

# Socio-economic and Marketing Status of Pineapple Growers in Dimapur District of Nagaland, India

Amod Sharma<sup>1\*</sup>, Sentsuthung Yanthan<sup>2</sup> and Sujay Kumar<sup>3\*</sup>

Department of Agricultural Economics,  
Nagaland University, SASRD, Medziphema Campus, District: Dimapur 797 106,  
Nagaland, India

(Received 24 January, 2022; Accepted 26 March, 2022)

## ABSTRACT

The study on socio economic status of pineapple growers is a project which was aimed at finding out the social life of the pineapple growers especially in these areas, where pineapple has been a source of income for many of the farmers. In this context, various data were collected from different sources. The primary data were collected from 120 farmers and market functionaries in the selected district of Dimapur. For analysis of the data, tabular analysis, growth rate analysis and financial ratio analysis was carried out. The per ha total cost of cultivation of pineapple was worked out at Rs10,000/-The average yield of pineapple in these areas was 14 mt / ha, with returns of more than 1 lakh. The variation in yield was attributed to variables such as human laour, fertilizer, use of weedicides, growth regulators and planting materials. In the context of market, the produce was sold to the wholesalers and retailers, who in turn sold them to different agencies outside the state. These intermediaries involved incurred significant transportation and marketing costs, but they could easily recover their losses once they sold their produce. The profit made by the wholesale and retailers for one tonne of the produce was worked out at Rs 6,638.81/- and Rs 2,108.57/-, respectively indicating that they were earning as much as the producer farmers. This pattern was observed in majority of the respondents indicating the need for a proper market facility where the farmers could sell their produce to the consumers directly. Moreover pineapple being a perishable commodity required good storage facilities, which can be solved by establishing several processing facilities in these areas which would add value to the produce and also would increase the returns significantly to the farmers.

*Key word: Socio-economic, Pineapple, Marketing, Growers, Status.*

## Introduction

The pineapple (*Ananas comosus*) belonging to family *Bromeliaceae* is one of the most important commercial fruits of the world. It is believed to have originated in Brazil from where it has spread to other tropical parts of the world. The word "pineapple" first recorded in 1389 was originally used to describe the reproductive organs of conifer trees. It is a good source of vitamin A & B and fairly rich in

vitamin C and minerals like calcium, magnesium and iron. It is also a source of bromelain, which is a protein digesting enzyme. Pineapple (*Ananas comosus*) is the third most important tropical fruit in the world after banana and citrus. Pineapple cultivation is confined to the area of the high rainfall and humid coastal regions in the peninsular India and to the hilly areas of North Eastern region of the country. Pineapple is also an important fruit crop of the North-East (NE) region of India, occupying an area

(<sup>1</sup>Head, <sup>2</sup>PG Student and <sup>3</sup>Ex. DPD)

of 47.236 ha and producing 4,80,406 t annually (Anon., 2020b).

Cultivation of pineapple in the NE region and in the state of Nagaland has been practiced since time immemorial but initiatives for commercialization and adoption of modern technology has been started recently. Government of Nagaland has identified pineapple as one of main horticultural crops and various steps have been taken under this mission to boost up pineapple cultivation. This has resulted in substantial increase in area and production of pineapple to the tune of 141.00 per cent increase in area and 240.50 per cent increase in production (Anon., 2021). The average productivity of pineapple in Nagaland is 15.5 t/ha with a total production of 57.5 thousand tons from a total area of 3700 ha (Anon., 2020a). Medziphema rural development (RD) block under Dimapur district is considered as the pineapple valley of Nagaland. Pineapple grown in Medziphema RD block is one of the best in Nagaland in terms of its quality and sweetness, however, its volume of production is very less due to limited marketing linkage.

Since the farmers are interested in getting higher price while the consumers are interested in getting desirable products at reasonable prices. Besides, marketing studies shows whether service rendered is reasonable or not. This can be used as a yardstick to fix the marketing charges for some intermediaries. During marketing stage, the pineapple producers may be faced with manifold problems which have direct bearing upon the prosperity of producers. The main marketing problems are market finance, price fluctuation etc (Singh and Sharma, 2020).

Even if the production technology is advanced, unless marketing is improved simultaneously, efforts to increase the yield and production may go waste. It is learnt that, efforts have been made to improve the marketing through enforcement of laws. However, these efforts were directed towards non-perishable goods like cereals and very limited efforts have been made in case of marketing of fruits.

