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## CONSTRAINTS FACED DURING THE PRODUCTION AND MARKETING OF CABBAGE AND POTATO CROPS: A COMPARATIVE STUDY OF MANIPUR AND NAGALAND STATES OF INDIA

Th. Motilal Singh<sup>1</sup> and Amod Sharma<sup>2\*</sup>

<sup>1</sup>Head ICAR-KVK, Imphal West, ICAR Research Complex for NEH Region, Manipur Centre, India

<sup>2</sup>Mentor & Head, Dept. of Agricultural Economics, Nagaland University, SASRD, Medziphema Campus -797106, Nagaland, India

\*Corresponding Author: [hodsasrd2011@gmail.com](mailto:hodsasrd2011@gmail.com)

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### ABSTRACT

The present study was carried out by purposively simple stratified random sampling technique to select 300 respondents from both the states of Manipur and Nagaland, while to highlight the constraint faced by the growers during the production and marketing of cabbage and potato crops with Garrett Ranking Technique. For the production viz.; seed, labour, manures and fertilizers, irrigation, PPCs and other issues like animals, pests and diseases, have hampered of the potato and cabbage in the selected areas. While for marketing high price of the seed, not available in time, inferior quality of seed, low reliability of the seed, high wage rates of labour, skill & unskilled labour not available in time, irrigation facility not available, perennial sources are not available and irrigation facility not reliable etc; While for the market related issues, grading by hand & mechanical means, lack of knowledge regarding packaging, packing materials, high cost of transportation, lack of market infrastructures, unauthorized & illegal tax collections, use of improper scales in weighing, lack of support prices, lack of reliable & timely availability of market information and distant market along with the lack of cooperation among the producers and frequent ban & social boycott are some of the problems and constraints encountered by the entire producers and market intermediaries in the region.

**Keywords:** Manipur, Nagaland, Garrett Ranking Technique.

### INTRODUCTION

It is also estimated that the India's population will reach 1.51 billion by 2030. Again with the advancement of Health Sciences, Indian consumers are realizing on the healthy food for the future perspectives. The present Government of India also emphasises on the Doubling of Farm Income through various technologies intervention on sustainable approach by 2022. Bringing or balancing the entire scenario on the sustainable basis requires integrated and cumulative efforts of different Stakeholders from Top to Bottom or Bottom to Top approach through indebt study and understanding of the present existing systems and their nature of resource management patterns (Anon., 2019).

Again focussing on the North Eastern India, the total agricultural scenario is quite peculiar and can be differentiated from the agricultural system of Northern, Central and Southern India's agricultural practices or patterns. The entire region comprises of seven hilly states viz; Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The North-Eastern states of India are inhabited by several Indigenous people having various cultural, political, social and economic values. The region has a rich flora and fauna and is considered as biodiversity Hotspot of many crops. North-Eastern region has a huge potential for growth and development in agriculture and Horticultural crops such as Cabbage, Potato, Pineapple and others temperate crops (Mack *et al.*, 2015).

Manipur and Nagaland are the two adjoining states out of the seven states of North-Eastern States of India. These states are inhabited by many Indigenous people having special or peculiar system of social and economic life. *Zhuming; Zabo; Zero-Tillage and Fruit-Based Farming system* are some of the exemplified ones and many system are still left untouched in many pockets or areas from extensive study. Although the region has a lot of potential for the growth of various horticultural crops, farmers of the region have been experiencing many problems in the production and marketing aspects. (Singh, 2020; Singh and Sharma, 2020b).

Bringing the agricultural scenario of these two states on the sustainability forum; assessing the various attributing factors in the production and marketing system is the need of the hour so as to come up with the concrete findings and recommendations for future course of action and a handy manual for the Planners and Policy makers is the real core of the study (Alomia *et al.*, 2018).

### MATERIALS AND METHODS

The present study has been carried out in the state of Manipur and Nagaland states in consultation with the organizations and the line-departments working in the field of Organic farming at the first and secondly the feasibility of the researcher. Purposive simple random sampling techniques have been used for the selection of sample units,

both purposive and cluster sampling method have been used for the selection districts, blocks and surveyed of the sample sizes, from Nagaland, Zakhama block of Kohima district and Mao-Maram block of Manipur were selected for the study (Singh and Sharma, 2020a).

