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A CREATIVE STUDY AND THOUGHTS FOR SUSTAINABILITY OF VILLAGE ECOSYSTEM (SURE) IN ALMORA DISTRICT OF UTTARAKHAND FOR CONTROL OF ECOLOGICAL MIGRATION & SUSTAINABLE DEVELOPMENT STRATEGIES

Dr. S.D. Tiwari¹ & Ayush Tiwari²

¹ Senior Consultant for Infrastructure Development Projects
(Environmental & Social Safeguards Expert),

Uttarakhand Rural Road Development Agency (PMGSY), Opp.-IT Park, Sahastradhara Road-
Dehradun (Uttarakhand), INDIA

² Department of Civil Engineering,
Indian Institute of Technology (IIT), Chennai, Tamil Nadu, INDIA

Abstract: Uttarakhand is one of the ecologically sensitive, fragile and vibrant state of India due to its youngest mountain system on one hand and continuous melting of glaciers due to effect of global warming on other. Which came in to existence on 9th November, 2000. Presently, emergence of ecological migration is one of the key issues in the state caused by lack of adequate livelihood opportunities (industries, PSUs etc.), quality education in rural areas and increasing frequency of natural calamities like cloud bursts, landslides, flash flood, earthquakes etc. Based on the past studies conducted by various workers like researchers, scientists and other govt. bodies like Uttarakhand Migration Commission etc. out of thirteen districts in the State, two districts viz., Almora (Kumaon) and Pauri (Garhwal) are on top ranking with respect to ecological migration including shifting of people from hilly terrain to foot plains or valleys, religious themes, cultural faiths, spiritual thoughts, mythology and traditional crops are under serious threats due to lack of natural resource processing units or industries, academics institutions, community based health facilities, man-wild life conflicts and several other unforeseen ways last 2 decades. Today, which is not only a significant challenge for the Government but also for the people who belong to Uttarakhand state as whole and their future generation. If the present generation can't reversely migrate within 3rd decade of 21st century then it will be a great threat for our next generation. As a consequence of this ecological imbalances, most of our traditional crops, religious faiths, traditional culture and festivals shall be extinct or no value in future. Therefore, everyone who belong to Uttarakhand state have a major responsibility to do their best affords for control of population, natural resource conservation and sustainable development of rural ecosystems in Uttarakhand state as a whole. After inception of the state, most of inhabitants from Uttarakhand are migrating to facilitate their day-to-day life in terms of better jobs opportunities, quality education, better health services etc. During the study period, it was observed that the Government of India has not conducted the census survey due to Covid epidemics in 2019-20. However, this study has cover the census data of study area, identify no. of migrated and inhabiting households, planning and executing the best afford for reverse migration as a motivational approach for the society and awareness.

Index Terms: Case-study, Sure, Migration, livelihood, households and population.

Introduction

Uttarakhand is 27th State of India, which came into existence on 9th November, 2000 and lies at latitude 28°43'-31°27' N and longitude 77°34'-81°02' E. Its total geographical area is 53,483 Km². In terms of its geographical area, the state comes on 18th rank. Out of its total area (53,483 Km²) about 46,033 Km² (86.07%) area is under hilly terrain (mountains & glaciers) and remaining 7,450 Km² (13.93%) is under Siwalik valleys and foot plains. Since, 2 decades after inception of Uttarakhand as a separate state from its mother state Uttar Pradesh, it has been observed that ecological migration is one of the major concerns for the state govt. and local inhabitants caused with various ways. Out of the 13 districts, Almora, Pauri & Chamoli districts are on top ranked positions. Therefore, the present study has been carried out to know the genuine reasons, major constraints and bottle neck situations behind the ecological migration and sustainable development in the state. In this regard, the state Government is planning and executing the various schemes, internally and externally aided projects, exemption and supports in education and public health care systems for sustainable livelihood generation to promote reverse migration and sustainable development of the villages ecosystems as whole.

