

# **Role of Horticulture in Tamenglong District: A Survey Account of 180 Households in Ten Villages Focussing On Horticultural Crops**

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## **I. INTRODUCTION**

The world today has encountered several issues and challenges, for instance food Inflation, global climate change, malnutrition, unemployment and poverty etc. Recently, in 2007-2008, severe drought had been experienced in India, U.S.A. and Russia. These countries were fanning fear from repeated food crisis of 2007-2008. Many farmers too had committed suicide in India those periods. Now, the global world has to expand food grains up-to 70 percent increases to feed the world by 2050. So also; Seventy percent of the rural people live in rural areas around the world. People cannot afford even \$ 2.0 per person in a day and most of them lived in extreme and grave poverty. Agriculture is a source of livelihoods for an estimated 86 per cent of rural people (2.5 billion people) and provides jobs for 1.3 billion small holders and landless workers. Majority of these poor are found in Sub-Saharan Africa, Asia, and in other developing countries.<sup>i</sup> The district Tamenglong in the State of Manipur is one of the most 500 backward district in the country. But the district topography and agro-climatic condition are found well suited for growth of horticulture crops. It is also being the remotest district from the state capital, Imphal. The district is in complete absence of secondary (manufacturing industries and tertiary sector). Therefore, in this paper an attempt is made to address; how the rural poverty structure can be improved by the growth and expansion of horticulture crops cultivation in the district. As land are abundantly available for horticulture crops to produce more surpluses for market. The paper seek to address such immense opportunities, potentiality, constraint etc., the survey revealed that growing horticulture crops will be the best option for the rural people to fight against malnutrition and food security and health issues, climate issues etc. It is also intended to address why is jhum cultivation prevailing even today? when it is less rewarding activities and environment degradation and deterioration have been prevailing due to continuous jhumming over so many decades, Therefore, an attempt is made to rightly address such issues like poverty, climate change, health and nutrition of children and women, employment generation in the rural areas. The paper reflect on primary data using tables and graphs where necessary; the data were compiled from 180 survey households in ten villages of the District Tamenglong.

## **II. PROFILE OF HORTICULTURE IN THE DISTRICT**

The Tamenglong district has indeed become a major producer of orange for the State. Orange does grow well in hilly and sub-tropical climate even up to an elevation of 3000MSL. The district had celebrated 9<sup>th</sup> State Level Orange Festival, 2012 On 18<sup>th</sup> and 19<sup>th</sup> December 2012. 232 orange stall were open and about 300 growers came from the different villages. Chief Minister in his addressed was mentioning of the employment generation and its avenue out of orange growing and talk on the potentiality for tourism industries too. The then deputy minister was also dwelling his speech on kitchen gardening as a blessing for the people of the town. He further stated that the farmers must put in more effort and labour and must use scientific knowledge to ensure that orange can become commercially viable for export<sup>ii</sup>. The district is said to be the rainiest place in the State, with annual rainfall (precipitation) of 3135mm. In spite of this heavy rain annually; water is scare in many villages due to rough hills and terrain mountainously clad; the water ran off and water is not preserved during rainy season. Therefore, on dry season; people are facing acute shortage of water. On account of such suitability of climates and topography of the place, crops like lemon, lime, guavas, jackfruits, square etc., are abundantly found and are grown rampantly on their land. Vegetable like's mustard, banana stem, bean, gourd, pumpkin, white pumpkin, yam, taro, brinjal, parkia etc., are ultimate vegetables consumed in every pocket of the district and not a single village was found without growing horticulture crops. Interestingly, cash crops like ginger, turmeric, chillies, tea, and tobacco were also some important crops grown in their small farm or in their kitchen garden. The largest plantation trees found throughout the whole district is bamboos of various kinds' viz. inpei, inpui, inriang, gachiap (all are local names) and canes is obtainable in plenty. Most households grew at the family's courtyard (homestead land) i.e. in courtyard or backyard of the house normally used for construction materials of thatches and bamboo roof, wall and mud houses. These are a clear indication that plantation crops are helping them in construction of rural houses mostly of kutchra and small hut usually dwelt by them. If