In the final stage of sampling plan, with the help of the selected villages, authority (Headman) and KVKs institutes, the farmers who cultivate potato and cabbage were analysed and from these villages, 300 farmers (150 respondent farmers from Mao-Maram block of Manipur and 150 respondent farmers from Zakhama block of Nagaland) were selected for each crop for the data collection. From the prepared farmers list, by adopting stratified random sampling, proportional allocation and cluster sampling techniques, the respondent farmers were drawn for collection of information using pre-tested schedule. The problems and constraints faced by the respondent farmers in the production and marketing of the selected crops (Potato and Cabbage) have been collected and analyze using Garette Ranking Technique (Singh and Sharma, 2020b).

## RESULTS AND DISCUSSION

Table 1 reveals the comparative study of the production constraints perceived by the respondents in the states of Nagaland and Manipur. The problems and constraints are categorized into seed, labour, irrigation, manures & fertilizers, PPCs and other related problems. The

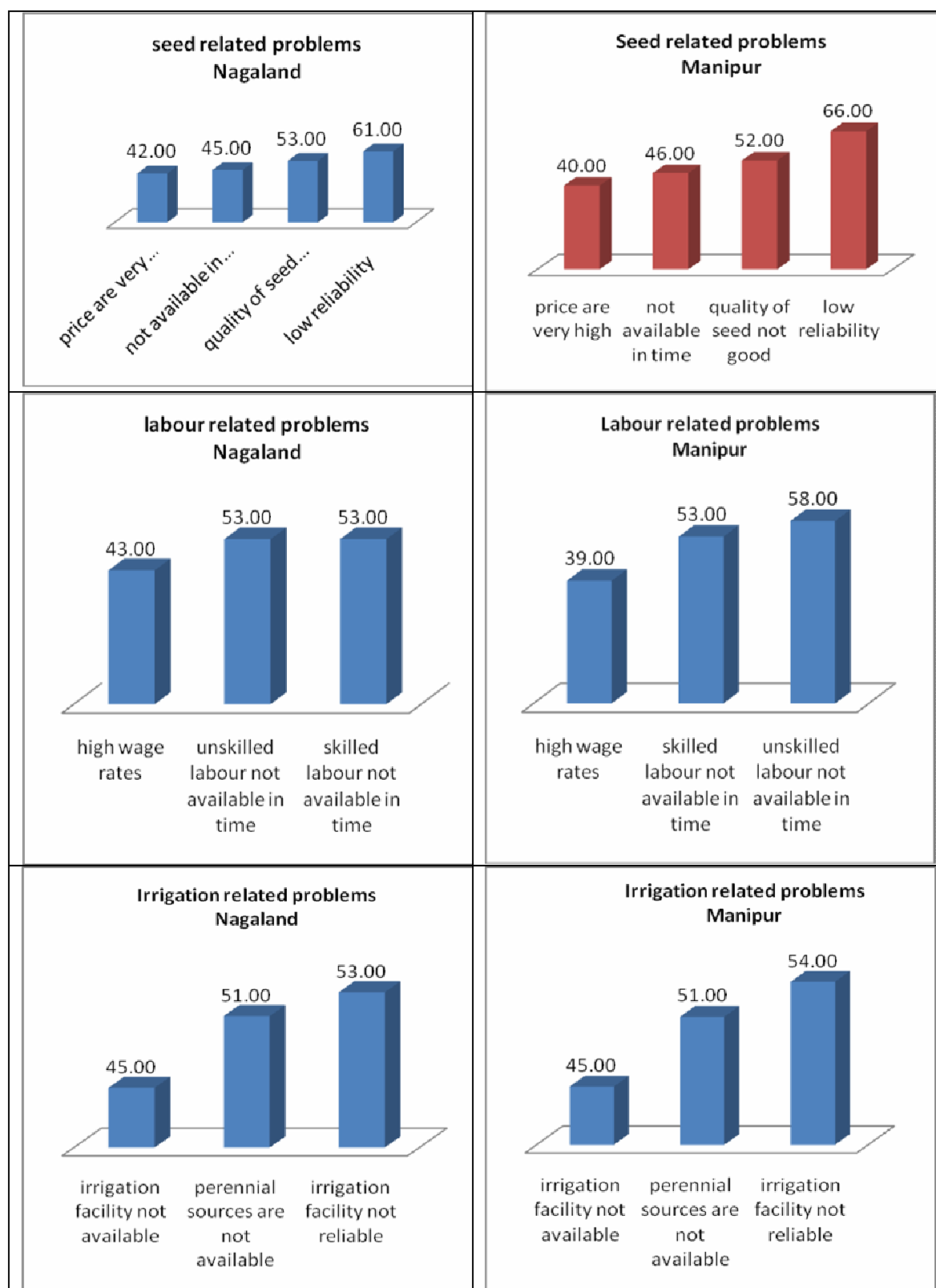
table highlighted the various problems & constraints; total score; average score and Garette ranking for the potato and cabbage crops of Manipur and Nagaland. The results of the analysis shows that the high price of the seed ranked first followed by not available in time; inferior quality of seed and low reliability of seed in Nagaland state. In case of labour related problems, high wage rates of labour ranked first followed by the unskilled labour not available in time and skilled labour not available in time. Irrigation facility not available, perennial sources are not available and irrigation facility not reliable ranked I, II and III respectively in the irrigation related problems. In the manures and fertilizers, not available in proper time, high transportation costs, high prices of organic sources and desired brand not available; inorganic fertilizers are not suitable ranked I, II, III, IV and V respectively. Again for the PPCs related problems, don't know proper dose, time of application, lack of knowledge about chemicals, high price; don't know proper method of spraying; and desired brand not available ranked I, II, III, IV and V respectively. Among the PPCs related problems, don't know proper dose, time of application, lack of knowledge about chemicals, high price; don't know proper method of spraying; and desired brand not available ng the other related problems, animals, pests & diseases, weeds and anti-social & ethnic problems ranked I, II, III and IV respectively. Similar studies were carried out by the Eman and Gebremedhin (2007).