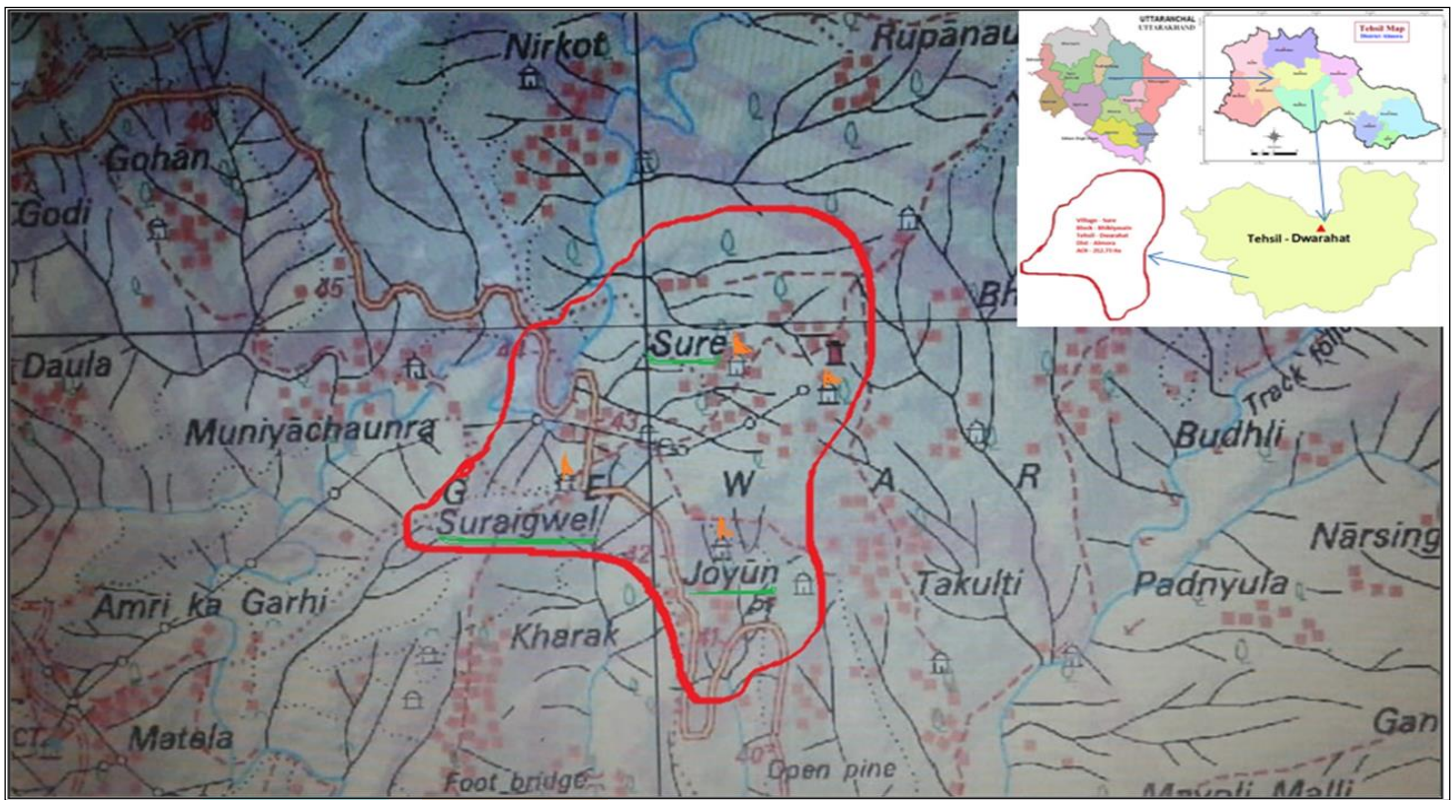
Objective of the Study

Overall objective of this study is to motivate and aware the migrated people for long-term sustainable developmental strategies for control of ecological migration and sustainability of Gram Panchayat (Village Ecosystem). Which can be promoted and supported by the analysis and time to time implementation of the following sub-objectives:

- Not to underestimate the villagers either inhabiting or migrated verses belong to rich or poor family.
- To identify, unite and share updated information among all inhabiting and migrated people through using latest mode of e-communication regarding current situations of village and latest schemes sponsored by the State Government for public welfare and sustainable development etc.
- To identify existing system of Village Panchayat for further strengthening and upgradation of ongoing working processes and system then to brought actual scenario of Panchayat in front of the State Government along with amendment related issues in Uttarakhand Panchayati Raj Act, 2016 for sustainable rural development and its effective implementation through Directorate of Panchayati Raj (Govt. of Uttarakhand).
- To assess the logical facts and reasons behind migration of people from rural to urban areas and cities during last 2 decades.
- To bring suggestive measures for implementation all above in order to control the migration one hand and advice for implementation of timely and effective sustainable livelihood options on other.

