

Livelihood and Adaptability of people living in the remote villages of temperate region of Jammu and Kashmir : Research carried in the four villages of tehsil Bhaderwah of district Doda

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Abstract: This study aims to depict the lifestyle of people living in remote villages of the Bhaderwah where there is huge snowfall in winter and area is prone to landslide. The people of these villages does not have proper interconnectivity of transport and communication. They are deprived of various benefits of governmental schemes like Pradhan Mantri Awas Yojna, Mahatma Gandhi National Rural Employment Guarantee Act, Public Distribution System, National Rural Health Mission etc. The purpose of this research is to portray the hardship faced by the people and how they earn their livelihood and cope with various problem emerging in day to day life.

OBJECTIVES UNDER THIS STUDY

After studying all the literature and interpreting the statement of problem, following objectives are selected as:

- To assess the livelihood of people in the concerned area.
- To determine the various hindrances impacting the livelihood of people .
- To generate knowledge on impacts driving forces of vulnerability and adaptation mechanism.
- To gather information about their adaptation and resilience.

Data base

The data in the present study is primary data collected through field survey done in selected villages of the Bhaderwah. Different variables regarding the livelihood and adaptation are also considered in the field survey. Information is collected through personal interviews of the residents based on questionnaire.

Methodology

To fulfil the aim and objectives of the study definite methodology has to be followed. It is divided into three parts:

Pre field work: This involves the library work to get the information on physiology, climate soil and hydrology of the study area.

Empirical observation: Empirical observations are made to judge the conditions and behavior of people.

Quantitative methods: The methods like percentage and average to calculate data.

INTRODUCTION ABOUT STUDY AREA

Cradling in the midst of almighty Himalayas, often known as “Chota Kashmir”, and in the south-western side is situated most important Hindu pilgrimage “Kailash Kund”, there lie a beautiful and picturesque town named “Bhaderwah”. It affords beautiful landscape vistas with mesmerizing natural beauty. It is fortified by sky touching mountain peaks which remain grey for most of the year. Bhaderwah town is the tehsil of Doda district in Jammu and Kashmir.

Location: The valley of Bhaderwah located between 32°5′ N to 34°15′ N latitude and 74°30′ E to 75°40′ E longitude. The altitude of Bhaderwah is 1613m. This area falls under the Himalayan range of Pirpanjal.

Physiography: The study area lies in Middle Himalayas. This comprises the mountain tract locally known as Pahar. This area is known for its scenic beauty. The Pirpanjal representing the Mid Himalayan ranges consist of lofty mountains. For e.g. Kailashkund. They vary in elevation range from 1500 meter to 3500 meter. This region is famous for the dotted valleys like Jai valley, Bhaderwah valley etc. This whole region is drained by river Chenab and its tributaries.

Climate: The climate is warm and temperate. It receives significant rainfall even in the driest month. The Koppen-Geiger classification is Cfa. The average temperature is 16.3°C and average rainfall is 1206mm. January is the coldest and November is the driest month. Due to physical features, the climate is variable and varies from subtropical to temperate. The sky remains clear throughout the day with some hazy appearance.

Natural vegetation: The study area is known for its forests and has a great diversity in flora, ranging from deciduous forests and evergreen conifers to alpine pastures. Forests provide habitat to a variety of animal species like Snow leopard, Musk deer, Brown bear, Hangul and Neel etc. In a systematic study the vegetation zone of the area may be classified into following types:

Subtropical forest: These forests are found between 900-1500 m altitude. Important trees are deodar, pine and fir.

Temperate forests: Temperate forests are dominated by coniferous variety of trees like deodar, pine, spruce, fir, birch etc. These are evergreen trees which can stand by in harsh climatic conditions. These forests are found at an altitude of 1500-3350 m.

Alpine vegetation: This zone lies in 3350-4570 m and experiences very cold climatic conditions. The low temperature supports shrubs like birch and juniper. This alpine zone comprises lush green pastures and meadows which are called Margs. These are used by the Gujjars and Bakkarwals to graze their livestock. They have many productive, protective and bio-aesthetic functions. E.g. Datura, kuth, Hyoscyamus, Podophyllum, Artemisia etc.

Drainage: In Bhaderwah, Neeruis the main river and its tributaries are Haloonnallah, Haliannallah, Kalgandhinallah, Chakkanallah and chinotenallah. All the streams have their source from "Ashapati" and "Kailash" glaciers. The river Neeru joins Chenab near Pull Doda. Another nallah named Bunkund joins Neeruriver at Bhala block that feeds the village khillenitop.

Geology: In the Bhaderwah- bhallesa basin shale, slate, phyllite, quartzite, limestone, massive limestone with shale partings and sandstone comprises the Triassic rocks.

Parameters depicting the livelihood and adaptability of peoples of Bhaderwah Tehsil

The various inferences taken are observed during the field survey which reveal the livelihood and adaptability conditions of the people of the area which are shown by selected indicators. These indicators help to understand about the mode of living of the people. The various problems faced by them and their adaptation to the problems. In Bhaderwah tehsil, four villages were selected for field investigation on the basis of their location from the Bhaderwah town in cardinal direction. Villages are Thanala, Chinta, Sungli and Khellani. In order to know the various means of livelihood of the people the various parameters are taken like agriculture, horticulture, apiculture, poultry, cattle rearing. The adaptability is shown against heavy snowfall, landslide, and droughts etc.