bamboos are grown in large scale, even papers mill and small scale industries and cottage industries for canes and bamboos can be set up in near future. In this manner, more jobs can be provided to the up-coming younger generation or posterity of the district. Per capita income of the households can be improved substantially. As reported by Mr. Meigeini Kamei of Nungba that there were so many villages surrounding the Nungba sub-division who earned a good sum of money by going for horticultural activities. These villages are namely Okoklong, Thingow, Mukti, Taodaijang, and Thingdingmun etc., under Nungba Sub-division which have enormous potentiality for farming of oranges and citrus fruit crops. He had also witness for 2-3 decades that those villages and elsewhere were suitable for the production of horticultural crops and are not investing enough and managing the land economically, in this connection sufficient measure must be taken up by Government and NGOs and other entrepreneur or private sector to boost this horticulture sector. Then poverty alleviation and unemployment of the rural people can be drastically addressed by engaging themselves in these highly rewarding horticultural crops cultivation<sup>iii</sup>.

### III. METHODOLOGY

The sample size were 180 households, the structure questionnaire were interview to every head of the households of the ten purposively selected ten villages in the district. The villages were namely; Tajeikaiphun, Puluon, Longjang, Chiuluon, Farm-land, Dailong, Piuleklong, Pallong, Namtiram and Siguilong. This is being done, because very few materials are available on the horticulture crops information of the district. Therefore, discussion done here is purely based on primary data that had been gathered by author from the survey carried out during September to December 2012. The data so obtained would be presented in tables and graphs with few descriptions and explanation.

### IV. HOUSEHOLDS' EXPENDITURE PATTERN

The households' expenditures are broadly classified under three heading food, non-food and capital expenditure. Each basket has a number of various items or component. Food expenditure basket includes cereals, Tuber, Meat & Fish, Egg, Vegetables, Pulses, Fruits, Oil & Fat, Spices, Tobacco and betel, etc. Non food expenditure includes housing and household facilities, electricity bills & firewood & Kerosene, Communication & Transportation, educational expenses, clothing & footwear, durable goods, taxes, festivity and ceremonies and unseen expenditure. Capital expenditure includes land, land development, building and other construction, transport equipment, machinery and equipment, furniture and other equipment, small tools, farm assets etc. From the data; it is learnt that many households spend more on non-food expenditure meaning the rural people necessarily for education of their children and to meet other basic need. This is followed by heavy consumption expenditure on food for survival as most rural people were confining to manual work and muscular work in the field and they were also largely meat consumer. And thirdly, capital expenditure is lesser than other because only few rich rural people spend more on capital expenditure because many households' people cannot own modern gadgets like laptop, motor, vehicles light and heavy ones etc. these expenditures data shown in Table. 1.1 are neatly drawn in line graph for better understanding as shown in fig.1.1 below too.