Area under pineapple cultivation is therefore diminishing with most of the farmers aiming for higher return and non-perishable crops (Singh and Sharma, 2021a). This study was aimed at finding out the socio-economic status of the pineapple growers with the following specific objectives:

1. To study the income and employment status of

the selected pineapple growers and

2. To identify the constraints in production and marketing of pineapple and suggest policy measures.

### **Research Methodology**

Medziphema is a sub-division in Dimapur district, Nagaland state, India and was formerly known as 'Ghaspani' which would literally mean 'water from the plant/tree'. Even now it is used commonly by the people of this region to refer to this locality and around. Medziphema town and Medziphema village are situated few kilometers apart, the village stands on a hill top to the north of the near-valley Town, national highway no. 39 runs right through the town area. Medziphema enjoys the best location in the region for several reasons- its distance from the Capital City of Kohima is just 44 km and 33 km from Dimapur- the most important business centre in North East India, possibly after Guwahati in Assam. The research was conducted in Dimapur district in three villages of Medziphema block namely Molvom, Medziphema village and Jhornapani by random sampling. The methodology used in this work was especially guided by the terms of references and available documentations on pineapple from different reliable sources. After selection of the villages, a list was prepared from each of these three (3) selected villages and later on categorized into different farm sized groups. A total of 120 respondents were selected, a sample of 40 respondents were drawn randomly with a representative sample from each village. The basic method used in this survey was qualitative / key informant interviews. Using this method the researcher held several interviews with the farmer growers / respondents. Although respondents were randomly selected, every attempt was made to get a balanced opinion of the socio-economic issues in the study area and daily activities of the farmer growers.

The researcher also used secondary data content analysis. In this method, published research on pineapple in Medziphema and data collected from various offices viz; Directorate of horticulture, Central Institute of Horticulture (CIH) was analyzed to assess trends and analyze changes and correlate such data with the current facts on the ground. A data sheet was prepared to enter the data collected and this was entered and analyzed using MS Excel. The data sheet specified the most crucial questions

which would enable the researcher to obtain the key information as required in the objectives mentioned for the research work.

### Results and Findings

Table 1 reveals that most of them had attained high-schools (41.66 per cent) with illiterate accounting for the next majority (28.34 per cent) followed by those who finished primary (25.00 per cent) and a few graduates (5.00 per cent). The data was collected from various household respondents, where the number of men interviewed was 50.00 per cent, women accounted for 35.00 percent, youths 10.00 per cent and elderly in the community 5.00 per cent, results regarding the age of households in the study were analyzed. Four categories of age groups were used to analyze the age data. More than half of the respondents were in the age group of 30-39 years as was revealed in the data collected. Similarly, an investigation into the history of settlement showed that majority (65.00 per cent) of the respondents had settled in the locality for more than 50 years. It also showed that these farmers are keen to increase their knowledge on pineapple farming as most of them

had settled long ago and these households had ample knowledge on the growing of pineapples in these areas. Similar Studies were carried out in the line by the Bartholomew *et al.*, 2001; Singh and Sharma, 2021b.

Table 1 reveals that most of the pineapple grower farmers were in the category of Rs 30,000-54,000 which showed that most of these farmers were in the middle class category. Majority of the employed respondents were farmers (81.66 per cent) with a few holding jobs (18.33 per cent), but most of them had to depend on agriculture for meeting their family requirements. The size of land holdings is highest in medium category 68.33 per cent, followed by

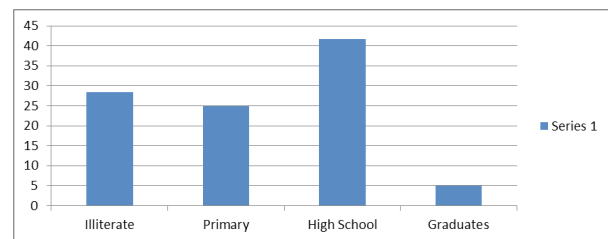


Fig. 1. Showing Level of literacy among the pineapple growers

Table 1. List showing the general characteristics of the respondents (n=120)