Agriculture

The agricultural status of the area is depicted through people with proportion of land, the crops grown, role of agricultural department in boosting agriculture and whether the production was sufficient for consumption or not.

Table no. 1.1 Percentage of People with their own land

S.NO	VILLAGE	Have	Not have
1	Thanala	90.9	9.1
2	Sungli	77.7	22.3
3	Chinta	68.75	31.25

4	Khellani	76.19	23.81
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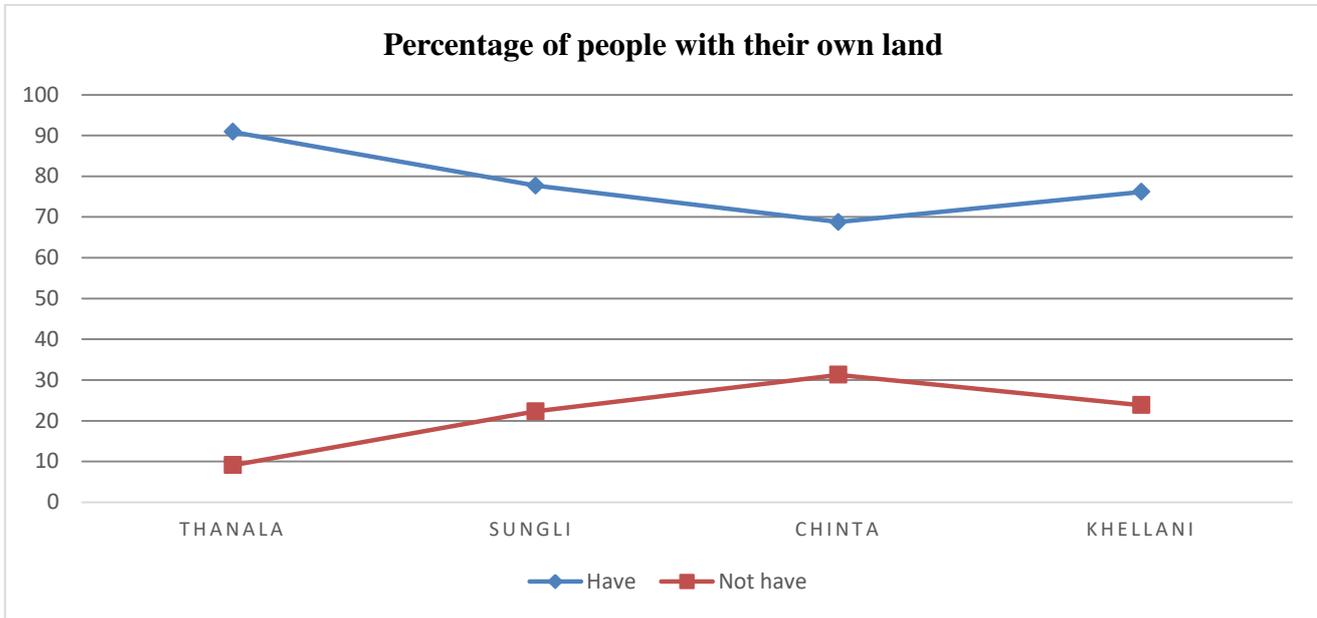


Chart no. 1.1

Intertpretation

From the table we have observed that most of the villager in the Bhaderwah tehsil have their own land for agriculture and there is very less leasing of land. The maximum proportion of people with their own land is in Thanala which is 90.9% however the land here is infertile. The minimum proportion of people with their own land are in Chinta which is 68.75. The reason behind this is the occupancy of land by army cantonment for which they were given compensation as per the area. The highest number of people and the lowest number with their own land can also be seen from the line graph.

Table no 1.2 Land holding by famers in hectares

S.NO	VILLAGE	LAND (hectare)	HOLDING	FARMERS
1	Thanala	0—1		MARGINAL
2	Sungli	1—2		SMALL
3	Chinta	0—1		MARGINAL
4	Khellani	2—4		MEDIUM

Intertpretation

From the table we have observed that the farmer in villages of tehsil Bhaderwah are mainly marginal having only one to two hectare of land for cultivation. The classification shows that in Khellani farmer are medium with 2-4 hecare of land for agriculture while in Sungli it is small with only 1-2 hectare of land holding. In Chinta and Thanala the farmers are marginal and have very less land for cultivation. Moreover the land is not plain and is suitable for contour farming only.

Table no.1.3 Major crops grown in the villages

S.NO	VILLAGE	RICE	WHEAT	MAIZE	PULSES AND OILSEEDS
1	Thanala	0	9.09	72.7	9.09
2	Sungli	33.3	11.11	38.8	11.11
3	Chinta	18.75	12.5	50	18.75
4	Khellani	47.61	9.54	28.57	14.28