Study Area

The study area is rural ecosystem (Village-Sure), which exists in Bhikyasain Block under Dwarahat constituency of Almora District in Uttarakhand state. Which lies at latitude 29° 47'07.7"N and longitude 79°19'52.0"E. Out of about 7,791 Gram Panchayats in Uttarakhand state, village Sure (literally a certain without any doubt on its integrity and existence) has been identify for this study due to its unique integrity and rapid migration is one of the factor in top ranked position in Almora for continuous migration from the state. The study area has been depicted in the Survey of India Toposheet No.-53 O 5(2) in Map 1 given below.

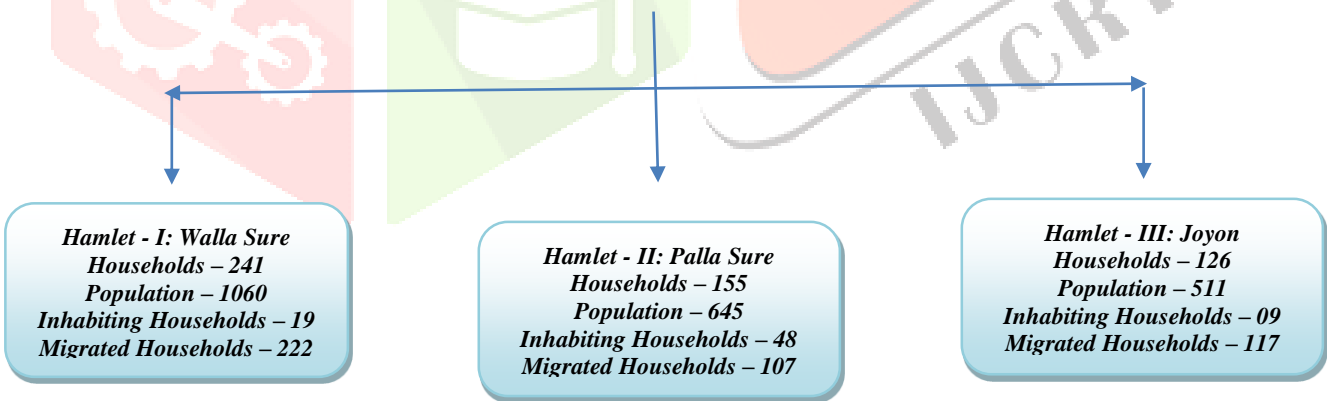


Source of Map: Survey of India

Map 1: Showing study area (Gram Panchayat - Sure) along with other adjoining villages in Bhikyasain Block, Almora

The study area (Village - Sure) has distinct in to three hamlets as locally called toks. The profile of each hamlet (tok) has been illustrated below:

Study Area Profile at a Glance (Village - 'Sure') in 2021-22
 (i) No. of Households Inhabiting in Village - 76 & Population - 314
 (ii) No. of Households Migrated from Village - 446 & Population - 1902
Total no. of estimated Households - 522 & Population - 2216



Methodology

The present study was conducted based on collection of primary data (available literature) and secondary data (household survey) and review of all information gathered from various sources and departments from Oct., 2018 to Mar., 2022 for all three helmets (walla Sure, palla Sure & Joyon), which comes together under Sure Revenue Village (Gram Panchayat). Simultaneously, e-communication (mobile calls, whatsapp & e-mail) was heldup during covid period in 2020-2021. The head of each household was consulted during survey through e-communication and asked about their safety related issues during covid epidemics and other information related to causes of their migration, current professions and other sources of livelihood options after shifting outside from the parental village, family structure, academic qualifications, present address weather inhabiting within the country or migrated abroad also.

Result and Discussion

The major findings of this creative research and thoughts of the present study have been elaborated under the following sub-headings.

