

Agriculture Transformation: A Method of Restricting Outmigration from Rural Hilly Region of Uttarakhand, India

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Abstract: Migration remained a prominent problem in rural hills of Uttarakhand. This trend has changed socioeconomic and natural structure of the rural areas in hills of Uttarakhand. Rate of migration in rural hilly areas remained high in last decades. Major causes of migration from hills to plain are having lack of infrastructure, low yield from farming, less employment opportunities etc. Despite of government policies and subsidies for reverse migration, problem of migration still exists. This problem can be resolved by agriculture transformation and exploring better opportunities of employment and income in the field of agriculture by conversion of non-traditional method of agriculture towards Integrated farming systems.

Key words: Migration, Agriculture transformation, entrepreneur, employment, Uttarakhand.

I. INTRODUCTION

Uttarakhand is a newly formed Indian state; it was formed on the 9th November 2000 as the 27th State of India. Uttarakhand is situated in northern Himalayan region of India, Geographically it falls between 77°34' and 81°02' E longitude and between 28°43' to 31°27' N latitude, covering an area of 53,119 km sq. Uttarakhand state is divided into two divisions *Garhwal* and *Kumaun*, there are total 13 districts in the state. Approximately 75 percent of population resides in hilly rural areas. Geographic region of Uttarakhand is rich in versatile fauna and flora main source of earning of people leaving in rural areas depends on horticulture and agro based activities. Around 14 percent of geographical area is available for cultivation. There is insufficient food security due to small size of land holding, poor fertility and difficult supply chain of agriculture output (IDFC, 2002). Topology of land is not fit for modern agriculture and use of machinery in fields therefore accessibility of arable land per person is low.

Out migration remained a problem in the mountain region of Uttarakhand, since the agriculture productivity is low in most geographic regions and having very less industrial growth particularly in hilly areas. According to National Sample Survey Organization (NSSO) persons those who migrating for less than nine months during the last one-year are considered as short-term migrants.

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Persons migrating for a total of nine months or more during the last one-year are regarded as long term migrants. Migrating households are defined as those households from where at least one family member reports migration and those who do not report any migration from the household are defined as non-migrating households. In hill of Indian Himalayan region there is no big industries and institutions to provide employment to the local people therefore people specially young educated persons migrate in big cities in search of better opportunities for jobs and income. Problem of migration become worse after Kedar Nath valley disaster in June 2013. Eapen (2013) around 1800 villages affected by this disaster 2500 families become homeless. According to economics times May 6, 2018 over 700 villages in this region have been abandoned and more than 3.83 lakh people have left their villages in search of earning opportunities. Since the 2011 census, population in villages in hilly rural areas are going down, there are 565 villages where the population is less than 50 percent.

Government took various measurements to restrict outmigration; one of the aims of new industrial policy (2001) of Uttarakhand Government is to setup small industries in hilly remote areas. Government also announced Special industrial package in 2003 after that, in past fifteen years new large number of manufacturing firms established in Uttarakhand but most of the setup in plain areas like Dehradun, Haridwar and Rudrapur. Despite of special package and plan for rural hill very less number of firms set their ventures in hilly areas. State government has constituted the Rural Development and migration Commission in August 2017 to scrutinize different aspects of outmigration, major role of this commission to advice government for multispectral development, developing mitigation strategies for migration promotion of welfare of rural population and formation of strategies for reverse migration.

II. METHOD AND OBJECTIVES OF STUDY

This study is exploratory in nature, data is collected from secondary sources like annual reports of government agencies and organization, paper published in journal, news papers etc. Primary data is collected from interviews and opinion of experts in relevant areas.

Main objectives of study are as follows:

- To study the reasons of outmigration in Uttarakhand.
- To identify the impacts of outmigration on rural areas in Uttarakhand.
- To investigate Agriculture transformation as a tool to control migration from rural hills of Uttarakhand.
- Identification of employment opportunities in rural areas through agro based activities.

III. HOUSE HOLD MIGRATION IN UTTARAKHAND

In human development report 2017 (HDR 2017) a survey is conducted in Uttarakhand state. In this survey data was collected on out-migration from all 13 districts of state. Survey is done at state and district level to investigate migration patterns and recent trends of migration. This Survey covered a sample size of 8450 households both within state and outside states. Population size was 2,482,333, with 65.76 percent people residing in rural areas and 34.24 percent in the urban areas.