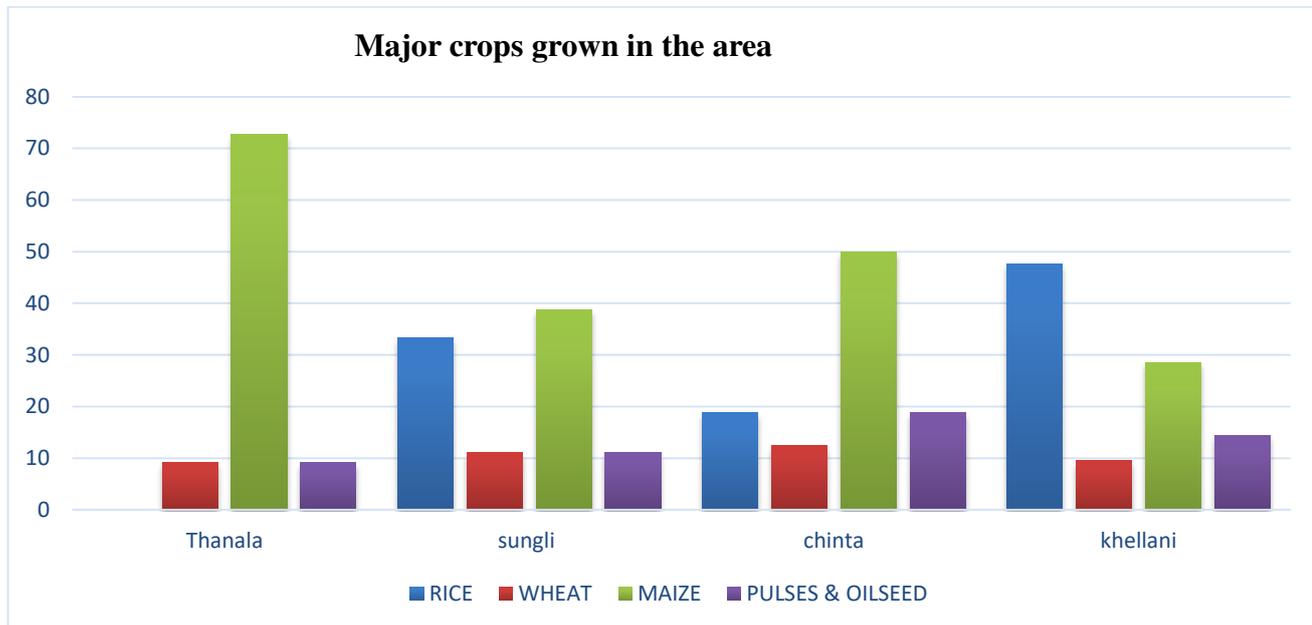


Chart no.1.2

Intertpretation

As per the data collected from various household regarding the major crop grown in the area it is observed that rice, wheat and maize are the staple crop of people of the area. In Thanala the cultivation of rice is not done due to harsh weather condition and maize is only grown crop with some oilseed in minor quantity. In Khellani and Sungli wheat, rice and maize are grown due to favourable climatic conditions available for their growth. The maximum area under rice is in khellani due to suitable land available for the cultivation.

Table no. 1.4 Crop sufficient for consumption and reduction in land area for agriculture over the last 5 years in percentage

S.NO.	VILLAGE	CROP SUFFICIENT FOR CONSUMPTION		REDUCTION IN LAND OVER LAST 5 YEARS	
		AGREE	DISAGREE	YES	NO
1	Thanala	36.36	63.63	27.2	72.8
2	sungli	61.11	38.8	55.5	44.5
3	Chinta	37.5	62.5	87.5	12.5
4	Khellani	61.9	38.1	38.09	61.91