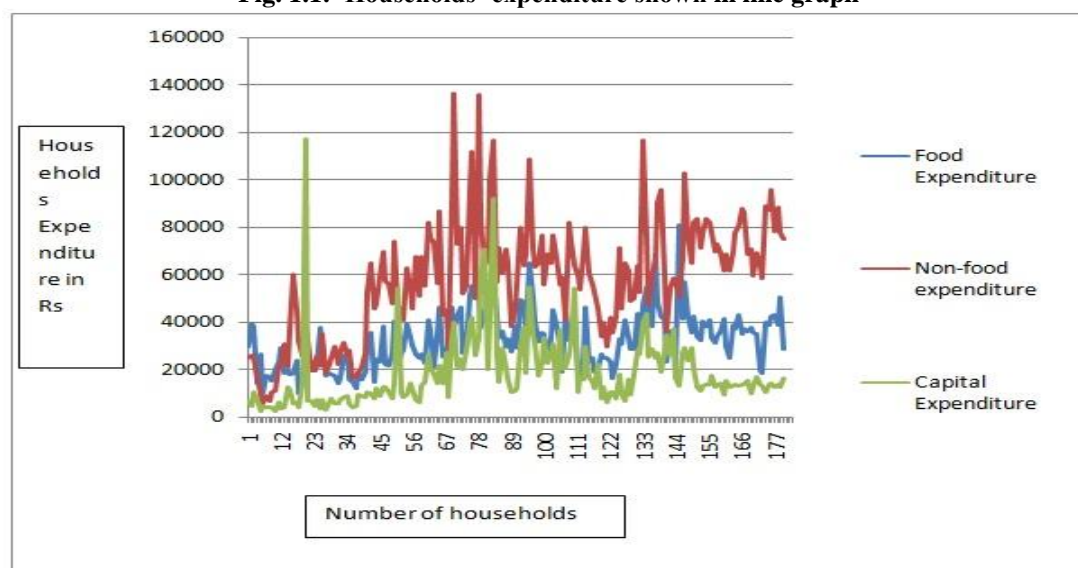
**Table 1.1: Households' expenditure**

Food exp.	Non-food exp.	Capital exp.	Food exp.	Non-food exp.	Capital exp.	Food exp.	Non-food exp.	Capital exp.
30000	25000	6700	23000	55715	14800	25300	40045	12600
39480	26215	4900	41100	82015	26800	25000	30015	6600
38600	24965	10800	36900	75515	20500	23500	42015	10500
14650	16915	7450	21400	73615	18000	16600	36015	10500
26600	9515	2650	36200	56515	14300	22700	42015	8100
10200	5965	4860	46200	87015	21900	33100	71515	17900
17400	9055	4300	25500	43015	14500	31100	46015	9900
17250	7225	4100	28000	45515	27200	41000	65015	6900
15450	10715	4000	30500	29515	8500	33800	62015	16000
20500	11065	2850	46500	91015	33200	28800	49015	9500
23700	21615	6600	38300	136515	40000	28600	50015	18200
29400	21715	3700	42500	73015	21500	44000	64015	28000
18550	31015	4000	46500	80015	24700	30000	53015	26700
19700	21515	12500	27000	52515	20400	48000	117015	40000
18450	36815	11550	29000	55515	28000	54700	75515	43700
18750	60395	6000	51500	96015	40000	39700	47415	25500

24200	44615	6600	55200	112015	42000	38600	59015	28900
10350	32015	4400	53400	50415	25800	69000	68015	25200
16750	26415	14000	52200	136015	33500	48500	90515	27000
23550	38315	117022	38000	84015	62000	42500	96015	19400
26200	32515	6900	44800	64015	71000	41000	60015	27500
23600	19715	7150	38800	67915	20000	23500	36515	34500
19630	19615	4800	51400	100015	42400	36400	54515	26000
22300	25815	7300	58000	117015	92000	36500	58515	37000
37800	22115	3700	42900	57015	26100	18500	58415	16600
31200	35015	7500	33600	71715	15000	81000	50515	13200
17900	18515	3300	36500	61015	29400	41500	67015	27000
18500	22515	6500	30100	71015	20800	57000	103015	29000
18400	24915	8100	32900	65015	16200	42000	76015	24000
17700	30015	5700	27700	38515	10800	35500	65015	29300
14300	22715	5900	38500	45015	11000	42600	82015	20700
16400	27770	7600	29500	56015	12200	34400	83515	12500
26300	31515	8500	49700	80015	30200	32800	71315	11300
26000	26000	9000	48500	64015	37500	40500	77615	13500
16100	28115	6000	35000	68815	18500	38200	83515	13700
15000	16415	4100	65000	109015	54700	41300	82015	13900
12300	17015	4700	50500	71015	34700	33500	77815	17700
19300	19015	9700	40500	63515	30700	31300	70015	12500
16000	21615	9200	32000	65015	17700	34200	73015	13500
19100	27315	8600	35800	77015	22700	36500	69515	14300
28800	53015	10700	35300	56015	33500	41800	62015	9700
35500	65015	10200	25500	69015	23000	29700	69015	15400
15200	46015	7800	33600	65215	27000	25200	62115	12600
24500	48015	12200	45300	77015	31100	39000	70015	13500
23300	59015	9000	39000	67215	12000	37500	78015	13800
38500	70015	13000	31000	56015	36500	43200	80515	13500
22500	57515	12700	19500	59015	20300	35200	88015	14000
21800	56015	10400	44400	41015	21200	37300	86515	13700
27500	48015	7800	32700	82015	26500	36300	69015	15600
40500	74015	14200	37000	74515	31200	38000	71015	10000
22500	47015	54315	41000	64215	54200	36000	59615	12800
27300	45015	10250	19600	60015	10700	35300	69215	16800
28100	41015	8300	16200	54015	16800	19900	63515	13800
39500	63015	9500	25000	70015	15800	18500	58515	13300
33500	54015	14600	46300	80015	30000	39900	89015	10800
30500	46015	11600	23500	61015	17000	39200	87515	13700
26700	68015	7700	25300	56015	15000	42900	96115	14200
25300	51015	6600	19000	53015	12300	43300	78215	12700
26500	68015	13100	21000	46015	22500	39200	88415	13800
30000	25000	6700	26800	34015	8100	50700	78015	12700