A. Literal meaning of Study Area (Village - 'Sure')

During the study period, literal meaning of 'Village - Sure' have been explored based on available literature and discussion held with the various senior citizens, academicians and other philosophers etc. The common interpretations are as follows:



1. According to the Cambridge Dictionary

The term 'Sure' referred to certain without any doubt in terms of name of any things, place and commitment or simply we can say: "A village, without any doubt on its integrity and existence" is called "Sure".

2. Concepts of Local People

- According to Prof. M. C. Tiwari (Retd. from Ramjas College, Delhi University) term 'Sure' is derived from false root of Sanskrit language or regional language (Kumaoni) word 'Sur' referred to God and Goddess. Thus, this village "Sure is the Abode of Gods and Goddess" which indicate to "Dev-Bhoomi" in Hindu literature.
- According to Mr. N.D. Tiwari (Administrative Officer, U. P. Secretariat, Lucknow) the term 'Sure' is a combined word of 'Su & Re', whereas, 'Su' refers to goodness or beautiful place or thing and 'Re' refers to indication. Based on this concept, it was concluded that "Sundar Gaon" and 'Samridh Sanskriti' in the study area. Overall review of available information and literature, it was decided to develop a 'Logo or Village Symbol' for its Gram Panchayat based on consent and approval obtained with the villagers on occasion of India 75@Azaadi ka Amrit Mahotsav 2021-22. Which has been appreciated by villagers and being used as a Village Symbol in Gram Panchayat letter pads, community buildings and other common property resources etc.

B. Geographical Area & Land Cover

Total geographical area of the study village 'Sure' is 212.73 ha. Out of this, 117.64 ha is under private land (55%), 58.09 ha under banjar kabil aabaad (27%), 24.31 ha under Panchayati forest (12%) and remaining 12.69 is under miscellaneous category (6%). The details of each category of land with their area of coverage have been depicted through the bar chart given in Figure 1 below.

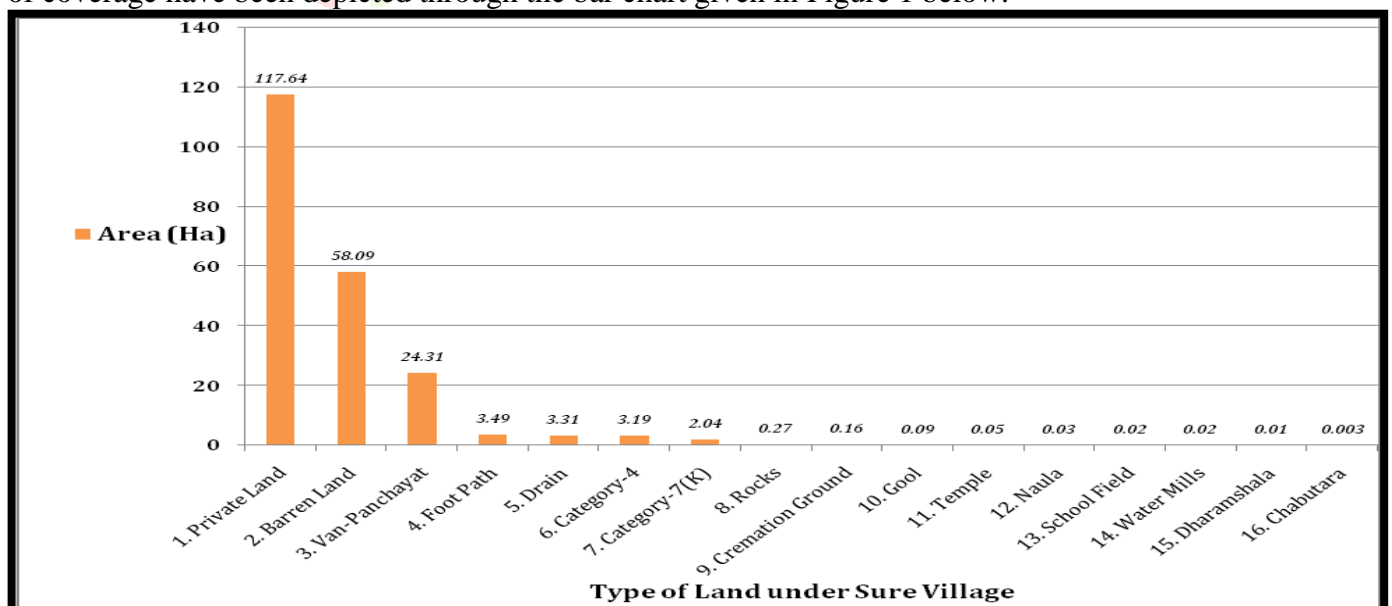


Figure 1: Bar Chart showing area of land distributed in various categories, out of the total geographical area