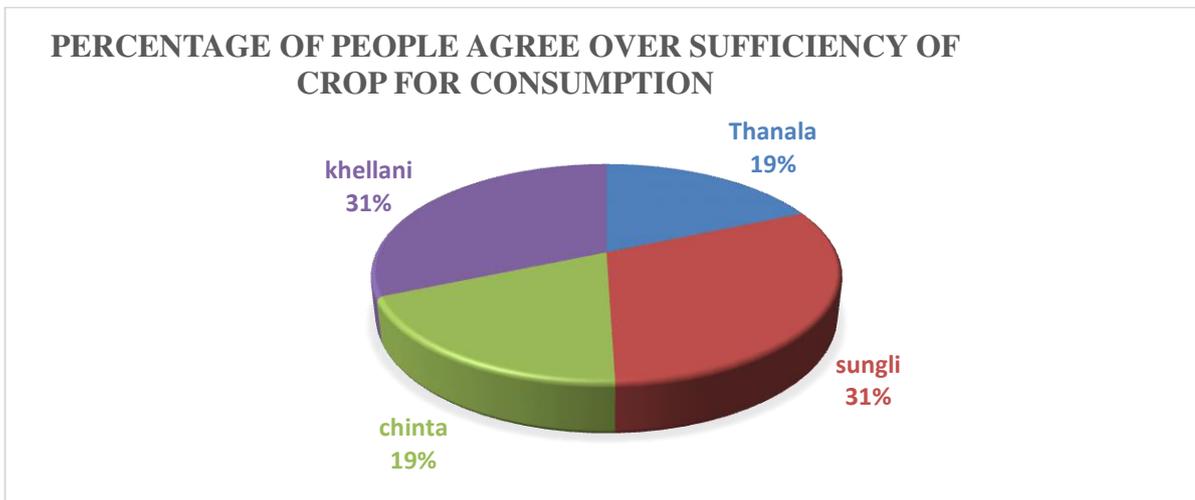


Chart no 1.3

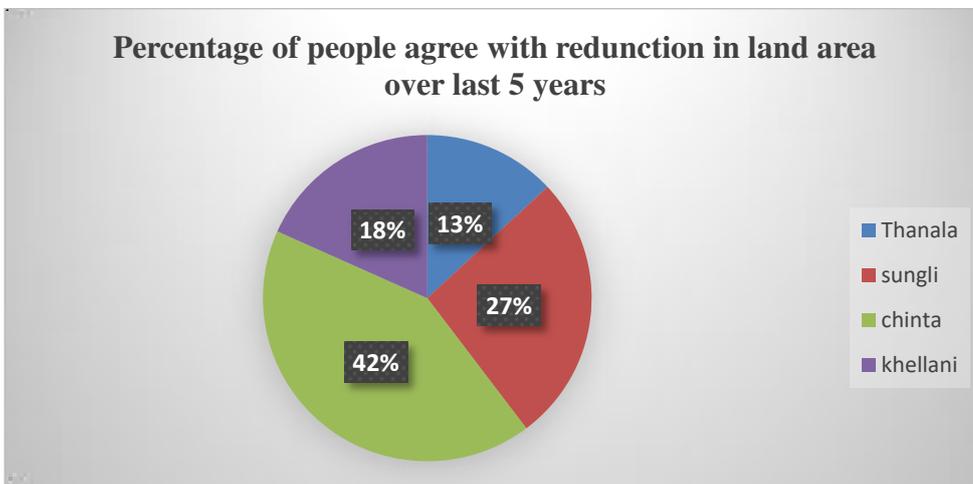


Chart no 1.4

Intertpretation

In Bhaderwah tehsil it is observed that the production of crop is not sufficient for consumption and people are not very much dependent on the agriculture only. In Khellani and Sungli majority of the people are agreed with the production sufficient for the consumption while in Thanala the people said that the production is insufficient and have to rely on public distribution system. Moreover with passage of time there is reduction in land cover over the past 5 years .In Sungli and Chinta there is lot of reduction in land area .The reason behind it is increasing population, area lost to army cantonment in Chinta and area lost under road construction.

Table no. 1.5 Role of agricultural department in boosting agriculture in percentage

S.NO	VILLAGE	SATISFIED	UNSATISFIED
1	Thanala	0	100
2	sungli	27.7	72.3
3	chinta	37.5	62.5
4	khellani	19.04	80.96

Interpretation

The role of agricultural department is very less in making people aware about various methods of practicing agriculture. Farmer are unaware about high yielding variety of seeds. The reason behind this is the backwardness of the area.

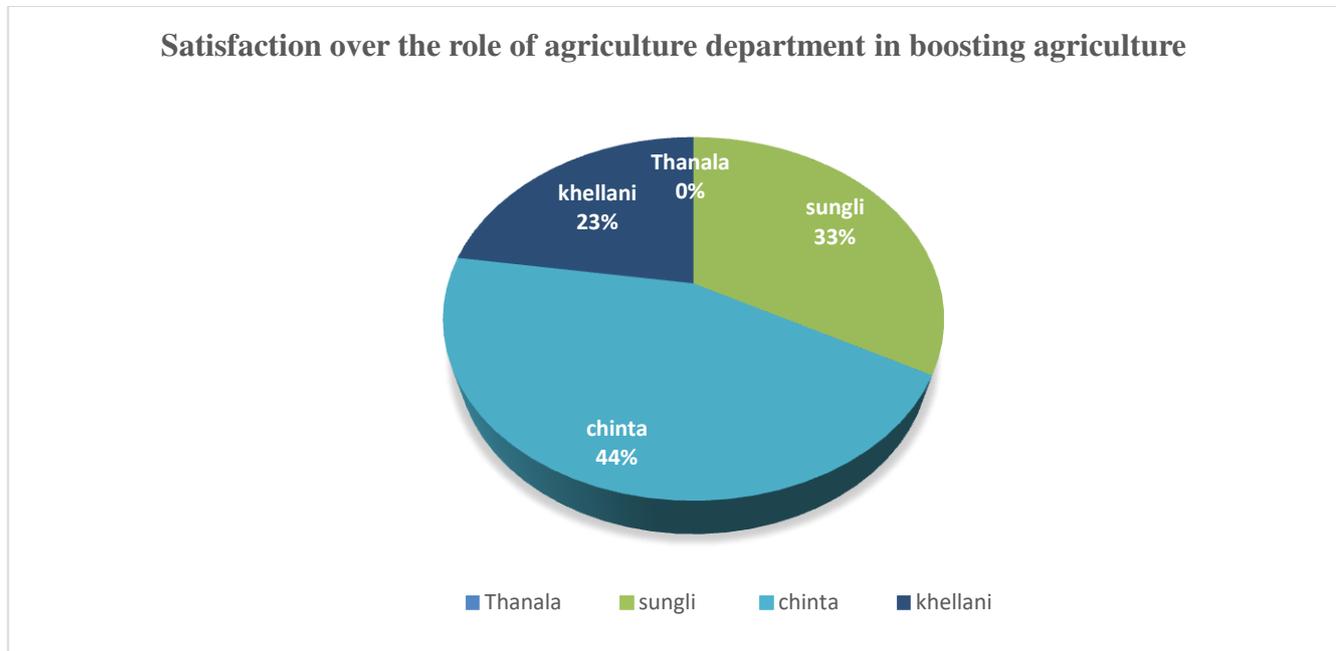


Chart no. 1.5

Horticulture and Apiculture

The share of horticulture and apiculture as a source of livelihood for people in various villages of Bhaderwah and the role respective department in making people of these villages aware about these sectors as a source of livelihood.

