



PROBLEMS PERCEIVED BY FARMERS OF NORTH-EAST INDIA IN ADOPTING IMPROVED AGRICULTURAL PRACTICES FOR MITIGATING THE ADVERSE EFFECTS OF CLIMATE CHANGE

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Abstract

A study was conducted at Kohima district of Nagaland state in north eastern part of India. The state is vulnerable and sensitive to all the climate change related issues. Kohima district has been administratively divided into four Rural Development blocks, out of which one block was selected purposively for study area. A well structured and pre-tested interview schedule was developed to collect data from 300 respondents. The selection of the respondents was done based on proportional random sampling technique. This study aimed to know the problems perceived by farmers in adopting improved agricultural practices for mitigating the adverse effects of climate change. The results revealed that more numbers of farmers perceived problems like “lack of knowledge to avail the loan, monetary support and subsidies from banks and development departments”, “poor economic condition of the farmers”, “lack of knowledge about suitable environmental friendly technologies”, lack of farm machineries suited for hilly terrain”, “high cost involved in improved agricultural practices” etc.

Key words: Perception, mitigating, climate change, agricultural labour, improved agricultural practices.

Introduction

UNFCC defines climate change as a “change in climate that is attributable directly or indirectly by human activities that alters atmosphere structures of the global atmosphere and that’s furthermore to natural weather variation observed over comparable periods of time”. Change is a law of nature; nothing on earth could remain static and immortal forever. But current climate changing trend is very devastating as it is changing at rate that is unprecedented. A change in earth’s climate mainly occurs due to two primary factors *viz.*, Natural factors and anthropogenic factors. There are many consequences out of which some of the major consequences are retreat of glaciers, rise in sea level, coral bleaching, lowering of ground table affecting agriculture, extreme temperature, increase in pest and diseases, ocean acidification etc.

Agriculture is directly and indirectly affected by climate change. Any attempt by industry or government to address climate change and global warming will require public understanding or recognition of the problems. Lot of improved agricultural practices are recommended to overcome the ill effects of climate change in agriculture.

Farmers perceive some problems in adopting those recommended agriculture practices. Hence this study was taken up and attempted to know the problems perceived by farmers in adopting improved agricultural practices for mitigating the adverse effects of climate change.

Materials and Methods

The study was carried out and the data were collected from different villages of Kohima district under Chunlikha Rural Development block (R.D. block). A well structured interview schedule was developed. Proportionate random sampling technique was followed to select a sample size of 300 respondents. To recognize the problems of farmers in adopting improved agricultural practices for mitigating the adverse effects of climate change, the interview schedule was developed in such a way that the respondents should answer without leaving any question. The respondents were asked to reveal the constraints experienced by them from the listed items. Suitable statistical analysis like percentage analysis and rank correlation were done to interpret the results.

Results and Discussion

The results of the present study as well as relevant discussions are presented and ranked accordingly. The

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Table 1: Distribution of respondents according to the problems perceived in adopting improved agricultural practices for mitigating the adverse effects of climate change. (n=300)

Sl.No.	Problems perceived by respondents	Frequency	Percent	Rank
1	Lack of knowledge to avail loan, monetary support and subsidies from banks and development departments.	285	95.00	I
2	Lack of information about climate change.	280	93.33	II
3	Poor economic condition of the farmers.	275	91.66	III
4	Lack of suitable environment friendly technologies suited for rural poor farmers.	264	88.00	IV
5	Lack of farm machineries and equipments suited for hilly terrain areas.	260	86.66	V
6	High cost involved in improved agricultural practices.	255	85.00	VI
7	Lack of separate centre or Research Institute for adaptation to climate change	250	83.33	VII
8	Lack of proper planning for socio-economic development under the principle of sustainable development.	248	82.66	VIII
9	Lack of proper co-ordination of scientists, extension workers and farmers	220	73.33	IX
10	Lack of information on early warning system.	160	53.33	X
11	Lack of training facilities for farmers.	138	46.00	XI
12	High cost of agricultural labour.	130	43.33	XII

data shown in Table 1 and Fig. 1 reveals the constraints perceived by the respondents in adopting the improved agricultural practices for mitigating the adverse effects of climate change.

