

Rural Depopulation: Trends, Causes and Consequences in Rural District of Upper Siang, Arunachal Pradesh

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Abstract: To understand the problem of rural depopulation the rural district of Upper Siang, Arunachal Pradesh has been selected for the present study. The study has been conducted focusing mainly on trends, causes and consequences of rural depopulation. Both primary and secondary data have been used to draw a clear picture of the situation. Primary data were collected through households study employing interview method with the help of structured questionnaire and secondary data were extracted from the District Census Handbook of Upper Siang. As such, 22 villages were selected for the study covering 373 households i.e 30.9 per cent of total households of sampled villages. The findings of the study revealed that the majority of the villages undertaken (59.1 per cent) have recorded negative population growth during the period of 2001 and 2011. It has suggested that the main reason for declining population in the remote villages is the large scale rural out-migration. Education and employment opportunities have been found to be the main drivers of migration. Consequently, relatively economically disadvantaged people like elder population, infants, illiterate or less educated, farmers practicing subsistence agriculture are left behind in the villages and the most important human resources of the rural areas have out-migrated from their respective villages. The study further suggested that if this trend continues, it will have severe impacts on the very existence of traditional villages.

Key Words: Depopulation; Out-Migration; Remote Villages; Education; unemployment; Upper Siang, Arunachal Pradesh.

1. INTRODUCTION:

Rural depopulation as we understand is the declining population in rural areas and can be observed in every corner of the world. Many reviewed studies have suggested that depopulation is of a significant concern and threat to the very existence of rural life. It may affect both the physical as well as the socio-economic structures of the areas. Marini and Mooney, in their study in 2006, had emphasized that depopulation has affected rural areas almost exclusively and it may unquestionably be regarded as the most severe threat to local economies, not only because it limits growth opportunities, causes important environmental problems and complicates the provision of public services, but because it may jeopardize the very existence of small towns and villages as inhabited settlements.

Depopulation can be a result of numerous factors like natural disasters, slow or declining growth rate and large scale out migration. No doubt there are several instances where natural calamities causing great loss to mankind have played a significant role in driving people out of their homes, but out-migration is generally considered as the most important cause of depopulation in any region. Consequently, rural depopulation is unquestionably the results of large scale rural out-migration accompanied by slow natural increase. Depopulation today reflects a complex interplay of chronic net out-migration and natural decrease, and it's not only a result of persistent out-migration but also reflects large second-order effects expressed in declining fertility and rising mortality usually associated with population aging (Johnson and Lichter, 2019). Rural out-migration in turn, is again a result of regional inequalities, unequal distribution of resources, political insecurities, poverty and several other socio-economic factors. Hence, people out-migrate from their native places in search of better livelihood opportunities and better living conditions. And the most important determinant of rural depopulation is the rural-urban migration. People from development starved remote villages migrate to more economically attractive urban areas with a hope of improving their life. Depopulation in general may be viewed as a specific case of the rural exodus caused by modern economic growth; because, during the period of industrialization and the subsequent economic growth, cities expanded rapidly, concentrating the location of industry first and then services, which required the recruitment of a large labor force drawn mainly from rural areas, where the increasing substitution of farm machinery for muscle power further encouraged significant rural to urban migration (Pinilla, Ayuda and Saez, 2008).

The present study is an attempt to understand the layout of rural depopulation in Upper Siang district of Arunachal Pradesh. The district is one of the most remote districts of the state with total population of 35,320, out of which 28,780 is rural against 6,540 urban populations (2011 census). Thus, the urban population of the district constitutes only 18.5 per cent of the total population. Though the scenario of rural depopulation in the district undertaken has not yet developed a well established pattern of rural depopulation like those of western countries, few instances of complete abandonment of few sparsely populated villages have been found. And we may say that it is just a beginning. Being in an economically growing country like India, the state of Arunachal Pradesh is also undergoing several economic and social transformations, whose impacts can be felt in the rural district of Upper Siang too. Just like the case of Europe during the period of industrialization, the impacts of urbanization in the region are expressed in a large scale rural out migration thereby causing declining population in the villages.