Table 2.1 Share of horticulture and apiculture as a source of livelihood in percentage

S.NO	VILLAGE	HORTICULTURE	APICULTURE
1	Thanala	54.5	45.5
2	sungli	66.6	33.4
3	Chinta	87.5	12.5
4	Khellani	80.9	19.1

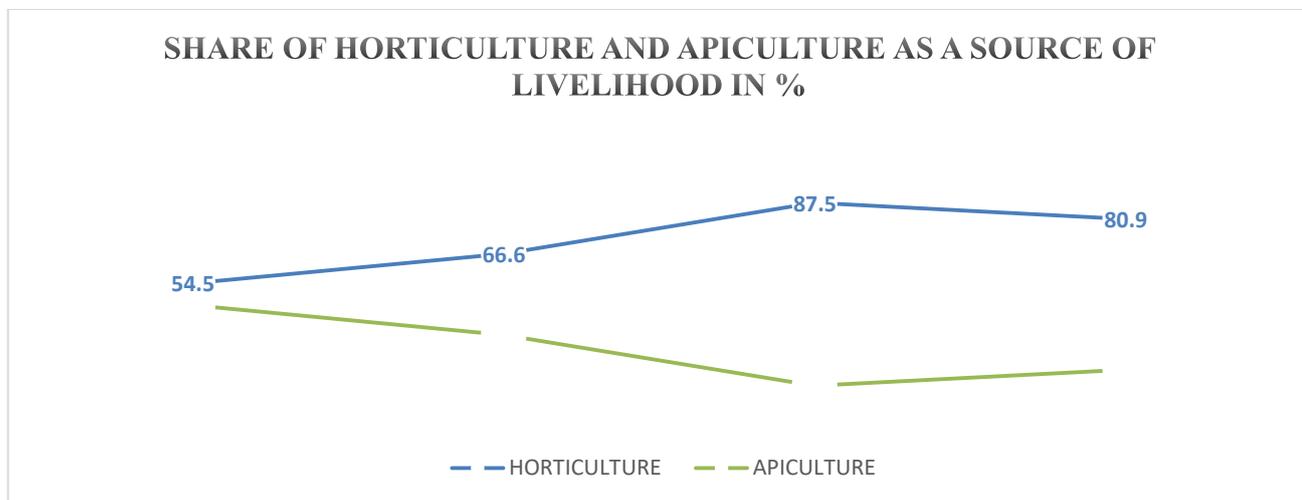


Chart 2.1

Intertpretation

In Bhaderwah tehsil the villages being hilly and backward mixed type of farming is practiced. The people have to rely on horticulture and apiculture. Horticulture is one of the chief source of income of the area. The major fruits grown are apple, peach, pear and apricot. The villages of Khellani and Chinta has higher horticulture and less share in apiculture as source of livelihood for them while in Thanala the horticulture, apiculture are in proportion. Here the fruits like apple and pear are very less grown due to harsh climatic condition.

Table no 2.2 Role of horticulture and apiculture department in awaring people about the development of these sectors

S.NO	VILLAGE	RESPONDENT	SATISFIED %	UNSATISFIED %
1	Thanala	11	0	100
2	sungli	18	50	50
3	chinta	16	25	75
4	khellani	21	23.8	76.2

