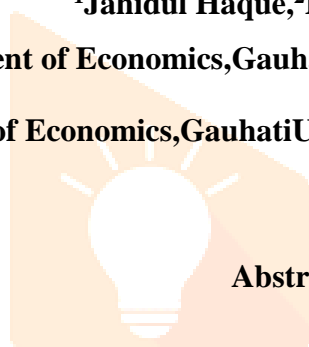# A FINANCIAL APPRAISAL OF TRADITIONAL AND HORTICULTURE CROPS: A CASE STUDY OF ASSAM
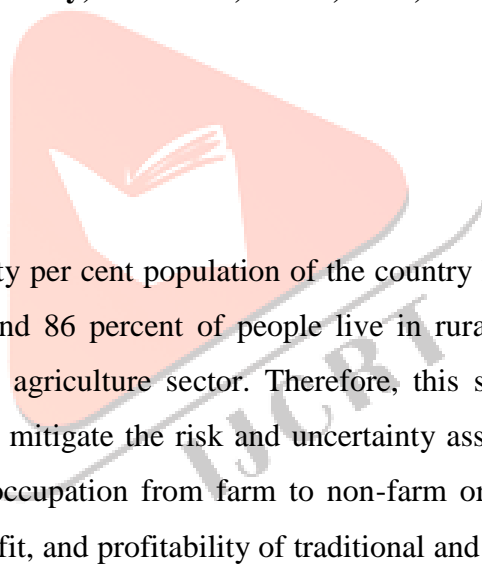
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Abstract

India is a rural-based economy where approximately seventy per cent population of the country lives in rural areas. In the state of Assam, it has been found that around 86 percent of people live in rural areas. The livelihood of these people fundamentally depends on the agriculture sector. Therefore, this sector has to acknowledge the huge burdens of the rural population. To mitigate the risk and uncertainty associated with traditional farming, the rural people either shifting their occupation from farm to non-farm or agricultural allied activities. This paper seeks to calculate the cost, benefit, and profitability of traditional and horticultural activities. For determining the cost of production of crops properly, the cost concepts of the CACP has been used. Various financial ratios have been used to show the relative return of the traditional and horticultural activities. It has been found that the allied activities are being given more importance by the farmers in rural Assam. The farmers are giving more importance to allied activities like horticulture, fish, and dairy farming whereas the farmers are avoiding traditional farming activities. The rate of return from the practicing of horticultural activities is relatively more than the traditional crop farming. In the allied activities, the required amount of capital or cost of production is comparatively more than the other farming activities. It has been found from the primary investigation that most educated young farmers practice high returnable crops avoiding traditional ones. This is established by the fact that the horticultural activities are relatively more

profitable which makes the farm household more strong to deal with the agrarian crises. The success stories of the three sample districts which have exhibited significant diversification in the sphere of horticulture offer sound evidence that a strategy of rural diversification can be a targeted strategy for averting and managing the agrarian crisis that recurrently plagues the rural sector.

Keywords: Allied Activities, Assam, Diversification, Profitability, Rural Economy, Traditional Activities.

I. INTRODUCTION:

More than half of the population in the developing countries lives in rural areas and they are connected to agriculture as a way of life (Ray, 2007). India is a rural-based economy where approximately seventy per cent population of the country lives in rural areas. In the state of Assam, it has been found that around 86 percent of people live in rural areas. The livelihood of these people fundamentally depends on the agriculture sector. Therefore, this sector has to acknowledge the huge burdens of the rural population. To mitigate the risk and uncertainty associated with traditional farming, the rural people either shifting their occupation from farm to non-farm or agricultural allied activities. To reduce the huge burden on the agricultural sector, it is the broad-spectrum obligation for the rural people to diversify their income and employment Portfolio. It has been observed that most of the horticulture crops lead themselves to process and value addition to products. The relative importance of horticulture crops is well established in human nutrition as a source of food. They are highly remunerative and are generally considered as high-value crops and are suitable for earning foreign exchanges (Das et al, 2007). Diversification of agriculture through horticulture can minimize the impact of major crop failure and provide security of income to the farmers.

Agriculture as a subsistence or a commercial activity has gained importance over time in a developing economy. However, with time, farm practices have been improved to meet the growing demand and to enhance the quality of agricultural products. Agricultural practices are transformed from the subsistence stage to commerce and trade; natural inputs are being increasingly replaced by purchased inputs (Lekhi and Singh, 2004).

It has been found that allied agricultural activities like fishery, dairy farming, and horticulture are the emerging sectors with enormous market opportunity in the state of Assam. In this section, the study has made an attempt to make a comparison of horticulture production (vegetable) with traditional farming in case of profitability at the grassroots level. For satisfying the objectives of the study, five traditional crops (irri, bao and ahu paddy, sali, jute, and mustard) are taken from traditional farming whereas six vegetables (cucumber, Chilly pointed guard, ridge guard, potato, tomato) are taken as an indicator of horticulture farming.