C. Demography

During the study period, available census data of 2011 and 2001 related to the study area were reviewed. However, the census data for 2021 could not gathered by the Govt. of India due to covid epidemics in 2020-2021. Hence, the village demographic data were itself collected and used for comparative analysis and illustrated in the Table 1 given below.

Table 1: Comparative Analysis of Demographical Data of the Study Area (Village – Sure)

Sl. No.	Particulars of Village Ecosystem	As per Census by Govt. of India		Present Study	Remark/Observations
		2001	2011	2021	
1.	Inhabiting Households (Decadal variation)	123	98	76	Number of households, population in terms of gender and caste-wise continuously reduced during last 3 decades.
2.	Inhabiting Population (Decadal variation)	559	393	314	
	A. No. of Male	232	171	147	
	B. No. of Female	327	222	167	
	C. Population of General Caste (GC)	290 (51.88%)	170 (43.26%)	99 (31.53%)	
	D. Population of Schedule Caste (SC)	269 (48.12%)	223 (56.74%)	215 (68.47%)	
3.	Total Literate Population (%)	330 (59.00%)	297 (75.57%)		Data could not available due to Covid-19 epidemics
	A. No. of Literate Male (%)	165 (71.12%)	152 (89.12%)		
	B. No. of Literate Female (%)	165 (50.46%)	145 (65.31%)		
4.	Children between 0-6 Yrs.	72 (12.88%)	50 (12.72%)		
	A. Male Children between 0-6 Yrs.	39 (54.00%)	24 (48.00%)		
	B. Female Children between 0-6 Yrs.	33 (46.00%)	26 (52.00%)		

Sources: Census data of 2001, 2011 & Present Study Data

Based on the present study, it was observed that only 15% population is still inhabiting at the village. However, about 85% population has migrated from the village. As per consultation held with the villagers, it was also observed that the total households are 522, out of them 446 are partially or fully migrated and remaining 76 are still inhabiting at the village. The family size of 522 households and total population have been given in Table 2 below.

Table 2: Total Households, Population and Family Size

Sl. No.	Particulars	Households	Population	Male	Female
1.	Total of Village Sure	522 (100%)	2216 (100%)	1119 (50.50%)	1097 (49.50%)
2.	Migrated (Partially/Fully)	446 (85%)	1902 (86%)	972(51.1%)	930(48.9%)
3.	Inhabiting (still March, 2022)	76 (15%)	314 (14%)	147(46.82%)	167(53.18%)
4.	Small Households (1-4 members)	338 (64.75%)	1116 (50.36%)	589(52.78%)	527(47.22%)
5.	Medium Households (5-8 members)	171 (32.76%)	965 (43.55%)	465(48.19%)	500(51.81%)
6.	Large Households (> 9 members)	13 (2.49%)	135 (6.09%)	65(48.15%)	70 (51.85%)

D. Human Resources

The summary of skilled human resources including both retired as well as working persons have been illustrated in Table 3 given below.

Table 3: Sector-wise Human Resources of Village - Sure, District - Almora (Uttarakhand)

Sl. No.	Sector-wise Particulars of Human Resources	Total No.	Retired Professionals	Working Professionals
1.	Doctors, Pharmacists & Health Assistants	12	09	03
2.	Ph. D. Holders or Subject Matter Specialists	07	02	05
3.	Higher Education (Academicians)	04	02	02
4.	Secondary Education (Academicians)	23	11	12
5.	Primary Education (Academicians)	09	03	06
6.	Non-Teaching Staff	09	04	05
7.	Indian Army	15	12	03
8.	CISF, Police and Intelligence Services	09	02	07
9.	Engineering Services	12	04	08
10.	Banking Services	09	03	06
11.	Postal Services	04	02	02
12.	Forest & Horticulture Departments	03	02	01
13.	Foreign Services, Ministry of Foreign Affairs	07	01	06
14.	Social Welfare and Judiciary Services	02	01	01
15.	Others Managerial Services	23	01	22
	Total	148	59	89