The data collected from the farmers were analysed and interpreted. It reveals that majority of the farmers perceived problems like “lack of knowledge to avail the loan, monetary support and subsidies from banks and development departments”, “lack of information about climate change”, “poor economic condition of farmers”, “lack of suitable environment friendly technologies suited for rural poor farmers”, “lack of farm machineries and equipments suited for hilly terrain areas”, “high cost involved in improved agricultural practices”, “lack of separate centre or Research Institute for adaptation”, “lack of proper planning for socio-economic development”, “lack of proper co-ordination of scientists, extension workers and farmers”, “lack of information on early warning system”, “lack of training facilities” and “High cost of agricultural labour”.

There are thirteen major problems identified and analysed in percentage and ranked accordingly. “Lack of knowledge to avail the loan, monetary support and subsidies from banks and development departments” was the major problem expressed by majority (95.00%) of the respondents. This finding was also in accordance with the finding of Henry (2011). This finding regarding the credit facilities was also recommended by Kwaghe and Mohammed (2013) that credit facilities should be provided to farmers need for adaptation. “Lack of information about climate change” (93.33%) was ranked as the second major problem faced by the respondents. “Poor economic condition of the farmers” (91.66%) was ranked

as the third major problem. Similar observation was also made by Sahu and Mishra (2014). Technological constraints like “lack of suitable environmental friendly technologies suited for rural poor farmers” (88.00%) was ranked as the fourth major problem faced by the respondents.

Physical constraints like “lack of farm machineries and equipments suited for hilly terrain areas” (86.66%) was ranked as the fifth major problem followed by high cost involved in improved agricultural practices” (85.00%) was ranked as the sixth major problem. Similar finding regarding the high cost of inputs was also reported by Adesiji *et al.*, (2012). “Lack of separate centre or Research Institute for adaptation to climate change” (83.33%) was the seventh major problem of farmers because of the infrastructural backwardness and lack of human resources in the region.

Policy makers and extension constraints like “lack of proper planning for socio-economic development” (82.66%), “lack of proper co-ordination of Scientists, extension workers and farmers” (73.33%), “lack of information on early warning system” (53.33%), “lack of training facilities” (46.00%) were ranked as the eighth, ninth, tenth and eleventh respectively as the major problems perceived by the respondents. High cost of agricultural labour (43.33%) was perceived as the last major problem according to farmers in adopting improved agricultural practices for mitigating the adverse effects of climate change.

Conclusion

Majority of the people believe that climate change is a very serious problem and the ill-effects of climate