**Table 1 : Production constraints for Cabbage & Potato crops in Manipur & Nagaland**

S. N	Constraints	Manipur			Nagaland		
		Total Score	Average Score	Garrett Ranking	Total Score	Average Score	Garrett Ranking
1.	<b>Seed related</b>						
A	Price are very high	6950.00	40.00	I	6675.00	42.00	I
B	Not available in time	5675.00	46.00	II	6025.00	45.00	II
C	Quality of seed not good	4650.00	52.00	III	4475.00	53.00	III
D	Low reliability	2725.00	66.00	IV	2825.00	61.00	IV
2.	<b>Labour related</b>						
A	High wage rates	6366.67	43.00	I	6366.67	43.00	I
B	Skilled labour not available in time	4650.00	52.00	II	4366.67	53.00	II
C	Unskilled labour not available in time	4366.67	53.00	III	4266.67	53.00	III
3	<b>Irrigation related</b>						
A	Irrigation facility not available	5933.33	45.00	I	5933.33	45.00	I
B	Perennial sources are not available	4800.00	51.00	II	4733.33	51.00	II
C	Irrigation facility not reliable	4266.67	54.00	III	4333.33	53.00	III
4.	<b>Manures &amp; Fertilizers related</b>						
A	Not available at proper time	6780.00	41.00	I	6880.00	40.00	I
B	High transportation costs	6220.00	44.00	II	6560.00	42.00	II
C	High prices of organic sources	5940.00	45.00	III	5660.00	47.00	III
D	Desired brand not available	3760.00	56.00	IV	3760.00	56.00	IV
E	Inorganic fertilizers are not suitable	2300.00	64.00	V	2140.00	65.00	V
5.	<b>PPCs related</b>						
A	Don't know proper dose, time of application	7040.00	40.00	I	6940.00	40.00	I
B	Lack of knowledge about chemicals	5340.00	49.00	II	5080.00	50.00	II
C	High price	4860.00	51.00	III	5040.00	50.00	III
D	Don't know proper method of spraying	4780.00	51.00	IV	4660.00	51.00	IV
E	Desired brand not available	2980.00	60.00	V	3280.00	59.00	V
6.	<b>Others related</b>						
A	Pests & diseases	6575.00	42.00	I	6475.00	43.00	I
B	Animals	6275.00	44.00	II	6175.00	44.00	II
C	Weeds	5900.00	45.00	III	6100.00	44.00	III
D	Anti social & ethnic problems	1250.00	73.00	IV	1250.00	73.00	IV