2. OBJECTIVES OF THE STUDY:

1. To delineate the trends of rural depopulation
2. To Find out the causes of depopulation
3. To analyze the consequences of rural depopulation

2.1 Database:

Both primary and secondary data have been used in the present research work. Primary data have been collected through household studies focusing mainly on migration of people from their native villages and the secondary data have been extracted from the district census handbook, 2001 and 2011.

3. METHODOLOGY:

Interview method was employed with the help of structured questionnaire. Two villages each from 11 Circles of the district have been selected on the basis of their distance from the administrative centers. However, there are some circles which have only 2 or 3 villages under its administration, while others have more than 10 villages. In such cases, one village each has been selected from circles with only 2-3 village and three villages each have been selected from the circles having more than 10 villages under its administration. Further, villages have been selected in such a way that one village is located relatively closer to circle headquarter, while the other is located relatively farther, assuming the circle headquarters as the urban centers of that particular region. In addition, convenient random sampling method was incorporated while selecting the households. And finally, for the data analysis, data has been processed into tabular form and converted into percentage.

Sample:

For the present study, total numbers of 22 villages have been selected from the 11 circles of the district. Sampled households have been selected while considering the total numbers of households given by census of India, 2011 and made sure to cover at least around 30 per cent of total households of each selected village. As such, total numbers of 373 households have been undertaken covering about 30.9 per cent households of the sampled villages.

4. ANALYSIS AND INTERPRETATION:

Trends of Rural Depopulation:

In an attempt to understand the trends of rural depopulation in the area undertaken, comparison of population data of the sampled villages recorded in 2001 and 2011 census has been made, as shown in the table 1. It is evident from the given table that the overall population of the selected villages has declined in the span of ten years by -16.2 per cent growth rate. It is also clear from the data that though some of the villages have recorded positive growth between 2001 and 2011, majority of villages have recorded negative growth. Out of 22 sampled villages, 13 villages (i.e 59.1 per cent) have experienced declining population against 9 villages which have experienced growth in their population. The cause of declining population may be the result of natural decrease as well as rural out-migration. In order to find out these causes, data on rate of migration collected from the surveyed households during the field study has been placed in another column in table 1.