E. Sources of Livelihood Generation

Agrarian economy and livestock rearing are two major sources of traditional livelihood options since time immemorial but currently due to consequences of various factors like climate change, disaster (cloud burst, flush-flood), use of new technology and adoption of high yielding varieties (HYVs) of crops etc. have changed the traditional agriculture system and livestock rearing last two decades. The traditional community was very curious to conserve the traditional crops & practices, religious faiths, culture and biodiversity conservation. However, the modern community does't keep all these aspects in mind thus everything like germplasm of traditional crops and biodiversity conservation practices, religious faiths and culture are under threats to extinct at alarming situations. The rapid migration is key factor behind all these aspects of major concerned today. Before, inception of Uttarakhand as separate state in 2000, it was observed that almost all households grow and conserve about 24 species of crops and their germplasm, which have not been found currently after 2 decades at the home of inhabiting households within overall village. Which is a great threat or alert for all of us, if the germplasm of these traditional crops gradually extinct from their natural habitats, we can't reproduce itself for use and demand of our next generation. Thus, the year 2023 has been declared as international year of millets to reproduce and restore the germplasm of all millets and pseudo-cereals like Finger-millet (Manduwa: Eleusine corna), Barnyard Millet (Jhangora: Echinochloa frumentasia), Italian Millet (Kauni: Setaria italica), Pearl Millet (Bajra: Pennisetum glaucum), Soghum (Jowar: Sorghum vulgare) etc. These species have good tolerance potential against the adverse climate conditions hence suitable for dry and unirrigated areas whereas, other crops cannot grow due to low rainfall and poor soil fertility. They also have higher nutrient content compared to major cereal crops and ensure food and nutrition security. Further, millets are tolerant to drought and other extreme weather conditions and hence are endemic to such geographies. With growing concerns of life style diseases coupled with 'refined' diet culture, the modern consumers are slowly, but increasingly looking at the nutrient rich millets as a suitable alternative to wheat and rice. With the COVID -19, momentum picked up and both the urban and rural consumers are choosing millets for improving their nutrition and strengthening their immunity system.

In order to encourage production and consumption of millets, Government of India notified millets as Nutri-Cereals in April, 2018, which includes all species of millets as stated above and two Pseudo-millets viz Buckwheat (Ogal: *Fagopyrum esculentum*) and Amaranthus (Chaulai: *Amaranthus* species). To create domestic and global demand and to provide nutritional food to the people, Government of India had proposed to the United Nations for declaring 2023 as International Year of Millets (IYoM, 2023). The proposal of India was supported by 72 countries and United Nation's General Assembly (UNGA) declared 2023 as International Year of Millets on 5th March, 2021. This led to the Hon'ble Union Finance Minister making a Budget announcement on 1st February 2022: "2023 has been announced as the International Year of Millets. Support will be provided for post-harvest value addition, enhancing domestic consumption and branding of millet products nationally and internationally". In line with Govt. of India announcement, NABARD intends to intensify engagement with millets through pilot projects, stakeholder consultations, FPOs, capacity building of the farmers etc.

F. Basic Amenities

(i) Vegetation: The natural resources including biota (flora & fauna) of the study area play a crucial role in ecological balance, environmental sustainability and public health, food chain and income generation of the local people. During the study period, about 51 species of woody plants have been identified including 33 species of trees and remaining 18 species of shrubs and bushes. Most of them are fruit bearing, fodder producing, timber, fire wood and fibres yielding species. Almost all these plants have significant value in rural economy and livelihood generation of the people. However, 24 species of cereals, pseudo-cereals, millets and pulses have been observed in last 2 decades but currently only some selected crops are being grown by inhabiting villagers including Wheat (Gehu: *Triticum aestivum*), Mustard (Sarson: *Brassica campestris*), Lentil (Masoor: *Lens esculenta*), Finger Millet (Manduwa: *Eleusine coracana*) etc.

