>
<td></td>
</tr>
<tr>
<td>Housing cost</td>
<td>Rs. per cycle</td>
<td></td>
<td>75000.00</td>
<td>30.58</td>
</tr>
<tr>
<td>Electricity Bill</td>
<td>Rs. per cycle</td>
<td></td>
<td>4650.00</td>
<td>1.90</td>
</tr>
<tr>
<td>Equipment cost</td>
<td></td>
<td></td>
<td>13850.00</td>
<td>5.65</td>
</tr>
<tr>
<td>C) Total cost (A+B)</td>
<td></td>
<td></td>
<td><strong>245260.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: field survey; March- April 2019

6.1.2. Gross Return:

The return item includes sale of bird, egg and bird’s manure. After the egg production a rejected bird is weighted as 1.75kg to 2.25kg and 1kg is sold for Rs. 80 to 95. And a farm provides 40%-55% egg. So, a farm with 1000 birds gives on an average 400 eggs per day and sale of one egg on an average of Rs. 5.5. On the other hand, by selling birds manure a farm and sale of gunny bags also gets a lump sum payment. These items provide total return to the farm.

6.1.3. Net Return:

Net return is the amount obtained by deducting all the costs from the gross return. The average value of net return is Rs. 44,700, which is shown by following table-
Table-3 Gross cost, Gross return and benefit cost ratio of the farm.

<table>
<thead>
<tr>
<th>Items</th>
<th>Unit</th>
<th>Average unit price</th>
<th>Average total cost and return</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Gross cost</td>
<td></td>
<td></td>
<td>245260.0</td>
</tr>
<tr>
<td>B) Gross return</td>
<td></td>
<td></td>
<td>289960.0</td>
</tr>
<tr>
<td>Sale of bird</td>
<td>2 Kg</td>
<td>75</td>
<td>150000.0</td>
</tr>
<tr>
<td>Sale of Poultry Manure</td>
<td>Kg</td>
<td>40</td>
<td>13000.0</td>
</tr>
<tr>
<td>Sale of Gunny bags</td>
<td>Per bag</td>
<td>6</td>
<td>960.0</td>
</tr>
<tr>
<td>Sale of Eggs</td>
<td>Dozen</td>
<td>84</td>
<td>126000.0</td>
</tr>
<tr>
<td>C) Net return (B-A)</td>
<td></td>
<td></td>
<td>44700.0</td>
</tr>
<tr>
<td>D) Benefit-Cost Ratio</td>
<td></td>
<td></td>
<td>1.20</td>
</tr>
</tbody>
</table>

Source: field survey; March- April 2019

6.1.4. Benefit-Cost Ratio:

Benefit cost ratio indicates return per Rs invested. Benefit Cost Ratio (BCR) represent financial feasibility of any farm. As per study, the value of BCR is 1.20. This positive cost benefit ratio indicates the poultry farming is profitable and financially efficient.

6.2. Constraints Faced by The Poultry Growers in the study area and current scenario:

The major problems of poultry farming is found as under -

6.2.1. Economic Problems:

i) Lack of capital:

Cash capital is an important input for establishing and operating a poultry farm. In the study area, 27.5% households face capital problems. They don’t get financial support from various financial institutions. Because institutional credit is hardly available and interest rate is very high. However, households are getting limited financial support from their producer groups with minimum rate of interest.

ii) High Price of Feed:

Major part of expenses of farmers is needed in purchasing feed. Feed price has been going up which reduce poultry production in the area. Fig-2 shows that 20% farmers face these problems. Farmers collect feed from local agents, but local agent provides feed against high price. However, livelihood collectives of the region have signed MOU with a firm for supplying feed. Collectives are providing feed to the households at door level on
credit basis. Hence, collectives purchase bulk feed, so the price of feed for households is lesser than market price.

iii) Lack of Credit Institution:

There is a lack of credit institution in the study area. Here 17.5% farmers face problems of not having credit institution.

B. Social and Natural Problems:

In our study area farmers are face various social and natural problems. These are -

i) Outbreak of Diseases:

The affects of various types of diseases reduce poultry production. Because for purchasing vaccine and medicine their production cost rises. In our study area, 22.5% farms were faced critical issues through various diseases like IDV, Foul Pox, Gamboro, Ranikhat etc.

ii) Environmental Pollution:

In our study area, 10% households face problem of environment pollution. They have no proper system for the management of bird’s manure. They throw away their excrement in environment and it is responsible for various diseases in human body. For that, they have to bear cost, which hampers production.

iii) Lack of Communication Facilities:

In our study area, there is lack of communication facilities. Their road is not well. For that 40% farm, bear a large transportation cost. The transportation cost affects both input and output cost of value chain. As livelihood, collectives are providing the inputs in the villages and supporting in the marketing of produce. Somehow, it reduces upfront cost of households but simultaneously reduce the profits.
C. Marketing Problems:

In our study area, farmers face various marketing problems. Such as-

i) Lower Price of Egg:

The price of egg fluctuates more. When price falls, very low farms face loss. Here 22.5% farms face this problem.

ii) Lack of competitive market:

In our study area, market is not so competitive. For that price of meat reduces more. 10% farmers suffer from low price of meat.

D. Technical problems:

In our study area, 25% farmers face various technical problems. Such as- lack of training facilities and housing problems.

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Fig 2: Problems faced by poultry grower.

Anyway, though there are many problems in managing poultry farm, but it gives maximum returns with minimum expenses to the other meat-producing animals. So in recent year’s poultry farming in hills of
Uttarakhand has been emerging as a commercial basis. In the value chain model, collectives are playing more pro-active roles, which is an advantage to opt the business.

7. CONCLUSION AND POLICY IMPLICATION

It has discovered from the study that sustainable development of households in the Himalayan region can be obtained from three different interpretations that include economic sustainability, the ecologically sustainable and sustainable livelihood development focus of environment as well as long term feasibility of the enterprise and finally income generation as a part of a strategy for sustainable development.

Scattered farms, poor irrigation, finance, animal attack and high input cost, therefore, producers are reluctant to bring their produce themselves in the market. Although the cooperatives are working in the village level but government have to play the crucial role for poultry development/production and its marketing strengthen.

Hill region of Uttarakhand has tremendous potential in organic poultry because of the existence of traditional backyard system. Today, there is hardly any organic meat or egg production in the poultry sector in Uttarakhand. Thus, with the help of appropriate approach and technology, the backyard system of poultry rearing can be transformed to a successful organic venture. More research should be taken place to improve the quality of feed, vaccine, etc.

Government / Market regulatory authorities should promote financial instruments for financing and risk mitigation, entrepreneurship and mentorship of households. So they can develop their own enterprise, which encourage reverse migration. The purpose of this research is to adopt new income enhancing programs in a commercial level and move migrated people reverse back to the native home for the sustainable development of livelihood for Himalayan households. The poultry value chain not only helpful for income generation, women empowerment, reverse migration but also a good source of nutritional improvement for the family.
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