The same trend is also found in the state of Manipur with the high price of the seed ranked first followed by not available in time; inferior quality of seed and low reliability. In case of labour related problems, high wage rates of labour ranked first followed by the skilled labour not available in time and unskilled labour not available in time. Irrigation facility not available; perennial sources are not available and

irrigation facility not reliable ranked I, II and III respectively in the irrigation related problems. In the manures and fertilizers, not available in proper time, high transportation costs, high prices of organic sources; and desired brand not available; inorganic fertilizers are not suitable ranked I, II, III, IV and V respectively.



**Fig. 1 :** Graphs of Production Problems & Constraints of Potato & Cabbage crops in Nagaland & Manipur states

Again for the PPCs related problems, don't know proper dose, time of application, lack of knowledge about chemicals, high price; don't know proper method of spraying; and desired brand not available ranked I, II, III, IV and V, respectively. Among the other related problems, Pests & Diseases, animals, weeds and anti-social & ethnic problems ranked I, II, III and IV respectively. Even though the region is well famous for the production of some potential and underutilized horticultural crops, the marketing of the farm produces both within the states and outside the states have been logged by various technical and social factors. The farmers in the region are not getting the realistic price of their farm products. Similar studies were carried out by Mishra and Yadav (2020).

Table 2 reveals the highlighted the marketing problems and constraints of potato and cabbage of Manipur and Nagaland states. The analysis of the different market related issues in the marketing of the farm cabbage and potato in the state of Manipur shows that the grading standards not specific, grading by hand is costly, mechanical grading facilities not available and hand grading leads to quality deterioration ranked I, II, III and IV respectively for the grading related problems. In case of the packaging, lack of knowledge regarding packaging and packing materials rank first followed by lack of quality packing materials; packing material not available in time and costly packing materials.