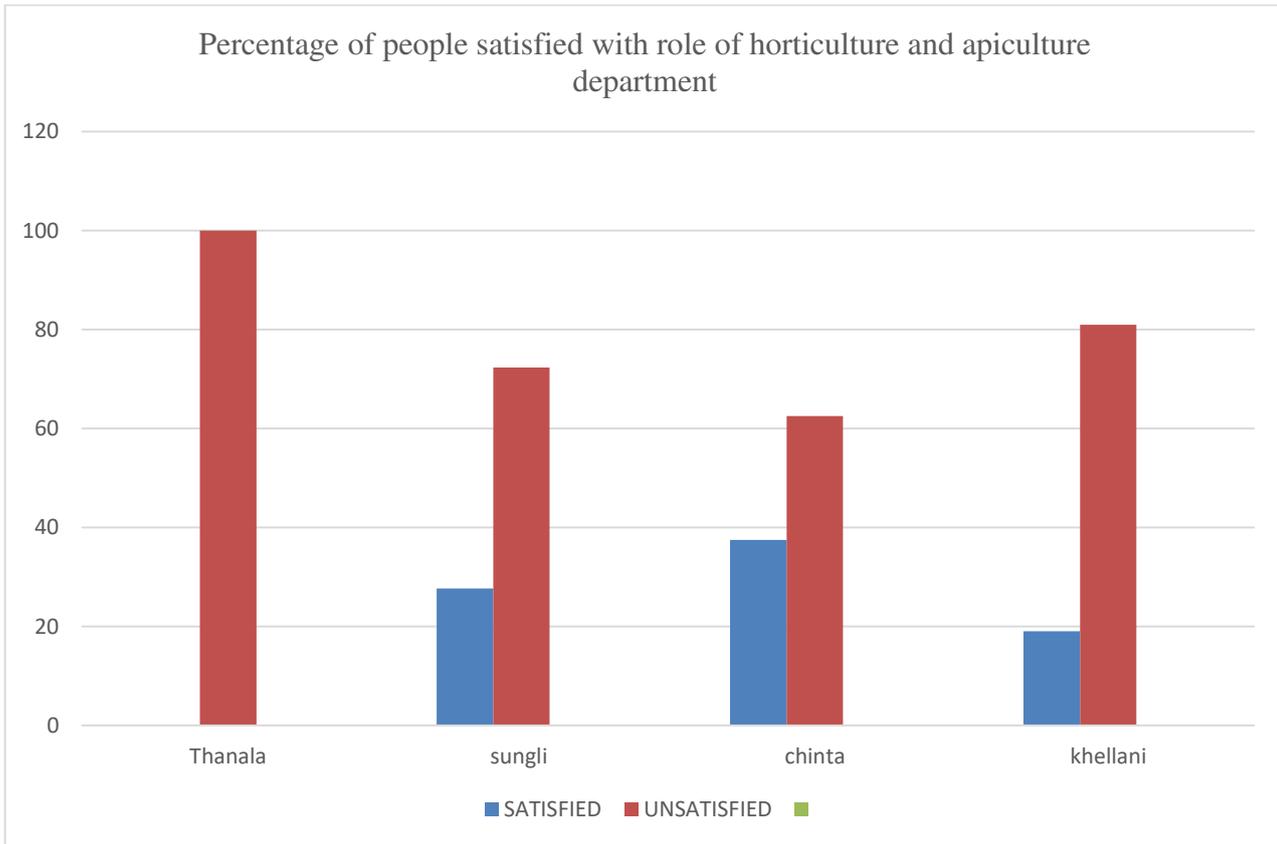


Chart no. 2.2

Intertpretation

The role of horticulture and apiculture department inboosting their production is very less in Thanala and Khellani. The reason for this is the backwardness of the villages Moreover the people of Thanalawondered that even such department exist..The people are unsatisfied with the roles of these department and these department exist merely on paper without their role in these areas.

Poultry and Cattle rearing

Both poultry and cattle rearing form an important source of livelihood for the people of these villages which are hilly and backward. The status of these two sectors are shown through the tables and the graph depicted below.

Table n.o 2.3 Percentage of population engaged in poultry and cattle rearing

S.NO	VILLAGE	POULTRY	CATTLE REARING	BOTH
1	Thanala	27.2	18.18	54.5
2	sungli	11.11	61.1	61.1
3	chinta	25	37.5	37.5
4	khellani	19.04	37.5	38.09

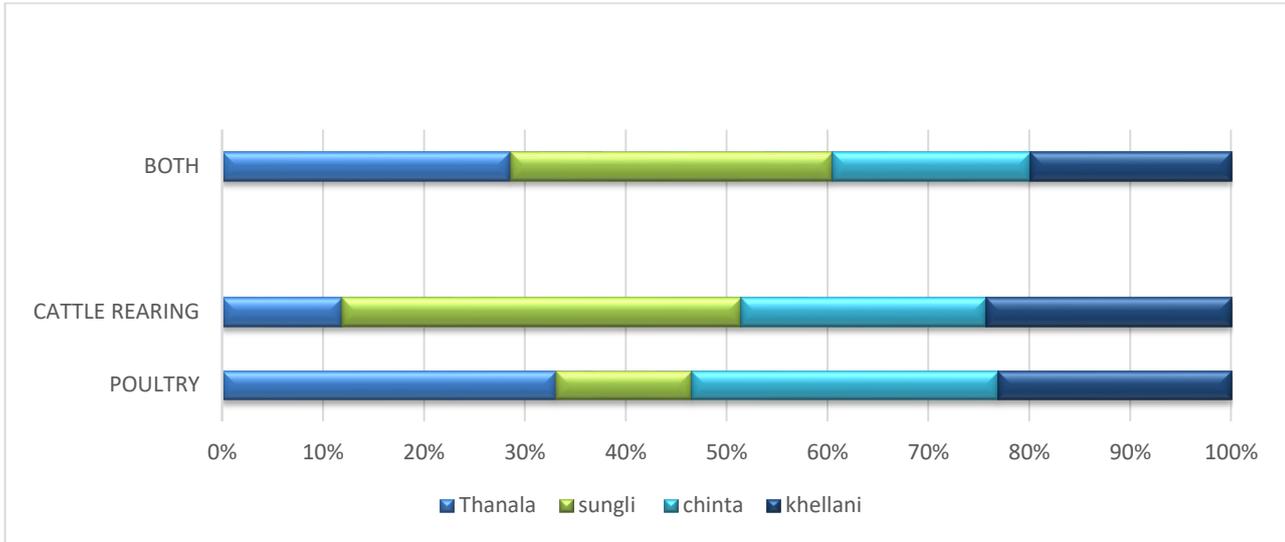


Chart no 2.3

Intertpretation

Poultry and cattle rearing is also done in these villages. From the table it is observed that majority of people are involved in these two sectors. These two sectors forms important source of livelihood of the area. The cattle are reared as the area is endowed with beautiful pastures. The cattle reared are goat, ship and cow. However this occupation is not pursued on large scale but mainly for their day to day source of food and wool.

Himalayan herbs

The area being part of lesser Himalayas are bestowed with various useful herbs which are used for consumption as well as used in making medicines. Due to their use in pharmaceutical industries these are in demand and are costly thus help them in making their livelihood .However these are used in meagre quantity as too much exploitation of these herbs is illegal. The Himalayan herbs available in these area are also important source of income to these people. The major herbs are Morchella,Nagchatri and Cumin. These herbs grow in the month of May, June and July. Morchella is readily recognized of all ediblemushroom and is costly.Cumin is used in making spices.