Table 1: Population of villages in the year 2001 and 2011, and their growth rate

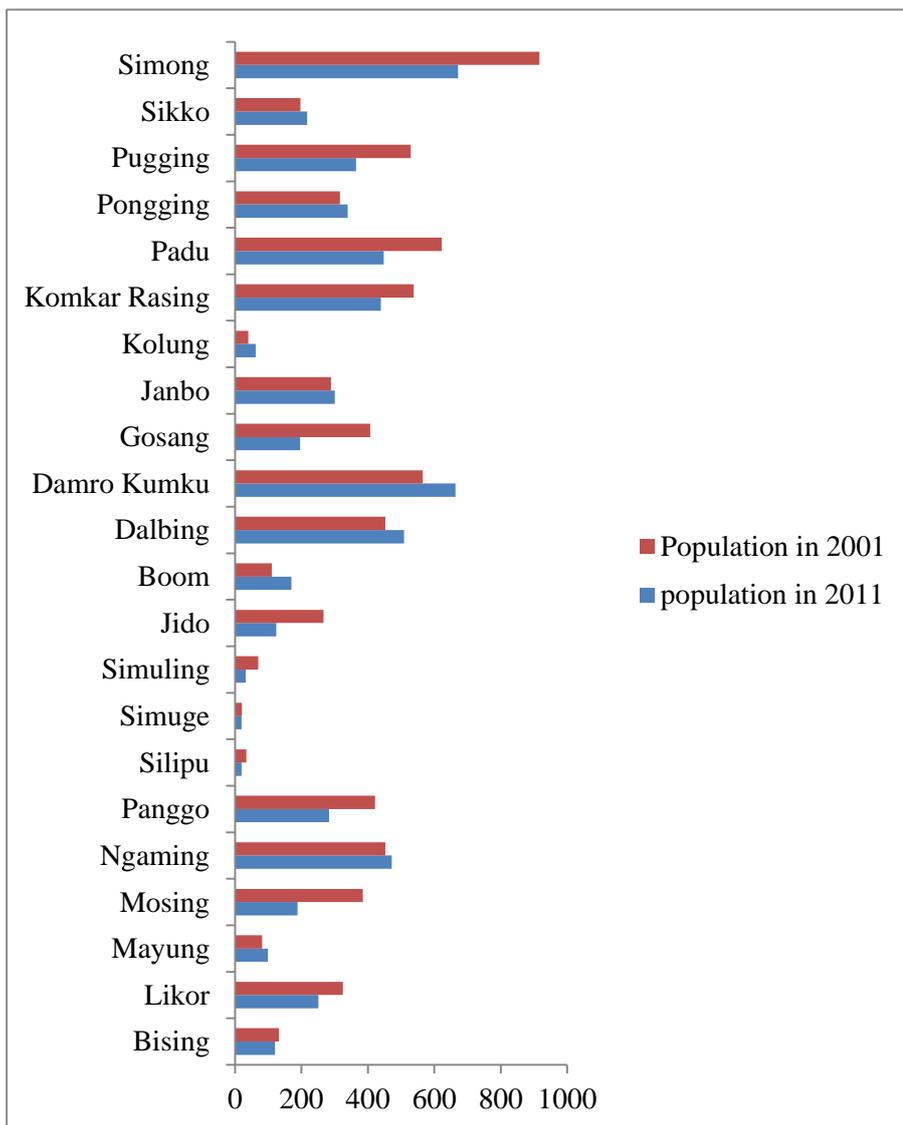
Sl. No.	Villages	Population in 2001	Population in 2011	Growth Rate		Rate of migration (in percentage)
				Negative growth	Positive growth	
1	Bishing	132	121	-0.8	-	63.6
2	Likor	325	251	-2.2	-	42.0
3	Mayung	82	99	-	2.1	55.0
4	Mosing	385	188	-5.1	-	55.8
5	Ngaming	453	472	-	0.4	35.9
6	Panggo	422	283	-3.3	-	69.1
7	Silipu	34	20	-4.1	-	43.5
8	Simuge	21	20	-0.5	-	50.0
9	Simuling	70	32	-5.4	-	72.7
10	Jido	267	124	-5.3	-	40.6
11	Boom	111	170	-	5.3	39.2
12	Dalbing	453	509	-	1.2	23.9
13	Damro	565	664	-	1.8	42.2
14	Gosang	407	196	-5.2	-	53.4
15	Janbo	289	301	-	0.4	34.9
16	Kolung	40	82	-	10.5	13.3
17	Komkar	538	439	-1.8	-	51.3
18	Padu	622	448	-2.8	-	52.7
19	Pongging	316	339	-	0.7	37.0
20	Pugging	529	365	-3.1	-	24.5
21	Sikko	197	217	-	1.01	14.7
22	Simong	917	672	-2.7	-	50.6
Total		7,175	6,012	No. of villages=13	No. of villages=9	

Source: Census of India 2001 and 2011, District Census Handbook, Upper Siang, Primary data.