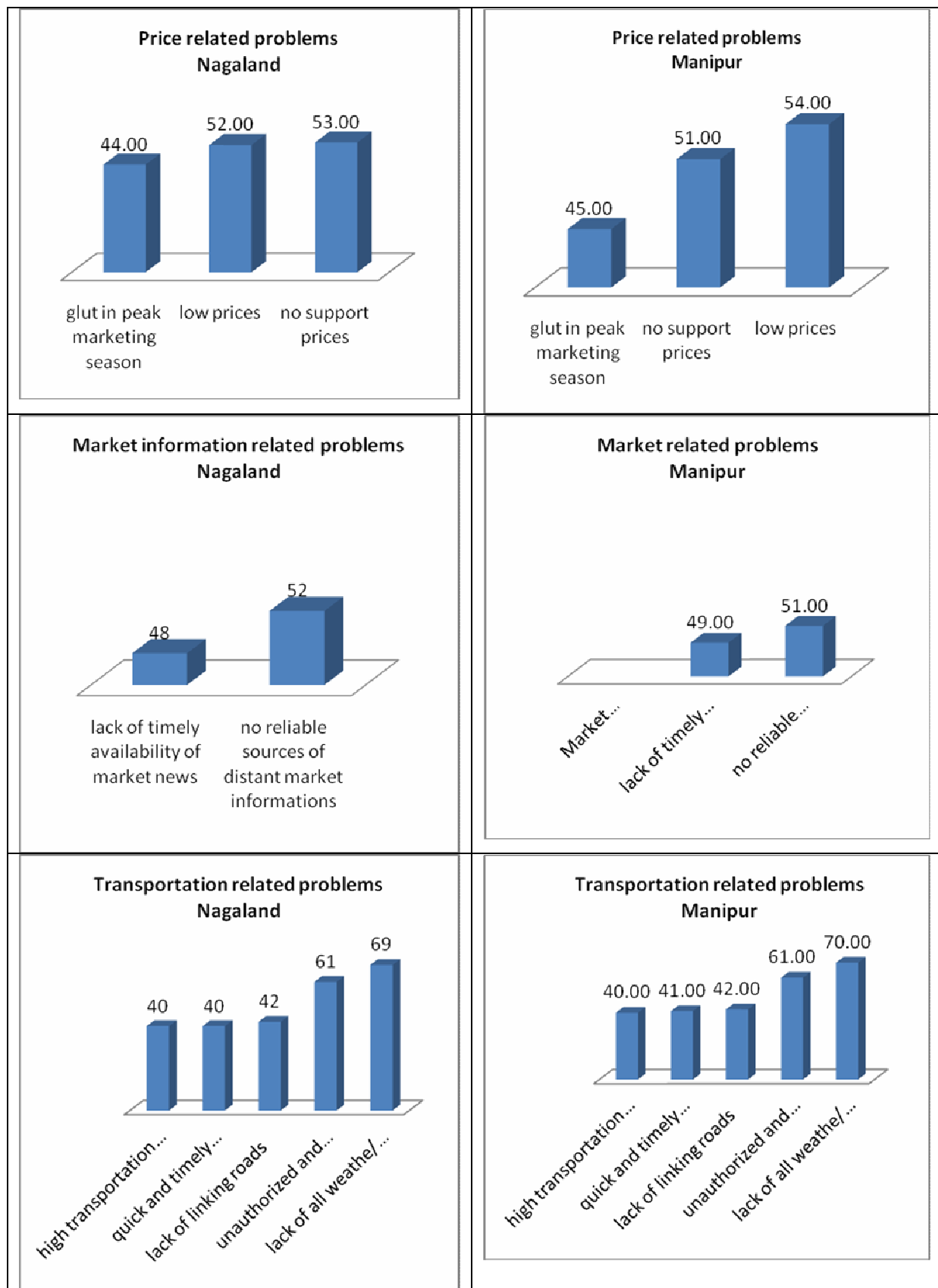
high transportation charges, quick and timely transportation facilities not available, lack of linking roads Unauthorized and illegal taxes and lack of weather / metallic roads ranks I, II, III, IV and V respectively. Similar studies were carried out by Hunde (2017).

In the weighing related problems, use of improper scales and weighing is not done accurately rank I and II respectively. Also the glut in peak marketing season, low prices and no support prices rank I; II and III respectively in the price related problems. In case of market information related problems, lack of timely availability of market news rank first followed by no reliable sources of distant market information. Among the other related problems, non availability of market shed; lack of govt. policies; lack of cooperation among the producers; and frequent ban & social boycott rank I, II, III and IV respectively. Similar studies were carried out by Bezu and Holden (2008).

In case of Nagaland state, grading standards is not specific and grading by hand is costly, mechanical grading facilities not available and hand grading leads to quality deterioration ranked I; II; III and IV respectively for the grading related problems. In case of the packaging, lack of knowledge regarding packaging and packing materials rank first followed by lack of quality packing materials; packing material not available in time and costly packing materials.