Sl. No.	Attributes	Category	No.	Percentage (per cent)
1	Education	Illiterate	34	28.34
		Primary	30	25.00
		High School	50	41.66
		Graduates	6	5.00
2	Position of respondents	Women	42	35.00
		Men	60	50.00
		Youth	12	10.00
		Elderly	6	5.00
3	Age	20-29	24	20.00
		30-39	66	55.00
		40-49	24	20.00
		Above 50	6	5.00
4	Annual income	Less than Rs 30,000/-	30	25.00
		Rs 30,000/- -54,000/-	66	55.00
		Above Rs 54,000/-	24	20.00
5	Employment status	Employed	22	81.66
		Employed Dependent	98	18.34
6	Length of stay in the area	> 5 years	20	16.66
		> 20 years	22	18.34
		> 50 years	78	65.00
7	Size of land holdings	Marginal Up to 2.5 acre	8	6.64
		Small 2.51 to 5.0 acres	26	21.66
		Medium 5.01 to 10 acre	82	68.33
		Large >25	4	3.34

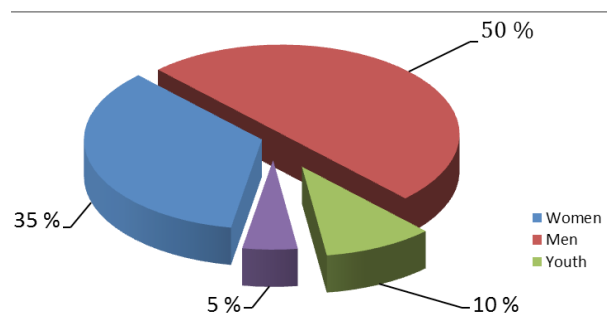


Fig. 2. Showing the percentage of household heads interviewed

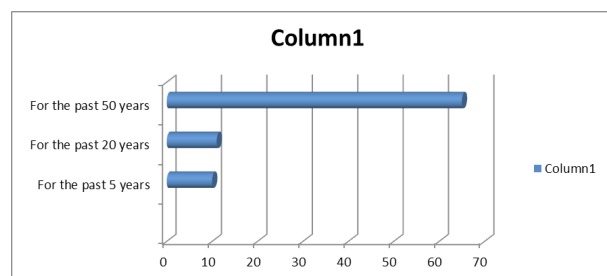


Fig. 3. Showing length of stay of the respondents in the survey area

small category with 21.66 per cent and marginal and large with 6.64 per cent and 3.34 per cent respectively. Similar Studies were carried out in the line by the Sharma *et al.*, 2018; Singh and Sharma 2022.

Table 2 reveals the marketing cost incurred at various stages of marketing of pineapple by the intermediaries involved which involved the cost of transportation, packing, loading & unloading etc. The total marketing cost incurred for one (1) ton of the produce by the wholesaler was worked out at Rs 13992.15 and for the retailer it was worked out at Rs 4141.4342; the marketing margin for Channel II and Channel III were worked out at Rs 10391.43 and Rs 34617.10, respectively. Similar Studies were carried out in the line by the Yadav and Sharma, 2019.

Table 3 reveals the price spread is the difference between the price paid by the consumer and the net

Table 2. Marketing cost incurred by market intermediaries (Rs/t)

Sl. No.	Particulars	Wholesaler	Retailer
1	Transportation cost	10346.02	2338.63
2	Packaging / Box cost	490.00	490.00
3	Loading	735.00	592.80
4	Unloading	1766.82	720.00
5	Miscellaneous	655.13	-
	Total cost	13992.15	4141.43

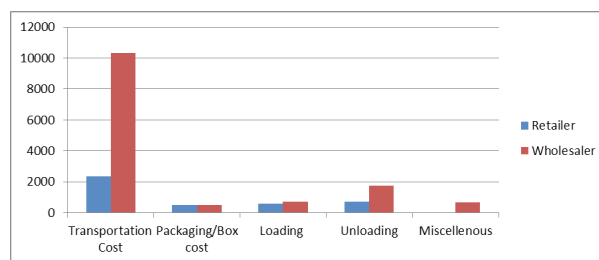


Fig. 4. Marketing cost incurred by market intermediaries (Rs / t)