Table: 1 Migration status household

Area		Resident		Daily commuters		short term Migrant		Long term migrant		Total	
		N	%	N	%	N	%	N	%	N	%
Rural	Hill	3450	60.7	44	0.8	181	3.2	2005	35.3	5680	100.0
	Plain	1091	95.2	3	0.3	22	1.9	30	2.6	1146	100.0
	Total	4541	66.5	47	0.7	203	3.0	2035	29.8	6826	100.0
Urban	Hill	1003	85.5	5	0.4	30	2.6	135	11.5	1173	100.0
	Plain	789	93.6	1	0.1	8	0.9	45	5.3	843	100.0
	Total	1792	88.9	6	0.3	38	1.9	180	8.9	2016	100.0
Total	Hill	4453	65.0	49	0.7	211	3.1	2140	31.2	6853	100.0
	Plain	1880	94.5	4	0.2	30	1.5	75	3.8	1989	100.0
	Total	6333	71.6	53	0.6	241	2.7	2215	25.1	8842	100.0

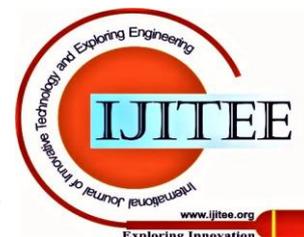
Source: HDR Survey, 2017

Source: Human Development Report of the State of Uttarakhand, Directorate of Economics & Statistics Department of Planning Government of Uttarakhand. 2018, Table 5.2 Page-229

It is found that there is a significant difference between hilly and plain district of Uttarakhand. In the area of hill districts, the proportion of households having at least one migrant is reported as 34.3 percent whereas in the area of plain districts it is 5.3 percent. In Uttarakhand almost one in every three households has one migrant. In rural hilly areas more than one third household is having at least one migrant. The short term migration in Uttarakhand is nearly 2.7 percent of total population. Hilly districts areas have about 3.2 percent and districts in plain areas have 1.5 percent short term migration. Out migration situation in the district of Rudraprayag (after Kedarnath tragedy) is worse, nearly half of the population (48 percent) migrated from the region for long term. The long term out migration in hilly areas is (51.7 percent) which is double term migration rate urban areas (24 percent). Districts in hilly region of Uttarakhand viz. Almora, Bageshwar, Chamoli, Champawat and Pithoragarh reported over one-third of its population as long term out migrated. In Champawat district one tenth of population demonstrate short term out migration. From this survey it is concluded that in the area of rural hill problem of outmigration is more as compare to plain areas of Uttarakhand. This shows that there is shrinkage in income and employment in hilly areas where people depend more on agriculture activates.

IV. REASONS OF OUT MIGRATION IN UTTARAKHAND

It was considered that hilly areas of Uttarakhand are having problems related to drying of water resources and supply of drinking water, electricity and road network but now these infrastructural facilities improved but out migration is still there. Singh (1992) rural poverty, population pressure on agriculture land, low income and disguised unemployment are the main reasons of out migration in rural India. In hills of Uttarakhand natural disasters like cloud bursting, land slide and floods occurs frequently these activities destroy agriculture land. Kumar and Sasakiy (2018) outmigration increases with increase in natural disasters. In Uttarakhand infrastructure facilities has improved now villages are connected by road and electricity but still life in hills is difficult especially for rural people engaged in agriculture cost to supply farm yield from farm land to market is very high. In search of better income opportunity and better standard of life households in the hilly areas settled in plain regions of Udam Singh Nagar, Ramnagar, Haldwani, Dehradun & Haridwar.