Source: Author survey

**Fig. 1.1: Households' expenditure shown in line graph**



**V. LAND UNDER HORTICULTURE AND CEREALS CROPS WITH REVENUE**

The households' surveys revealed that many families have been enjoying large share of additional income from horticultural crops. Earlier Jhum cultivation was the main occupation and highly rewarding activities. But, now land are losing its fertility and productivity as well as revenue are very declining and left the family to buy rice from the Public Distribution System(PDS) rather than feeding on their own produce for the whole year. As seen in the data, given in table 1.2 horticultural crops turn out to be highly rewarding activities giving an additional income to farmers, farmers now realize the importance of this occupation. It is also seen price of fruits and vegetables are high in all countries and people demand for fresh and chemical free horticulture products are ever rising. These products were mainly consumed by rich and affluent people who dwell in cities and town and are becoming diet of the rich people; the poor people are not consuming due to high price. This is happening due to shortage of supply side of fresh fruits and vegetables. Therefore, these products has to be produce in greater scale and all people in rural and urban alike can sufficiently consume when we produce enough for consumption and sale. The fig 2.2 depicts how much revenue is generated by small exploitation of land in the villages i.e. in average 3-4 acres of land under horticulture in the rural village.

**Table1.2. Land under horticulture and cereals crops with its revenue:**

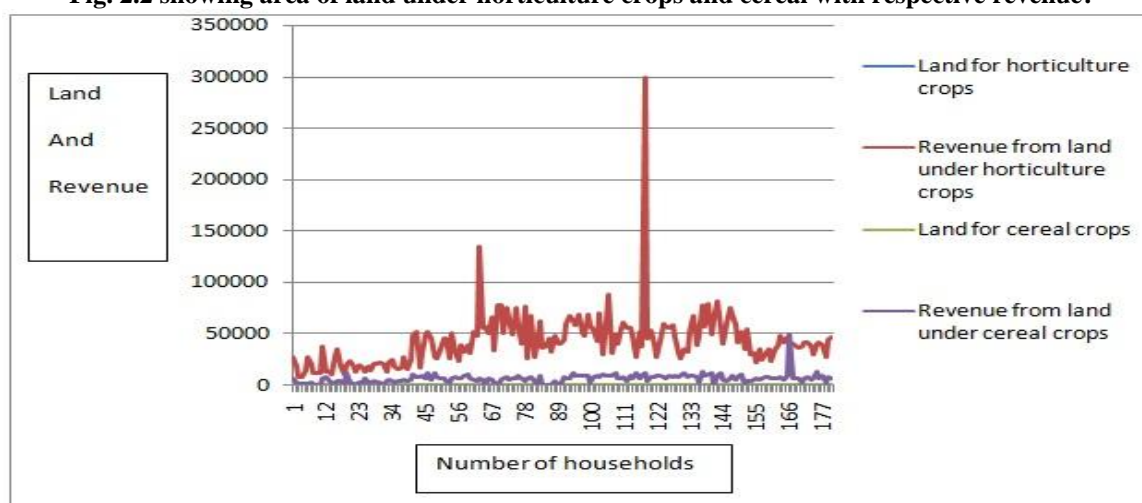
Land for horticulture crops	Revenue from land under horticulture crops	Land for cereal crops	Revenue from land under cereal crops	Land for horticulture crops	Revenue from land under horticulture crops	Land for cereal crops	Revenue from land under cereal crops
4.5	27000	4	6000	3	44000	1	8000
5	17500	2	2000	5.5	59600	0.5	6000
3.5	7500	0.5	1500	4.5	67000	0.5	7000
3.5	7800	0.5	950	5	61500	1	12000
3.5	14500	1	800	3.5	58000	1	9000
6.5	27200	1	900	6	69000	1	8700
3.5	19900	1	2000	3.5	50400	1	8900
4.5	11350	0.5	900	3	48100	1	9000
4	12000	0.5	0	6	68600	1	9500
3	11800	0.5	0	4.5	58000	1	2700
3.5	37500	0.5	6000	4	52500	0.5	8000
2.5	12200	0.5	8000	3.5	43200	1.5	9000
2.5	12600	0.5	4000	5.5	69700	0.5	8200
2	10600	0.5	3000	3	29000	1	10000
4	28200	0.5	1700	6	64000	1	9000
3.5	35000	0.5	4000	5.5	87500	0.5	9600
3	17800	0.5	4500	3.5	30400	0.5	9000