Note: - Rate of migration is based on primary data

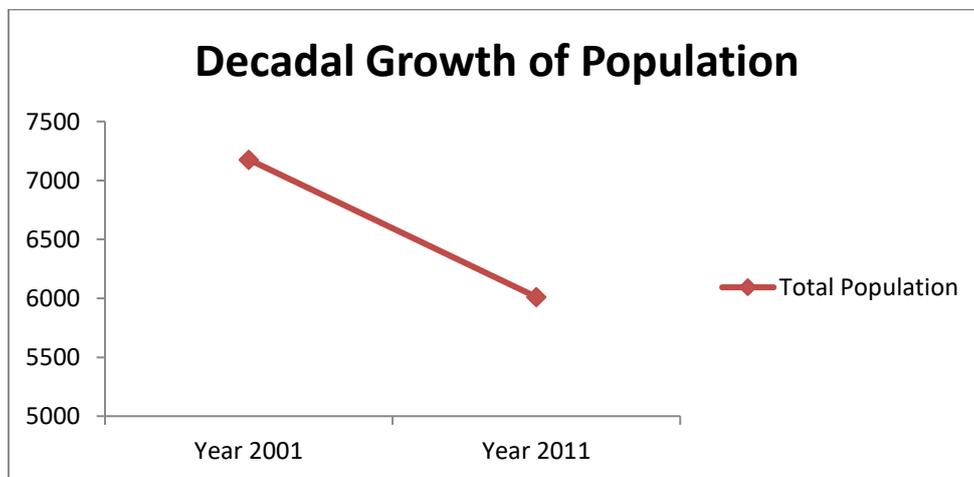
While observing the figures given in the above table, it is visible that rate of migration of the sampled villages correspond to their growth rate. As such, villages which have witnessed negative growth in their population during the period of 2001 and 2011 have higher rate of migration than the villages with positive growth. Out of 13 villages with negative growth, only one village has less than 40 per cent rate of migration and the rest recorded more than 40 per cent rate of migration (Table 1). Similarly, out of 9 villages having a positive growth rate, only two villages have more than 40 per cent rate of migration and the rest have experienced less than 40 per cent rate. Therefore, we can conclude that the declining rural population of the region is mainly due to the rural out-migration.

Figure 1: Total population of villages in the census year of 2001 and 2011



Source: District Census Handbook, Upper Siang District, 2001 and 2011

Figure 2: Decadal population growth of sampled villages



Source: District Census Handbook, Upper Siang District, 2001 and 2011

Causes of Rural out-migration:

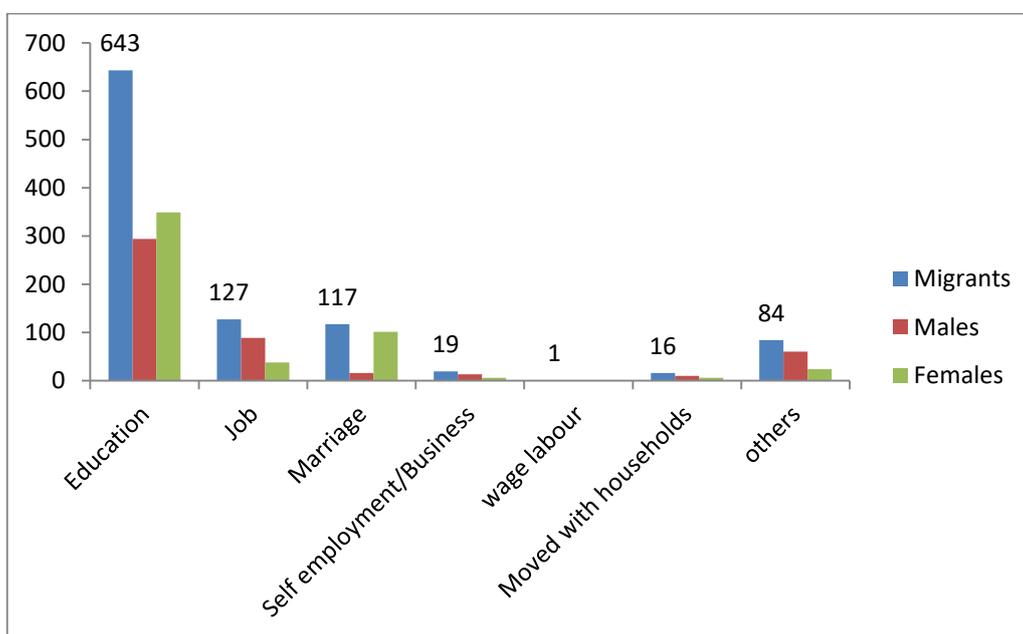
Migration is considered to be an integral strategy of the poorer households to cope with poverty in the developing countries. It is also a resultant effect of modernization and urbanization, where people migrate to other places for the sake of improving their living. Such is the case in the area undertaken for present study too. The study has covered total number of 2,270 populations from the sampled households, out of which 1,143 are made up by male population and 1127 by females. Out of 2,270 populations, 1007 are presently not residing at their respective native places and have migrated to other places mostly urban areas of the country. The numbers of migrants constitute 44.4 per cent of the sampled total population and female migrants have found to be higher than males, at 52 per cent and 48 per cent respectively. The reasons for migration are several, but the main reasons have been displayed in the following table 2.