**Table 2 :** Marketing constraints for Cabbage & Potato crops in Manipur & Nagaland

S. N	Problem / Constraints	Manipur			Nagaland		
		Total Score	Average Score	Garrett Ranking	Total Score	Average Score	Garrett Ranking
1.	<b>Grading related</b>						
A	Grading standards not specific	6550.00	42.00	I	6750	41	I
B	Grading by hand is costly	6350.00	43.00	II	6575	42	II
C	Mechanical grading facilities not available	5250.00	49.00	III	4775	51	III
D	Hand grading leads to quality deterioration	1850.00	68.00	IV	1900	67	IV
2.	<b>Packaging related</b>						
A	Lack of knowledge regarding packaging and packing materials	6900.00	40.00	I	6650	41	I
B	Lack of quality packing materials	5325.00	49.00	II	5450	48	II
C	Packing materials not available in time	4675.00	52.00	III	4850	51	III
3.	<b>Transportation related</b>						
A	High transportation charges	6980.00	40.00	I	7000	40	I
B	Quick and timely transportation facilities not available	6880.00	41.00	II	6920	40	II
C	Lack of linking roads	6580.00	42.00	III	6600	42	III
D	Unauthorized and illegal taxes	2980.00	61.00	IV	2880	61	IV
E	Lack of all weather/ metallic roads	1580.00	70.00	V	1600	69	V
4.	<b>Weighing related</b>						
A	Use of improper scales	5200.00	49.00	I	5150	49	I
B	Weighing not done accurately	4800.00	51.00	II	5150	51	II
5.	<b>Price related</b>						
A	Glut in peak marketing season	6100.00	45.00	I	6166.67	44.00	I
B	No support prices	4800.00	51.00	II	4500.00	52.00	II
C	Low prices	4100.00	54.00	III	4333.33	53.00	III
6.	<b>Market information related</b>						
A	Lack of timely availability of market news	5250.00	49.00	I	5400	48	I
B	No reliable sources of distant market inform.	4750.00	51.00	II	4600	52	II
7.	<b>Other Problems related</b>						
A	Non availability of market shed	7350.00	38.00	I	6975	40	I
B	Lack of govt. policies	6000.00	44.00	II	6050	45	II
C	Lack of cooperation among the producers	5400.00	48.00	III	5525	47	III
D	Frequent ban & social boycott	1250.00	73.00	IV	1450	71	IV



**Fig. 2 :** Graphs of Marketing Problems & Constraints of Potato & Cabbage crops in Nagaland and Manipur states

High transportation charges, quick and timely transportation facilities not available, lack of linking roads, unauthorized and illegal taxes, and lack of weather / metallic

roads ranks I; II; III; IV and V respectively. Similar studies were carried out by Rola-Rubzen *et al.* (2011).

In the weighing related problems, use of improper scales and weighing is not done accurately rank I and II respectively. Also the glut in peak marketing season, no support prices and low prices rank I; II and III respectively in the price related problems. In case of market information related problems, lack of timely availability of market news rank first followed by no reliable sources of distant market information. Among the other related problems, non availability of market shed; lack of govt. policies; lack of cooperation among the producers; and frequent ban & social boycott rank I; II; III and IV respectively. Similar studies were carried out by the Nath *et al.* (2020).

### CONCLUSION

The production of cabbage and potato in the selected study areas of Manipur and Nagaland states of the North Eastern Region of India gives an ample scope of employment and income generation activities for the farm families. However, the producers and market intermediaries have been facing the technical and social problems and constraints in the states of Manipur and Nagaland. The major economic obstacles encountered by the farmers across the categories are lack of quality seeds/ planting materials, labour problems, irrigation problems, pests & diseases, manures & fertilizers, and PPCs etc. in the production of the horticultural crops whereas lack of access to transportation, market information's, social problems, grading and packaging in the marketing of their horticultural crops. Measures like immediate improvements on transport mechanism, creations of market infrastructures, rural storage structures / go downs, minimizing social problems, legal actions on illegal taxations, improving the productions technologies, provision of institutional credits, increasing awareness on underutilized crops and immediate Govt. attentions on both production and marketing aspects will ease both the backward and forward linkage mechanism of the various stakeholders not only in the state of Manipur but also in the entire north eastern region of India.

### POLICY RECOMMENDATIONS

- Formation of new cooperatives societies and strengthening of existing ones in the state that will take care of both production and marketing through institutional approach to backward and forward linkages is needed and recommended.
- Formation of more Growers' Association / Societies or organization for specific crops in the area to facilitate market channel as well as proper technology transfer and effective capacity building is also recommended.
- The storage facilities need to be created near the production area for storage of the produce during the glut season which will help to decrease intra-seasonal price variation and to assure regular supply of the produce and reduction of wastage.

- The government can give subsidy for building simple storage facilities so that they can keep their vegetables for some time when price are still low in the market.

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