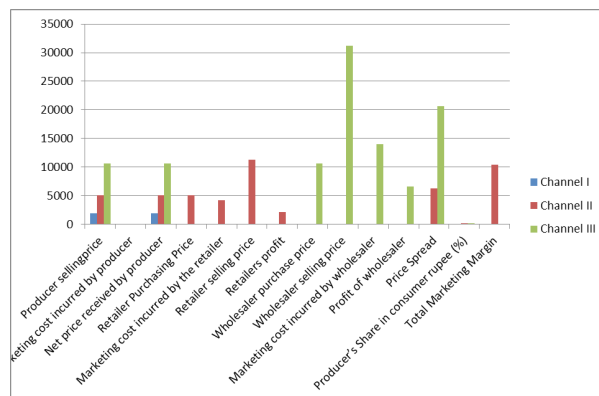


Fig. 5. Price spread in marketing of pineapple in different channels

price received by the producer. The price spread for Channel II was worked out at Rs 6250 and for Channel III; the price spread was Rs 20625. The producer's share in consumer's rupee was higher (44.44 per cent) in case of channel II viz; Producer - retailer - consumer, whereas in case of channel III, it was reduced to (34.00 per cent) viz; Producer-Wholesaler-Consumer. Similar Studies were carried out in the line by the Thakur *et al.*, 1988; Chishi and Sharma, 2018.

Table 4 reveals the efficiency of various identified marketing channels was calculated through the Shepherd's formula; the marketing efficiency was higher for channel II with the Index of Marketing efficiency for Channel II and channel III at 1.716 and 1.234, respectively. Similar Studies were carried out in the line by the Rao, 1997; Sharma *et al.*, 2016.

Table 5 reveals the various constraints faced by the pineapple growers were carefully analysed based on a pre-structured questionnaire and with the interaction with the respondents. The marketing of the produce is the key to any successful agricultural produce. In the case of pineapple farmers, various constraints faced by them were analyzed. About 66.67 per cent of the farmers faced problems of at-

tack of the produce by farm animals (cow, goats etc), which was a major drawback, since most of the farmers invest a lot of time and effort in maintaining their farms. These farm animals were a nuisance during the bearing periods as most of their produce were ravaged which could be solved by proper fencing in and around these farms, especially where the incidences of farm animal attacks were high. Similar Studies were carried out in the line by the Tilekar, 1985; Sharma, 2012.

In continuation with the problem mentioned, the problems of fencing were reported by 61.67 percent. Lack of suckers was reported by 25.00 per cent of the farmers, where they had to purchase the suckers at a higher rate than the normal rate they would incur for the planting materials. But majority of the farmers had satisfaction that the government was helping them in getting the planting materials at a low rate. The problem of insect pest and diseases were reported by 25.00 per cent of the farmers, where the plants died of disease and pest attacks. In relation to funds and capitals, 16.66 per cent of the farmers faced this problem. This was attributed to low banking knowledge by the farmers concerned and family related issues. Low productivity was reported by 15.00 per cent of the farmers, which was a positive sign as it showed that majority of the farmers in

these areas were satisfied with their production and hence it instills confidence among other non-pineapple growers that pineapple growing can become a lucrative business. Lack of knowledge were reported by 8.33 per cent especially relevant to those farmers whose farm had incidences of pest attacks. Similar Studies were carried out in the line by the Chadha and Reddy, 1996.

**Table 5.** Problems in production of pineapple

Sl. No.	Problems	Frequency	Percentage
1.	Lack of suckers	30	25.00
2.	Attack by animals (cow, goats etc)	80	66.66
3.	Insect, pest and diseases	30	25.00
4.	Funds and capitals	20	16.67
5.	Lack of knowledge	10	8.33
6.	Low productivity	18	15.00
7.	Fencing	74	61.67

Table 6 reveals the main problem reported by them was transportation facilities, where 88.33 per cent of them thought it was a major drawback for pineapple produce. As these villages have good road connectivity, transportation facilities can be improved significantly in these areas for transport of

**Table 3.** Price spread in marketing of pineapple in different channels

Sl. No.	Particulars	Channel-I	Channel- II	Channel- II
1	Producer selling price	1875.00	5000.00	10625.00
2	Marketing cost incurred by producer	-	-	-
3	Net price received by producer	1875.00	5000.00	10625.00
4	Retailer Purchasing Price	-	5000.00	-
5	Marketing cost incurred by the retailer	-	4141.43	-
6	Retailer selling price	-	11250.00	-
7	Retailers profit	-	2108.57	-
8	Wholesaler purchase price	-	-	10625.00
9	Wholesaler selling price	-	-	31250.00
10	Marketing cost incurred by wholesaler	-	-	13992.15
11	Profit of wholesaler	-	-	6632.85
12	Price Spread	-	6250.00	20625.00
13	Producer's Share in consumer rupee (per cent)	-	44.44	34.00
14	Total Marketing Margin	-	10391.43	34617.15