2	10350	0.5	1500	5.5	48500	2	12000
2	19800	0.5	12000	5.5	39900	1	6700
4	22500	0.5	3000	5.5	55800	0.5	7000
2	18000	1	1000	7	60500	0.5	8000
2	12400	0	0	8	56000	0.5	4200
4	19800	0.5	3000	6.5	56000	1	9000
4.5	17200	0.5	3000	4.5	48000	1	7000
4	13000	1	7000	5.5	27000	1	12000
2	17900	1	2500	7.5	51400	1	7000
5.5	13350	0.5	3100	4.5	37200	1	9000
6.5	20000	1	3500	5.5	299700	2	12000
2.5	20900	1	3000	4.5	45500	1	3400
4	21900	0.5	3000	5.5	52500	2	8000
5	21000	0.5	400	7.5	39000	2	8000
1.5	12200	0.5	3800	4	27000	1	9000
4.5	22200	1	5000	6	42700	2	9500
3.5	24300	0.5	3500	9	59000	1	8000
3	17800	0.5	2500	8	56800	1	7000
2	15300	0.5	3500	8.5	55000	2	9500
2	16000	0.5	3700	9	58700	1	8500
3	26600	0.5	4700	9	46500	1	9000
2.5	15200	0.5	4500	3.5	31200	1	7500
3.5	25000	0.5	4800	4	26000	0.5	8700
3.5	47200	2	10000	4	34500	4	12000
5	51700	1	8000	3	31900	1	8000
2	17000	1	7500	5.5	51300	2	9000
4.4	31000	2	9000	5.5	66700	1	8700
5	49000	0.5	7000	5.5	38900	0.5	8000
7	51700	2	12000	4	48300	0.5	3000
6	45000	0.5	5000	4	78000	0.5	13000
3.5	26500	2	12000	5.5	57000	1	9500
5.5	25500	1	8000	6.5	78500	1	10000
9	34900	1	7000	5	49000	2	12000
4.5	45000	1	7000	4	63700	0	0
9	44900	0.5	3500	6.5	81700	1	9500
4	26200	0.5	3000	6	53700	2	12000
8	50000	2	6500	4.5	40500	0.5	4700
6	31700	1	8000	6.5	60000	0.5	4000
7.5	23700	1	6500	5	75000	1	7000
8	38900	0.5	7000	6.5	68000	0.5	9700
5	32000	2	9000	7.5	57500	0.5	4700
7	39000	2	10000	3.5	40700	0.5	7800
4	30500	0.5	6000	3	51600	1	10000
3.5	51900	0.5	5000	7	35300	0	0
4.5	47500	0.5	4200	7.5	54000	0.5	4500
4.5	135000	0.5	6700	4	29200	0.5	4500
3	55000	0.5	5500	6.5	31000	1	5500
6	57400	0	0	2	21200	1	6500
4	51000	0.5	7000	7.5	35000	1	5500
5	65500	0.5	5000	6.5	25000	1	6000
2.5	33700	0.5	3200	5.5	29700	2	8000
6.5	77000	0	0	4	35000	1	8000
4	77000	0.5	5200	5	22900	1	6700
5	51000	1	7000	4.5	34000	1	7000
5	75000	1	8000	7.5	38700	1.5	6000
5.5	64200	0.5	4700	6	48000	2	7500
3	49300	1	6000	7	41000	1	5500