(ii) Rural Road Connectivity: Though, the Study Village is located on the 'Ranikhet-Jalali-Masi' motor road on 2 Km straight away from the road head 'Sure Gwel'. However, recently connected from Dwarahat to 'Sure Gwel' road section (about 4.0 Km is unpaved section) in 2019' under the Jila Panchayat Budgets and Vidhayak Nidhi in 2020 but the surface is still unpaved and dangerous for transportation. Thus, the rural road connectivity is still too much poor. The villagers are continuously trying for its strengthening and upgradation but no one listening the voice of local people.

(iii) Water Supply: Traditionally, there are about 13 water resources (11 naule & 2 dhare) within the village locally called Naula and Dhara but most of them (Naula) are generally seasonal and dry-up during summer season. Occasionally recharged after 2-3 years intervals but all resources (naule) have no guarantee to retain the water for further longer period. Thus, people use to other alternate sources called 'Nail ka Dhara', which is persistent but water discharging capacity also reduced during summer. The 'Nail ka Dhara' has a good quality of water with pleasant taste as temperature normally remains in between 7 to 11^oC throughout the year. All inhabitants preferred to 'Nail ka Dhara' water but its collection is too much laborious and time consuming as the sources is located about 1-2 km away on the boundary of Sure and Nirkot villages. No financial grant has been sanctioned by the government for supply and distribution of such kind of quality water among the villagers.

Most of the migrated people returned from Urban areas to rural areas thus water scarcity is being faced by the local inhabitants for their own use and cattle also. One of the oldest scheme is working since 1978 called 'Naidhna Devi Pumping Scheme', which supply and distribute water among 84 villages of 3 regions (Takuly, Bajan & Suraikhet). Initially, capacity of its pump was 75 house power (HP) while later on 2 more pumps were installed with capacity of 100 HP. However, the water storage capacity of Bichket water reservoir under Sure Village is 40 KL.

(iv) Electricity: Electricity was first time came during financial year 1990-91 and the people have welcomed to electricity supply scheme and cooperated the department to serve some duties like supply of electricity poles from road head to their village or hamlets. Second thing is that during that time one person collected the payment of household electricity bills and individually go to the electricity department - Masi market to deposit electricity bills of all villagers. It was a good example of public participation in

the Government schemes and projects to avoid unnecessary delay in their periodic submissions and financial dues.

(v) Academic Institutions: Initially upto the existence of Uttarakhand as a separate state, there were three academic institutions from primary to higher secondary level. Out of these, one is located at Joyo under Sure Gram Panchayat. However, two (1 GPS & 1 GIC) located under nearby Takulty Gram Panchayat. Which are still running while the Govt. Primary School (GPS) Joyo has been closed by state Govt. due to inadequate strength of school going children since April, 2018.

(vi) Primary Health Centre (PHC): No primary health centre (PHC) has been established by the state govt. within the Sure Gram Panchayat. The people still go to either Jalali at 5-6 Km or Dwarahat at 18-20 Km distance from the village. Which is also a critical situation for the patients, disabled persons and pregnant women have no good supports and own vehicles during emergency. In this regard, the state govt. should must provide ambulance facility to villagers and contact details for emergency should be disclosed at the Office of the Gram Panchayat and public places like local markets etc.

(vii) Market Facility: The local markets play an important role for selling, purchasing and offering of various goods and services either at individual or community levels. Without availability of good local market nearby Villages, the survival and to facilitate the day-to-day life is too much difficult because all selling, purchasing and offering of various goods and service supporting system are very far from the village. Nearby the study area (Village-Sure), only two local markets are available called 'Sure Gwel' and Takulty Market or Danuthan whereas transportation facility is also available.