Table 2: Reasons for out-migration

Reasons	Migrants	Males	Females	Percentage		
				Persons	Males	Females
Education	643	294	349	63.9	45.7	54.3
Employment	127	89	38	12.6	70.1	29.9
Marriage	117	16	101	11.6	13.7	86.3
Self employment/business	19	13	6	1.9	68.4	31.6
wage labour	1	1	0	.1	100	0
Moved with households	16	10	6	1.6	62.5	37.5
others	84	60	24	8.3	71.4	28.6
Total	1007	483	524			

Source: Primary Data

Figure 3: Graphical representation of reasons for migration



Source: Primary Data

Education has found to be the most important determinants of migration in the region constituting 63.9 per cent of the total migrants. Next to education, employment stand as second most important reasons comprising 12.6 per cent, followed by marriage with 11.6 per cent, self employment with 1.9, moved with households with 1.6 and rest are made up by other unclassified reasons. It has observed that female migrants are higher in numbers than males in both education and marriage. However, in other categories, male numbers dominate the females. It is also visible from the given figure that very few numbers of female are engaged in formal job or business in compare to males. Their migrations other than education are commenced mostly by marriage and they are more likely to engage in non formal activities like home making, farming, etc.

Consequences of Rural Depopulation:

Rural depopulation also termed as chronic loss of population is associated with several demographic well as economic impacts. Rural depopulation may be understood as a process affecting regions where the rural exodus outstripped natural growth, thereby reducing the total number of inhabitants to a critical level, particularly in terms of population density and aging of demographic structures (Pinilla et al 2008). Declining population and out migration also results in reduced demand for goods and services, diminished job opportunities and thus more out migration (Cantrell, 2005). In order to understand the consequences of rural depopulation in the area undertaken, the study has been conducted focusing mainly on demographic impacts of the rural out migration in the region. For this purpose, demographic structures of the people who are left behind in the villages have been considered, as depicted in the following table and figures.

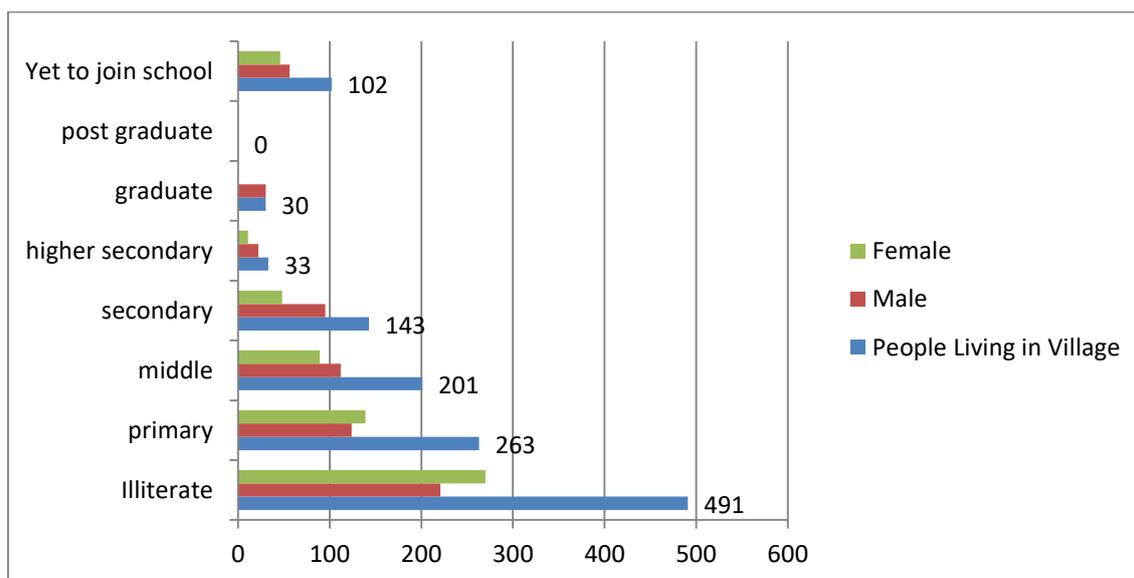
Table 3: Age-Sex structures of the people living in the villages