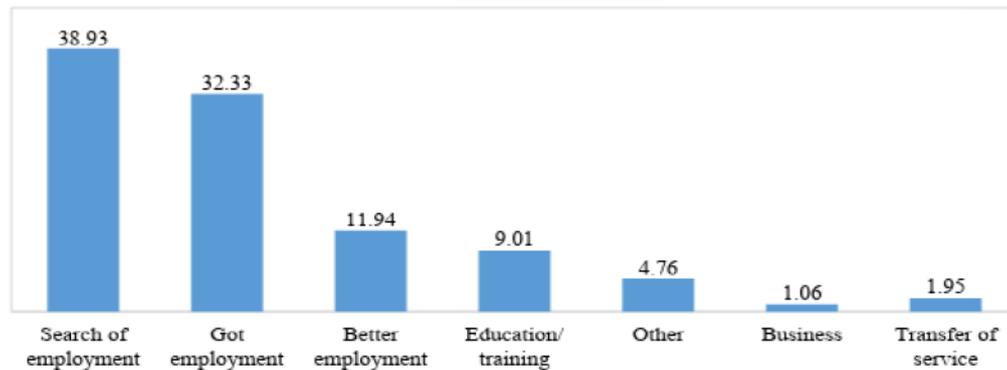


Micro level studies in the hilly region of Uttarakhand exhibit that 42 to 57 percent of households have at least one out migrant (Khanka, 1984; Bora, 1987, 1996). People also migrate to secure their livelihood in search of better opportunity and life style at the destination area (Deshingkar and Start, 2003; Deshingkar et. al., 2004). The push and pull reasons for migration are not adjoining infect they are interlinked and therefore different pattern of migration are

shown in different regions. (Srivastava, 2005; ICIMOD/IFAD, 2010).

According to HRD survey 2018 main reasons of outmigration related to employment are:

- Search for (jobs) employment (push factor)
- Accessibility of better employment opportunities (pull factor)
- Job security at the designate place of migration.



Source: Annexure Table-5.4; HDR Survey, 2017

Main characteristics of out migration in Uttarakhand are:

- (a) Most of migration is from hilly rural areas which are long term.
- (b) Percentage of young male migrants is high. Male young people are avoiding agriculture occupation. Metropolitan culture attracted youth to migrate in the big cities.
- (c) Most of people migrate in search of salaried jobs.
- (d) Number of non habited villages is increasing; most of the villages are now habited by old persons only.
- (e) Persons migrate long term with family in search of secure employment and better education facilities for children.
- (f) Remittance income is used to fulfill daily consumption needs of household and a very less portion of remittance is contributed towards improving agriculture practices.

• **Cause of low agriculture productivity in hilly region of Uttarakhand are:-**

- a) Small land holding size.
- b) Major portion of arable farm land is marginal and fragmented.
- c) Problem of irrigation facilities, mostly rain fed.
- d) Damage to Livestock and crops by wild animals (Leopards, Monkeys, Wild boars, Porcupines, parrots & other birds etc.)
- e) Farm destruction due to soil erosion by landslides and heavy rains, cloud bursting, repeated forest fires etc.

• **Affects of out migration in Uttarakhand:-**

- a) Change in demography in hilly and pain region of Uttarakhand state.
- b) Increase in the number of in habitat villages.
- c) Increase in the area of barren lands.
- d) Decline in the contribution of agriculture in state economy.

- e) Over populated urban areas like Udam Singh Nagar, Ramnagar, Haldwani, Haridwar, Rishikesh, Dehradun etc.
- f) Shortage of labor in hilly areas.
- g) Lack of investment expenditure in rural areas.
- h) Increase in the growth of obnoxious weeds (*Lantana*, *Parthenium* etc.) encroaching inside forests and in uncultivable areas.
- i) Reduction in fodder availability.

V. NEED AND SIGNIFICANCE OF AGRICULTURE TRANSFORMATION IN UTTARAKHAND IN PREVENTION OF OUT MIGRATION.

Literacy rates in the hilly rural region of Uttarakhand are comparatively high as compare to other states of India but this strive the out-migration of youths from state. This is due to fact that educated youth don't want to engage in agriculture activities they want high salaried white collar jobs in metro cities. Percentage of youth migrants is very high between the age group of 26-35 years. Technical and modern growth linkage model shows that rise in farm productivity increases employment and income opportunities in village areas. It is evident that agriculture income is low in rural areas in this situation agricultural transformation can boost the rural economy. Agricultural transformation is a process that can increase the farm productivity through a linkage of commercially orients farming with other sectors of the economy. Study done by Zhu and Luo (2010) in china shows that if some alternative are provided to household specially lower marginal labour migration can leads to increase in income in rural



areas. Horticulture based agricultural development in the hilly areas can engaged people and helps restrict migration. There is a need for agriculture transformation and diversification to improve the economic condition of rural people, since the size of land holdings is small there are possibilities to develop agriculture through agro allied activities like mushroom cultivation, animal husbandry, poultry, fishing, floriculture, medicinal plants growth etc. as integrated farming system model, which can increase the level of farmers income and generate employment with in local areas. By the help of diversification of agriculture activities farmers can utilize local resources at optimum level. Climatic conditions and agriculture topology is favorable for horticulture in Uttarakhand therefore by diversification of agriculture from traditional production to horticulture and vegetable production has high potential to generate Income and employment in the hilly region of Uttarakhand. This can be possible by government projects and public private partnership in agro based activities.