Adaptability

The adaptability of people of these villages to climatic conditions like heavy snow fall, landslides poses various problems in transport , communication ,health issue ,food and financial problems.

Table no 4.1 Intensity of winters in Bhaderwah

S.NO	VILLAGE	SEVERE	MODERATE	MILD
1	Thanala	Severe		
2	Sungli		Moderate	
3	Chinta		Moderate	
4	Khellani		Moderate	

Intertpretation

The intensity of winters in villages of Bhaderwahranges from moderate to severe. The precipitation is mainly in the form of rain, snowfall and hailstorm. The village of Thanala have precipitation mainly in the form of snowfall in the winter months. The village receives heavy snowfall in winters. The area remain disconnected with the city of Bhaderwah due to heavy snow fall. Thanala is one of the remotest village of the area .However the village gained attention due to its backwardness and is now having road connectivity. The villages of Sungli, Chinta and Khellani have moderate intensity of winter.

Table no 4.2 Effect of snowfall on transport,communication and on income of the people in percentage

S.NO	VILLAGE	TRANSPORT	COMMUNICATION	FINANCE	HEALTH
1	Thanala	36.3	27.2	90.9	27.2
2	sungli	33.3	27.7	22.2	33.3
3	chinta	37.5	25	12.25	25
4	Khellani	38.09	19.04	19.04	19.4

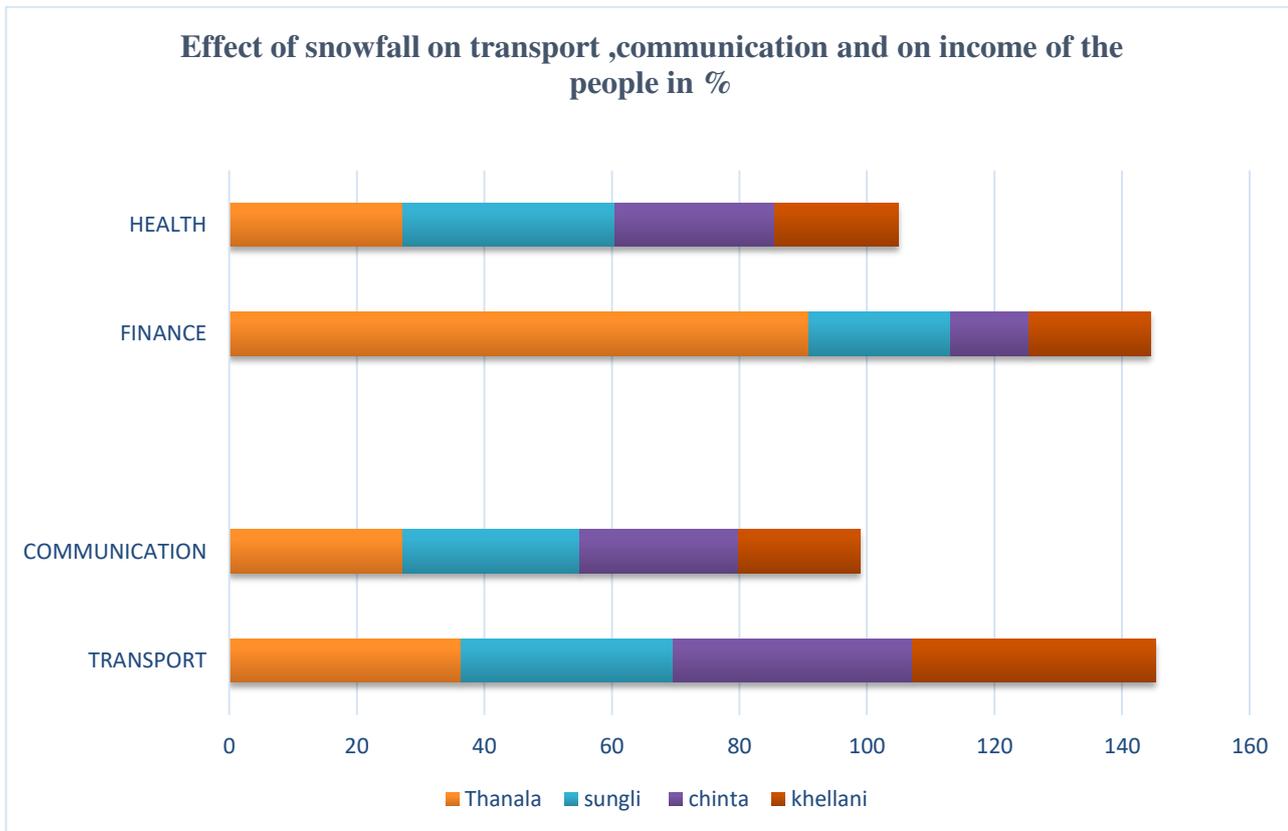


Chart no 4.1

Intertpretation

The effect of snowfall and other threats posed by it like landslides,avalanches have a profound effect on the life of the people of the area. The people of the area have to face the problem related to transport,communication,health and other financial problems. The transport get retarded due to blockade of

road and landslides and communication is disrupted. These two have huge impact on health issues. The patients suffering from some serious illness remain a victim due to poor transport and communication. Moreover the source of livelihood like availability of work is very less for people in winter due to which seasonal migration of people can be noticed especially in the young people towards Jammu in search of work.