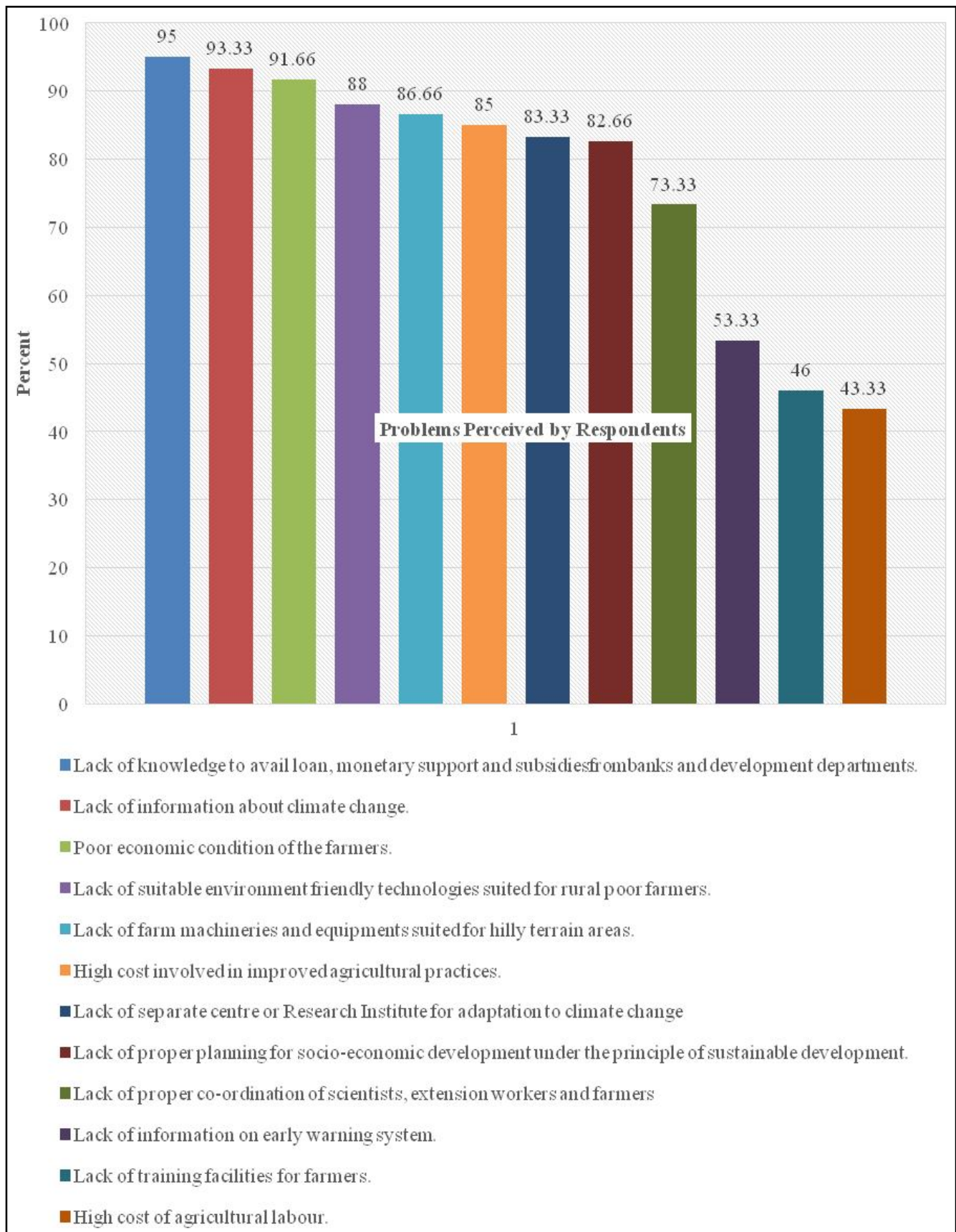


Fig. 1: Problems perceived by the respondents in adopting the improved agricultural practices for mitigating the adverse effects of climate change.

change should be addressed properly. In general, there appears to be significantly greater concern about climate change especially in the farming community. It is hoped that results of this study will be helpful in designing the plans and programmes by the developmental agencies of Government and NGO's and also will be helpful for planners and policy makers for the upliftment of the rural farmers in North-east India.

Acknowledgement

I feel privileged in taking this opportunity to express my heartfelt gratitude and indebtedness to our loving Almighty God for unceasing love and blessing. I express my sincere thanks to my guide Dr. K. Kanagasabapathi, Professor, Department of Agricultural Extension for his guidance, valuable suggestions and correction of my research paper.

References

- Adesiji, GB., B.M. Matanmi, M.P. Onikoyi and M.A. Saka (2012). Farmers Perception of Climate Change in Kwara State, Nigeria. *World Rural Observations*, **4(2)**: 46-54.
- Kumar, M. and N. Nandini (2011). Community perception, understanding and willingness towards global warming. *Asian J. Environ. Sci.*, **6(2)**: 175-179.
- Kwaghe, P.V. and D. Mohammed (2013). Analysis of Adaptation to Climate Change among crop farmers in Adamawa state, Nigeria. *Advances in Arts, Social Sciences and Education Research*, **3(1)**: 379-386.
- Philip Antwi-Agyei, J. Andrew, Fougill and C.S. Lindsay (2013). Barriers to Climate Change Adaptation in Sub-Saharan Africa: Evidence from North East Ghana and Systematic Literature Review. Centre for Climate Change Economics and Policy. Sustainability Research Institute. Paper no. 52.
- Ullah, W., T. Nihei, M. Nafees, R. Zaman and M. Ali (2017). Understanding Climate Change Vulnerability, Adaptation and Risk perceptions at household level in Khyber Pakhtunkhwa, Pakistan. *International Journal of Climate Change Strategies and Management*, **10(3)**: 359-378.
- Sahu, N.C. and D. Mishra (2014). Responses of Farmers to Climate Change in Odisha: AN Empirical Investigation. *International Journal of Environmental Sciences*, **4(5)**: 786-797.