4.5	75200	1	7000	6	46000	1	9000
4.5	57900	1	9000	6	41000	1	50000
4	40000	1	6700	4.5	40000	2	6000
6	76200	0.5	3800	4	39000	1	6000
2	25900	0.5	7000	6	36500	1	7000
6.5	66700	1	7500	4	37000	0.5	3000
3	26500	0.5	3500	6	40700	2	7000
2	38000	0	0	5	41000	1	8000
3.5	62000	0.5	9000	6	37000	1	5500
3	36600	0	0	3	29000	1	6500
3	37100	0	0	4	40000	1	13000
3	45300	0	0	6	41000	2	7200
3	32800	0	0	6	38800	0.5	8700
3	47500	0.5	4500	3.5	26700	0.5	3000
2.5	40200	0	0	4	44000	2	8000
3.5	40000	0	0	6	46000	2	7000

Source: Author survey data

Fig. 2.2 showing area of land under horticulture crops and cereal with respective revenue:



## VI. HOUSEHOLDS' ANNUAL INCOME FROM HORTICULTURE AND NON-HORTICULTURE VENTURE

The households' annual income of 180 families indicates higher return than that of cereal crops. The annual income from horticulture is three to four times more beneficial than non cereal annual income as depicted in Table 1.3 and fig. 1.3 given below<sup>iv</sup>:

Table 1.3 Households' annual income from horticulture and non-horticulture venture

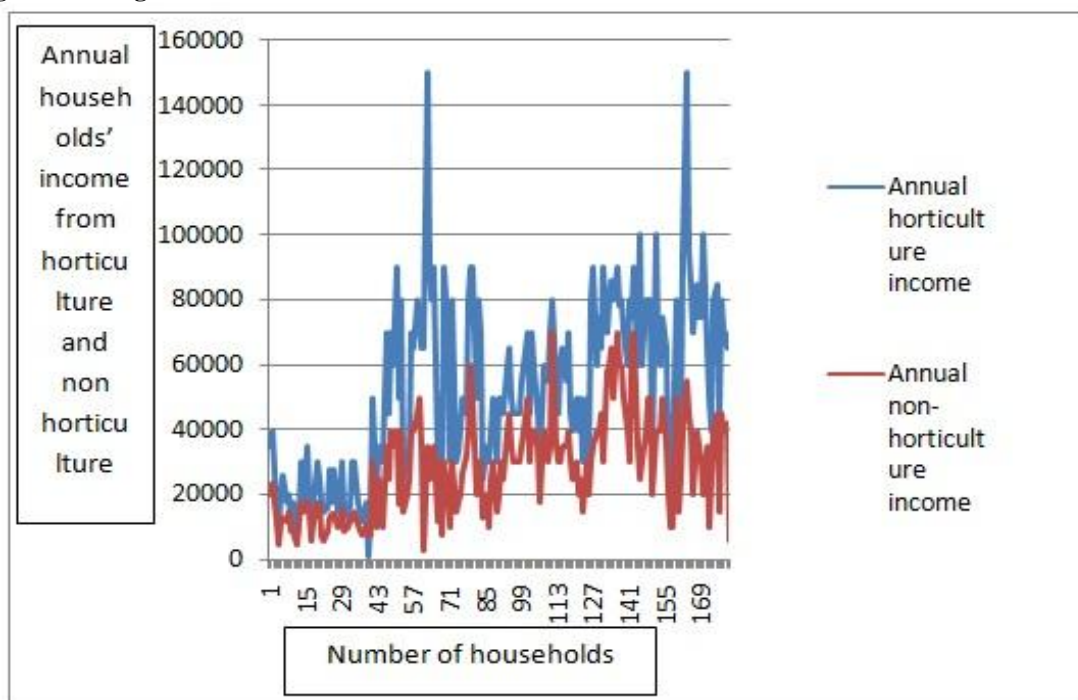
Annual horticulture income	Annual non-horticulture income	Annual horticulture income	Annual non-horticulture income
35000	20000	50000	30000
40000	24000	45000	25000
15000	12000	60000	40000
8000	4500	65000	45000
20000	12000	50000	35000
26000	13000	45000	30000
18000	12000	45000	30000
20000	15000	45000	30000
10000	9000	55000	35000
18000	9000	60000	40000
7000	5000	70000	50000