**Table 4.** Table showing the marketing efficiency

Sl. No.	Items	Unit	Channel I	Channel II	Channel III
1	Value of goods sold (v)	Rs / kg for one ha	1875.00	11250.00	31250.00
2	Total Marketing cost	-	-	4141.43	13992.15
3	Marketing efficiency	-	-	1.716	1.234

the produce from the farms to various markets in these areas. Similar Studies were carried out in the line by the Sharma *et al.*, 2021.

The next problem addressed by 80.00 percent was the cost of transportation. As cited above, proper transportation were not available in order to sell their produce, these farmer growers and the marketing agencies had to incur heavy cost on available transport facilities which can be solved by improving the transport facilities in these areas. The need for government support was reported by 75.00 percent for those growers who have potential, but fail to produce much yield as a result of any reliable support from the government side. It was also seen that 51.67 per cent reported problems in processing, 50.00 per cent reported sorting and grading was a problem, while 48.333 percent reported problems in harvesting, 28.33 per cent reported problems of lack of trainings and 6.67 per cent had few issues such as post harvest losses, theft etc; Similar Studies were carried out in the line by the Verma and Singh, 2004. Similar Studies were carried out in the line by the

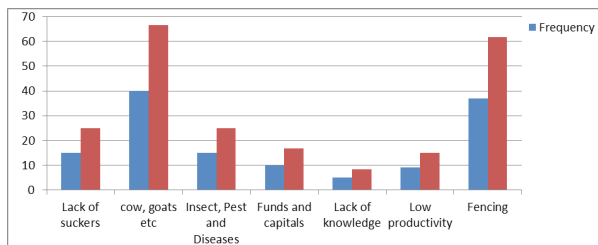


Fig. 6. Problems in production of pineapple

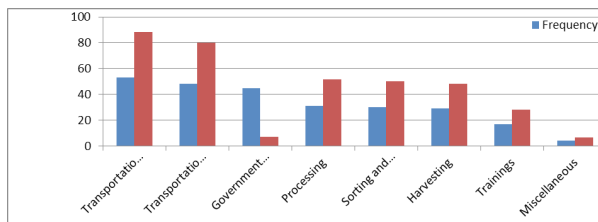


Fig. 7. Marketing constraints faced by Pineapple growers

Table 6. Marketing constraints faced by the growers

Sl. No.	Problems	Frequency	Percentage	Rank
1.	Transportation facilities	106	88.33	I
2.	Transportation cost	96	80.00	II
3.	Government support	90	75.00	III
4.	Processing	62	51.67	IV
5.	Sorting and grading	60	50.00	V
6.	Harvesting	58	48.33	VI
7.	Trainings	34	28.33	VII
8.	Miscellaneous	8	6.67	VIII

Saikia, 1998.

## Policy Implications

Based on the findings the necessary steps to be taken up in the areas viz; even though the growth in area, production and productivity was positive, the growth in productivity was very low because of adoption of local variety in cultivation by majority of the farmers; which calls for intensive efforts to increase area under high yielding varieties in study region, even the producer share in consumer rupee is very less as market Intermediaries enjoy large shares and producers are hard hit. In order to reduce the unwanted clutches of intermediaries, the producers themselves can take up marketing the produce at distant market by collective marketing process. Government should make a suitable and applicable policy to solve the marketing problems faced by the Pineapple growers. This can be achieved by improving the marketing system through market intelligence, market research and development and marketing extension in the area. Formation of stronger and larger farmer organization to tackle the marketing problems, such as the society formed at Molvom also called as Pineapple Grower's Society to enable collective farmer's decision and manage the produce of the farmers. Storage of the agricultural commodities has very important role to play to enhance the Shelf- life of the products and thus offer the commodity for sale in a phased manner to avoid unnecessary glut in the market and there by slump in the prices. The establishment of cold storages both at primary and terminal levels would improve the marketability of the fruit. The use of FYM or organic manure and bio-pesticides was almost nil in the study area. Increased awareness and there by increased demand for organically grown products in recent years is of crucial importance in terms of marketability of the

produce. Hence, organic farming in pineapple has lot of scope. Therefore, the cultivators may think in these lines to produce organic pineapple.