Age Group	People living in village	Males	Females	Percentage		
				Persons	Males	Females
0-5	111	62	49	8.8	55.9	44.1
6-15	122	66	56	9.6	54.1	45.9
16-40	445	225	220	35.2	50.6	49.4
41-65	386	206	180	30.6	53.4	46.6
65+	199	101	98	15.8	50.8	49.2
Total	1263	660	603			

Source: Primary Data

It has been noticed that majority of village population is composed of young population of working age as depicted by table 3. Age group of 16-40 constitute the highest number with 35.2 per cent of the total population living in the villages, which is followed by age group of 41-65 with 30.6 per cent, 65+ with 15.8, 6-15 with 9.6 and lowest is comprised of age group 0-5 with 8.8 per cent of the population. Well it is a good sign that the villages are still filled with young population, unlike the other depopulated areas of the world. However, the reasons behind the considerably good numbers of young people in the villages could be results of not so positive factors. In order to understand these factors, we need to compare table 3 with the figure 4.

Figure 4: Educational qualifications of the people living in the villages

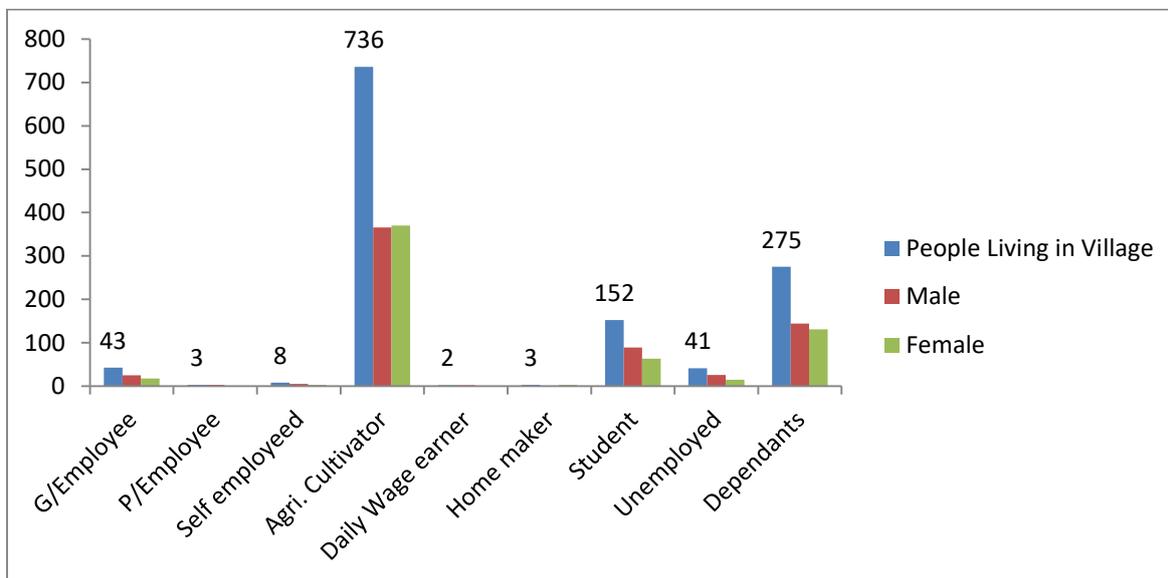


Source: Primary Data

Figure 4 clearly illustrate that literacy rate of the people living in the villages is still very low, where illiterate population (including infants) constitute 47 per cent of the total population. Among the literates, again the people with higher education degree such as graduate or higher secondary are very less comprising only 2.4 and 2.6 per cent

respectively. And the rest are at matric level or below. These low levels of education of the people may be the reasons they are still living in villages, because to have a better employment opportunity, one needs to have a good educational qualification. Also, level of education is generally associated with other skills, so low levels of education means lesser capabilities of income generating activities among the people. This in turn, affects the rural economy even if they have considerable numbers of young people in the villages.