Table no 4.3 Relief provided by the government to the people

S.NO	VILLAGE	FOOD	HEALTH	PERCENTAGE
1	Thanala	63.6	36.4	100
2	sungli	56.25	53.75	100
3	chinta	62.5	37.5	100
4	Khellani	52.38	47.2	100

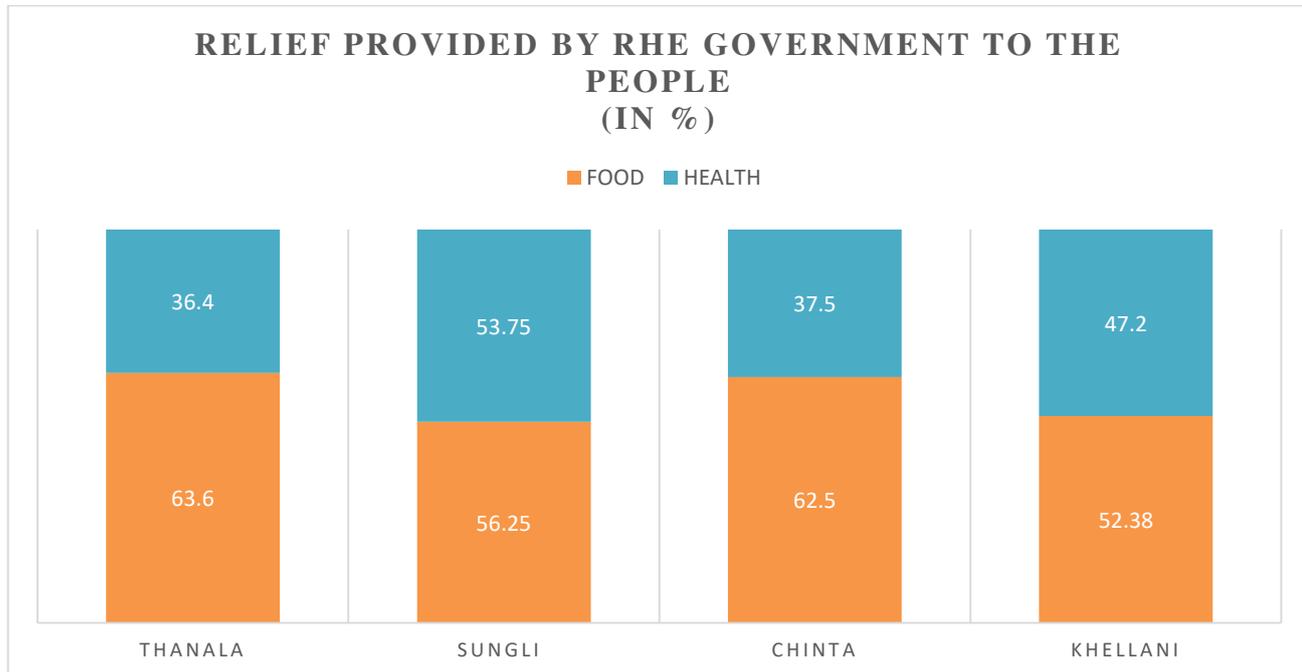


Chart no 4.2

Intertpretation

In winters a number of problems are posed due to lack of transport and communication which in turn affect the life of the people. The government, however, provide relief in the form of distributing food grains free of cost for winter months to the people falling under below poverty line. However relief provided is not sufficient for them.

SUGGESTIONS

From the above study, we came to know that the livelihood of the people is mainly from agriculture and Horticulture. The crop yield is not adequate to meet their requirement. The poor yield is due to primitive agricultural practices, adequate irrigation, fertilizer and unawareness among the farmers about high yielding seed, advanced agricultural techniques. Moreover the production can be increased if proper consultation can be taken from the agriculture department regarding the cultivation of growing only those crops which are suitable under the prevalent climatic condition.

CONCLUSION

Through the field survey, we have traced out the means of livelihood and adaptation of the people to different problems faced by them in their day to day life. The field investigation concluded that village Thanala is more vulnerable and backward village which receive huge snowfall in winter and road connectivity also get disrupted for months which add to the miseries of people. This village needs more attention than other villages. Khellani and Chinta have sufficient resources with sufficient means of livelihood. It has been found that people are migrating toward urban area due to less number of opportunities in their villages. Government should take various initiatives for the development of these remote villages which are still devoid of basic amenities in the present Twenty first century. Technological innovation should be emphasized and proper road connectivity and better communication facilities should be provided to these people. Government education and institution should replicate their number to provide quality education to improve their social condition. More and more awareness should be generated regarding sanitation and health issues. Education, Infrastructure, and people participation (especially women) are necessary for the socio economic development of the area which in turn reduce the hardships faced by these people and help them in their adaptation to such extreme conditions.

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REFERENCES

- Cameron, E. (2011). From vulnerability to resilience: Farmer Managed Natural Regeneration in Niger. Climate and Development Knowledge Network.
- Barnes, B. V. ; Zak, D. K. ; Denton; S.R and S. H. Spurr. (1997): Forest Ecology (4thed.) John Wiley & Sons. NY.
- Adger, WN; Huq, S, Brown, K; Conway, D; Hulme, M (2003) 'Adaptation to climate change in developing world'. Progress in Development Studies.
- Ensor; J (2009) 'Adaptation to climate change: the role of adaptive capacity and resilience'.