15000	12000	45000	30000
30000	18000	70000	40000
17500	15000	60000	40000
35000	18000	45000	35000
20000	15000	30000	18000
10000	6000	45000	30000
18000	12000	60000	40000
30000	18000	55000	30000
25100	17000	70000	35000
18000	7000	80000	70000
15000	6000	55000	35000
16000	9000	45000	30000
28000	13000	60000	30000
18000	14000	65000	35000
28000	14000	55000	35000
15000	10000	70000	40000
19000	11000	45000	30000
30000	16000	40000	25000
16000	9000	50000	30000
13000	10000	40000	20000
17000	12500	50000	25000
30000	12500	30000	15000
30000	15000	50000	30000
17000	11000	30000	20000
14000	9000	80000	30000
12000	8000	90000	35000
18000	11000	60000	40000
1200	8000	75000	40000
13000	8000	65000	45000
50000	30000	90000	30000
20000	10000	70000	58000
35000	25000	80000	60000
30000	20000	86000	65000
30000	10000	80000	50000
70000	35000	90000	70000
45000	25000	78000	60000
70000	40000	80000	60000
60000	35000	70000	50000
90000	40000	60000	40000
50000	17000	80000	30000
80000	40000	75000	65000
25000	15000	90000	70000
30000	20000	60000	35000
35000	25000	100000	25000
70000	40000	60000	30000
65000	40000	80000	40000
80000	45000	80000	50000
75000	50000	80000	50000
65000	35000	30000	20000
65000	3000	100000	40000
150000	35000	65000	40000
90000	25000	60000	40000
80000	30000	75000	50000
90000	35000	65000	35000
30000	12000	25000	20000
50000	30000	40000	10000
15000	8000	30000	10000

90000	30000	80000	50000
70000	20000	25000	15000
30000	10000	35000	25000
80000	30000	95000	40000
30000	15000	150000	55000
33000	18000	95000	45000
40000	20000	85000	40000
50000	27000	70000	20000
45000	32000	85000	40000
80000	40000	75000	35000
90000	60000	75000	30000
90000	50000	100000	20000
50000	20000	65000	35000
80000	30000	50000	10000
70000	30000	40000	25000
25000	13000	80000	40000
35000	20000	85000	45000
30000	10000	45000	15000
40000	25000	80000	45000
50000	30000	70000	40000
30000	15000	65000	42000
50000	20000	70000	6000

Source: Survey data

Fig.3.1 showing annual income of households from horticulture and non-horticulture activities



## VII. MAJOR DRAWBACKS ENCOUNTERED TOWARD SUCCESSFUL STORY OF HORTICULTURE

1. Poor means of communication and transportation
2. All the village link road were un-surfaced road
3. No credit facilities and banking system
4. Markets are of local nature and very small
5. Horticulturists were using traditional tools and implement



6. Some disease of the plants were left untreated without no knowledge of science.(for instances Orange and Parkia trees were dying in some villages due to viral infection attack in the roots, tree trunk and leaves of the plants)
7. The horticulture produce were mostly untransformed and consume in fresh and raw form
8. Non existing of manufacturing industries and tertiary sector is major problems
9. Perish ability nature of crops and lack of proper storage facilities like go down is extremely faced.
10. Lack of Irrigation due to undulating and terrain mountains

### **VIII. CONCLUSION**

The poor, backward, and remotest district in the state of Manipur has better chance of growth in the economy by full and active involvement of farmers in these horticultural activities. These activities would be the lifeline and economic based of the people in the villages. If all these potentiality of land, favourability of horticulture crops are taken into consideration; people income will be enhance, job creation will be at their own village periphery and proper dietary pattern and high standard of life can be also experience in all villages. This is possible as the world is globalized village, markets are integrated, trade are liberalized etc. Most interesting Look East Policy and Trans Asian Railway Line is to be finished by 2015-2020, opening up of International Highway I and II would possibly push up the sector. So, the horticultural crops rich district can make a rapid leap in development front in near future.

### **REFERENCES**

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