Figure 5: Occupations of the people living in the villages



Source: Primary Data

Agricultural cultivators form the largest numbers of the rural population accounting about 58.3 per cent of the total population. People engaging in non-farm activities like govt. job, business or private job are very meager in numbers comprising 3.4, .6 and .2 per cent respectively. High dependency of population has also been observed (figure 5) where dependents, students and unemployed people constitute the 37.3 per cent of the population. It is true that agriculture is the backbone of rural economy and good numbers of people engaging in agriculture is a good sign, but the nature of agriculture in the surveyed areas is highly subsistence that a very less surplus is produced or no surplus at all. Therefore, we can say that relatively economically disadvantageous people are left behind in the villages and the main human resources of the rural areas have out-migrated from their respective villages.

5. DISCUSSION AND CONCLUSION:

Declining rural population is a trending phenomenon which had been witnessed in the state of Arunachal Pradesh. With the advent of urbanization though slower, eventual flow of rural population towards towns and cities have become a signature demographic phenomenon in the state. Consequently, this large scale rural-urban migration has left several remote villages in critical situations of very low demographic density. In order to understand the general layout of rural depopulation, the present study has been conducted in the rural district of Upper Siang, Arunachal Pradesh where total numbers of 22 villages have been studied. The region is predominantly hilly areas with rugged topography and is highly underdeveloped. Agriculture is the main economic activities which is chiefly subsistence in nature and dominated by terrace Cultivation and dry farming. It is also highly characterized by small land holdings and low production. Crop diversity is very low with very little horticultural activities, since more focus is given on staple food like rice and vegetables which is mostly cultivated for self consumption. Remote areas are devoid of infrastructural development, lacking in primary health centers, educational facilities, good supply of electricity and drinking water. Conditions of roads are also very poor; in fact, many villages are still not connected by road.

Other than attraction of urban centers, the above cited conditions of the region are other important commencing factor of rural out migration in the region. As a result, the study has revealed that the majority of villages have experienced population decline (based on census report of 2001 and 2011). It has also suggested that the main reason for the declining population of the surveyed villages is due to high rural out-migration, because those villages which have witnessed declining population during the period of 2001 and 2011, have relatively higher rate of migration than the villages with positive growth. The findings also revealed that the rate of migration of sampled villages are highly

uneven where some of the villages have scored more than 70 per cent rate of migration while others have reported mere 20 per cent rate of migration. This in turn is the result of connectivity status and distance of villages from the urban centers. Isolated villages having a poor connectivity or not yet connected by road have reported higher rate of migration than those with better road connection and located closer to the towns.

Education and employment have been found to be the major drivers of rural-urban migration since the rural areas are devoid of institutional and infrastructural facilities. In fact, education is the most important cause of migration; because the initial step taken by every migrant has been for further education as majority of villages have school of primary level only. As such, migrants are mostly composed of young and educated people. Once people out migrate, they rarely return to their native villages thereby causing significant demographic change in the source region. Since the migration is mostly education oriented affairs, large number of illiterate people has been noticed to be living in villages and people with higher degree(graduate) are very less in numbers. Consequently, larger portion of population living in villages are either agricultural cultivator or dependents. Very few people (about 4.3 per cent) are engaged in non-farm activities like Govt. service, Private Job or self employed. The low level of education, high dependency rate and subsistent agriculture as main occupation of the people living in villages are serious threat to rural economy, which may further aggravate the already existing rural out-migration of the region. Due to chronic out-migration, some instances of complete abandonment of sparsely populated remote villages have been observed and one village is on the verge of complete depopulation in which only one house with three person are found to be living in village, and the rest of empty houses are abandoned and shut. If this trend continues, it will have severe impacts on the very existence of traditional villages.

Various steps to counter out-migration can be taken. Since the higher education form the most important reason of migration, development of higher educational institution may be an important device to restrict youth migration for education. Infrastructural development like better road connectivity, healthcare facilities, availability of electricity, etc. could be another significant step that may helps in curbing the rate of out-migration. In addition, diversification of agriculture, market oriented farming, use of modern technology in agriculture, may increase the production and thereby enhancing the generation of income.

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