## References

- Anonymous. 2020a. *Agricultural Situation in India*. Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.
- Anonymous, 2020b. National Sample Survey Organization. New Delhi.
- Anonymous, 2021. Indian Horticulture Database. National Horticulture Board, Ministry of Agriculture, Government of India. Gurgaon, Haryana.
- Bartholomew, D., Rohrbach, K. and Paull, R. E. 2001. History, Distribution and World Production; Edited by In: *The Pineapple: Botany, Production and Uses*; CAB International.
- Chadha, K. L. and Reddy, B. M. C. 1996. Pineapple. (i11) 50 Years of Crop Science Research in India: 463-473. Paroda R S and Chadha K L (Eds). Indian Council of Agricultural Research, New Delhi.
- Chishi, S. Kanitoli and Sharma, Amod, 2018. Socio-Economic and Constraints Status of Integrated Watershed Development Programme in Nagaland. *International Journal of Current Microbiology and Applied Sciences*. 7(11). November: 1538-1546.
- Rao, A N. 1997. Higher Employment and Income Potential of Horticultural Crops. *Indian Journal of Agricultural Economics*. 52(3): 23-26.
- Saikia, T. N. 1998. Price Structure of Pineapple: A Study in Meghalaya. *Indian Journal of Agricultural Economics*. 40(3): 112-117.
- Sharma, Amod, 2012. Trends of Area, Production and Productivity of Fruit Crops in Nagaland State of North Eastern Hill Region of India. *Economic Affairs*. 57(3). September: 259-276.
- Sharma, Amod, Chakma, Ashim and Singh, Th. Motilal. 2021. Price Spread and Post Harvest Losses during the Marketing of Cabbage in West District of Tripura. *The Journal of Rural and Agricultural Research*. 21(1): 1-5.
- Sharma, Amod and Kichu, Yimkumba and Chaturvedi, B. K. 2016. Economics and Constraints of Pineapple Cultivation in Dimapur District of Nagaland. *The Journal of Rural and Agricultural Research*. 16(1): 72-75.
- Sharma, Amod., Kichu, Yimkumba and Sharma, Pradeep Kumar, 2018. Sustainable economic analysis and constraints faced by the pineapple growers in Nagaland. *Progressive Agriculture*. 18(1) : 27-33.
- Singh, Th Motilal and Sharma, Amod, 2022. Income-employment and equity-an impact study of sagolkhong watershed project in Imphal west district of Manipur. *Agricultural Mechanization in Asia*. 53(1): 5255-5262.
- Singh, Th. Motilal and Sharma, Amod, 2020. Cost and returns on various farm levels of selected major horticultural crops in the state of Nagaland and Manipur, India. *Plant Archives*. 20(2): 9095-9103.
- Singh, Th. Motilal and Sharma, Amod, 2021a. Constraints faced during the Production and Marketing of Cabbage and Potato crops: A Comparative Study of Manipur and Nagaland States. *Plant Archives*. 21(2): 345-350.
- Singh, Th. Motilal and Sharma, Amod. 2021b. Implication of Indigenous Farming Practices on the Employment and Income Pattern for the Selected Horticultural Crops of Nagaland and Manipur States of India. *The Journal of Rural and Agricultural Research*. 21(2) : 1-6.
- Thakur, D.S., Singh Anmol and Sharma, Ananad, 1988. Efficiency and Weakness of Regulated Markets. *Indian Journal of Agricultural Economics*. 2(1): 34-38.
- Tilekar, S. N. 1985. An Analysis of Net Prices received by Alphonso Mango Growers of Ratnagiri District. *Indian Journal of Agricultural Economics*. 40(3): 23-27.
- Verma, Ajay and Singh, K. P. 2004. An Economic Analysis of Post Harvest Losses in Fresh Vegetables. *Indian Journal of Agricultural Marketing*. 18(1): 135-139.
- Yadav, Mukesh. Kumar, and Sharma, Amod, 2019. Assured Income and Employment of beneficiary and non-beneficiary through different activities Implemented under watershed programme in Nagaland. *International Journal of Current Microbiology and Applied Sciences*. 8(9): 2953-2963.