Conclusion and Recommendations

Conclusion

A lot of changing and dynamic factors influenced the socio-economic growth and sustainability of rural people due to undulating topography caused by hilly terrains of the Indian Himalayan region. Some among them are as follows:

1. Undulating topography due to hilly terrain like rolling hills, meandering of rivers, rivulets etc. hence limited connectivity through all Modes of transportation to facilitate the day-to-day life.
2. Increasing frequency of natural calamities like cloud bursts, landslides, drought etc.
3. Lack of adequate livelihood options in rural areas due to unavailability of industrial growth, PSUs etc.
4. Lack of adequate number of qualities based academic institutions like IITs, NITs, coaching centres etc.
5. Lack of well facilitated community hospitals for public health services and safety.
6. Drought caused to depletion of water resources thus more investment is to be required for collection, supply and distribution of water from natural water bodies like rivers and rivulets to the villagers.
7. Constraints in election process of village representatives like Gram-Pradhan and Sarpanch's due to low academic qualification, and reservation quota.
8. Constraints in effective role and responsibilities of Gram Pradhan and Sarpanch's due to less monthly remunerations.
9. Constraints in government schemes like MNREGA due to least wages for daily wage workers, implementation of various schemes for rural road connectivity like Mera Gaon Meri Sadak (maximum 1 Km RCC road can be granted), implementation of PMGSY & RES schemes running without public and stakeholders' consultation.
10. Based on this study, it was also observed that all households are not migrating for livelihood but also many people like old aged or disabled persons etc. need to additional support to inhibit within the village during old age stage but they don't have any caring person in their family due some unavoidable circumstances like only girls offsprings but all are married and no husband. The percentage of such persons are limited or negligible.

Recommendations

The following points have been recommended for livelihood generation, strengthening of self-governance system at village level, and sustainable rural development with respect to revers migration in Uttarakhand state as whole are:

1. Each project executing agency under the state govt. should must to conduct public and stakeholders' consultation meetings prior to implementation of any developmental scheme and project to satisfy the people expectation (needs and demands) with the state govt.
2. Every year the state govt. announces for creation of new vacancies in various departments but neither consistency nor fairness in selection procedures. In this regard, submission is that there are about 7791 village panchayats in Uttarakhand state. While the status and working procedure of almost Gram Pradhan is same due to either over aged profile with less or negligible literacy or young one but no working experience related to mass communication and sustainable development. It is due to less age criteria (21 years) and less academic qualification (8th to 10th passed) for election of village representative (Gram Pradhan). If the govt. amended the State Panchayati Raj Act, 2016 may elected or appointed to the graduate person at each village Panchayat instead of new created vacancies. Thus, automatic about 7791 panchayats may get job for one graduate person at village level. As the state govt. is implementing the "Sarva Siksha Abhiyan" since 2001 as a consequence of this campaign, the literacy rate of Uttarakhand has also increased and better than other states. Then, why should be the village representative (Gram Pradhan) have 10th or 8th passed qualification after a long while. At least graduate person should be elected or to be deployed for Gram Pradhan and their monthly remuneration need to be enhanced from Rs. 3,500/ to 35,000/ salary month¹ approximately.
3. The govt. should annually to evaluate, appreciate and need to give award to the persons doing smart work at gram panchayat level either community as a whole or individual level credentials related to new innovations, livelihood generations like crafting, weaving, gardening and other creative works etc.
4. As it was observed that most of the vehicles in hilly areas passed in over loading and alarming situations. In this regard, the govt. should strictly adhere and implement the traffic rules and regulations especially in hilly areas to reduce unnecessary traffic, loading and unloading of goods on heavy vehicles, passengers in buses, commercial and personal cars and taxis also to minimise road accidents and mis happening during tourist and rainy seasons.
5. Today, man-wildlife conflict has become one of the biggest challenges for the rural inhabitants in the state, the local people cannot take any decision against the loosed assets by the impact of wildlife at local level. Every year several people and cattle are killed by wildlife thus a strong strategy at govt. level need to be develop for existence of rural people inhabiting in isolated rural areas.
7. There are many academic institutions in the state. Whereas, no adequate number of faculties have been appointed. The govt. should take prompt action in this regard as lot of educated mass is either unemployed or not working at appropriate departments as per their field of interest, academic qualification and work experiences. It is an urgent need to give job opportunities to such candidates having wide experiences and academic qualification.
8. It is required to give skill development trainings to the unemployed youth at village level for their livelihood generation.
9. It is required to provide toilets to all poor and vulnerable households, who have not constructed toilets or are not able to construct toilet with their own budget.

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