VI. MIGRATION – PREVENTION INITIATIVES

There is a prime need to make agriculture sustainable and employable, this can be possible through agriculture transformation and use of modern methods. Government has started various schemes of self employment in hill of Uttarakhand like eco tourism, home stay, Dairy projects etc. A strong network of training and development infrastructure is also required for the development of entrepreneur skills. Development of small scale agro base industries can improve scenario of migration from state. According to a latest report by rural development and Migration Commission around 105 people migrate daily from villages due to which 734 villages have been uninhabited. It is a problem that touches all the 13 districts, including the three plain districts.

Now coming to a solution part we think the government must make a Holistic approach to solve the issue of migration.

- **Infrastructure:** State government must make roads to provide better connectivity between villages and cities so that materials can easily reach villages and facilities improves there. If daily needs quality materials reach in one's village, one doesn't have to travel far for it. Complete electricity connection must be provided to every village with including facilities of Market, Banking, postal service and Internet Connection.
- **Medical Facilities:** Government has taken a step to provide medical facilities within every 10km. Further every state hospital must be equipped with Trauma Center of ICU facilities, proper machinery and other major health facilities must be installed in every major government district hospitals so that villagers should not go far places (cities) for their treatment.
- **Educational Facilities:** Although the government has taken an initiative by applying NCERT syllabus throughout Uttarakhand which will result in same syllabus everywhere, so one don't have to go somewhere else for education. Also the infrastructure of government schools should be upgraded and Digital Smart Classes education must be made mandatory. Frequent visits by

concerned higher authorities to Government Schools will compel the teachers to impart quality education.

- **Employment:** We think the government should make a region wise approach in solving employment related issues. Like opening of Ganga water bottling plants in the towns along Ganga River as packaged Ganga Water has commercial value. Opening of Pharmaceutical industries in Chamoli and Pithoragarh as this area is famous for its herbs and natural plants. People of that region will get more employment oppurtunities.
 - **Eco-Tourism:** Despite having such a huge potential for tourism haven't seen more advertisement promoting tourism in Uttarakhand (except for Char Dham, Nainital and Mussorie). The Eco-tourism industry will bloom more development in Uttarakhand.
 - **Agriculture:** As the terrain is mostly hilly so it is quite difficult for a farmer in Uttarakhand to grow variety of crops. Government must take some help of scientists from G.B. Pant Inst. Kosi-Katarmal Almora, Govind Ballabh Pant Agriculture University Pantnagar, Vivekanand Krishi Anusadhan Sansthan, Almora etc. to conduct more research and develop some hilly terrain friendly crops. Sophisticated technology should be introduced in hilly areas for crop development.
 - **Cold storage and Advance supply chain:** Hilly region of state has a great potential in production of fruits and vegetables, with better supply chain facility income of farmers can be increased. This field is also having employment generation potential through development of fruits and vegetable processing units in rural areas.
- Uttarakhand has a huge potential to contribute in Nation's Success unless its grievous problem of migration got a solution. Vast land in the region can be converted into prosperous income earning opportunity.
- **Promotion of Agriculture allied activates:** Good income can be generated by dairying business, mushroom cultivation, food processing, apiculture etc. these types of activities can be performed by farmers with traditional farming methods government is having various projects to support such agro business.

VII. CONCLUSION

Agriculture in rural areas is no more attractive for young generation due to less income and regular employment, people migrate from hills of rural areas in search secure and regular employment. Push and pull factors both forced rural households for outmigration. Out migration is high in hilly rural areas as compare to urban areas. The real challenge therefore is to sustain young population especially in rural hilly areas, by providing employment opportunities and enhancing their skills. It is only possible by having agriculture transformation where farmers can elevate their incomes by engaging diversification of agro activites. Migration of individuals and households has implications for both the source and destination areas.

Land of Uttarakhand has great potential to contribute in economic growth through agriculture transformation. There are possibilities of reverse migration with the joint effort of private and public enterprise.

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