II. DATA SOURCES AND METHODOLOGY

The study covers the state of Assam and is based on Primary data. Since our study is focusing on the rural economy, therefore three rural-centric districts of Assam, i.e. Barpeta, Nagaon, and Sonitpur districts have been selected to investigate the aforesaid issues. Secondly, from each district, two blocks have been selected purposively. One block is allied activities concentrated area and the other is the traditional farming concentrated area. From each block, two villages have been selected randomly. The household will be selected randomly for the collection of the required information.

The sample size has determined by using the following formula provided by Taro Yamane in 1967 i.e.

$$n = \frac{N}{1 + N(e)2}$$

Where,

n= sample size

N= population size

e= error level or per cent confidence interval

N = Population of the study area

K = Constant (1)

e = Degree of error expected

n=Sample size

In this study, cultivators or farmers are considered as a population. The total population in the sample areas is 3862. According to the Yamane method of sample size determination approach, the idle size of the number of the sample is 363.

Table -1 Distribution of Sample Size						
Sector	District	Status	Development block	Name of the village	Number of cultivators(population)	Number of sample size
Fishery	Barpeta	Highest Production	Mandia DB (crop)	Kismat Moinbari	321	30
				Bardalani N.C	149	14
			Bhawanipur DB (fishery)	Dabaliapara	339	32
				Dakaliapara	584	55
Dairy	Sonitpur	Highest Production	Behali DB (crop)	Bahbari Pathar	250	23
				Bali Gaon	225	21
			Baghmara DB (Dairy)	Nahar Bari	197	19
				Monabari Basti	218	20
Horticulture	Nagaon	Highest Production	Juria DB (horticulture)	Balikatia	450	42
				Baralimari	442	42
			Rupahighat DB (crop)	Borghat	401	38
				Batamari	286	27
Total population (cultivators)& sample					3862	363
Source: author's calculation						

III. TRADITIONAL FARMING ACTIVITIES: AN OUTLOOK TO COST AND BENEFIT

In this study, traditional farming indicates that cultivation of crops which are cultivated by following old line and conservative methods of production and substance in nature. The production of ahu and bao paddy, boro or irri, jute, mustard, sali rice, pulses, and other cereals and oilseeds are included in this category. The researcher considers the production of ahu and bao paddy, boro or irri, jute, mustard, sali rice to make a comparative study with the production of allied activities like horticulture crops and pictorial the relative profitability of the aforesaid farming and allied activities.

Owing to find out the gross and net margin of the crops, the researchers have to explore the concepts of cost of production with proper efficacy so that the cost contribution of any factor should not be excluded. For determining the cost of production of crops properly, the researcher uses the cost concepts of the

Commission for Agricultural Costs and Prices (CACP) which was established in India in 1968. Total production costs comprise fixed and operational costs. Although the cash expenses such as buying of inputs like seeds, fertilizers, plant protection material, etc., are directly observed, utilization of the fixed assets (like land, machinery, implements, etc.) and owned inputs like family labour (FL) in production are also accounted to give a realistic picture of the total costs incurred by the farmers. In addition to fixed and operational costs, the cost concepts (Costs A, B, C) are used by the Commission for Agricultural Costs and Prices (CACP) are presented in this section. Based on the present Comprehensive scheme of CACP cited in Sen and Bhatia (2004), CACP (2012), and Manual on Cost of Cultivation Surveys (CSO, 2008); various cost concepts calculation are explained below:

Concepts Related to Costs of CACP

Cost A1 = Value of hired human labour (HL), hired bullock labour (BL), owned bullock labour, the value of owned machine labour (ML), hired machinery charges, the value of seed (both farms produced and purchased), the value of insecticides and pesticides, the value of manure (owned and purchase) value of fertilizers, irrigation charges, depreciation on fixed assets, land revenue, cesses, and other taxes, and interest on working capital are the components of **Cost A1**. But in this study, it has been found that all the surveyed households are using the hired tractor for ploughing their lands instead of hired or own bullock labour. Since the ploughing of cultivation by tractor is relatively cheaper and has other advantages.

The remaining cost structure of A2, B1, B2, C1, C2, and Modified Cost (C2M) are explained in the following table 6.12.

Table-2 CACP Cost Structure of Agricultural Crops

Cost A2 = Cost A1+ Rent paid for leased-in land,
Cost B1 = Cost A1 + interest value of owned fixed capital assets (excluding land)
Cost B2 = Cost B1 + Rental value of owned land (net of land revenue) and rent paid for leased-in land
Cost C1 = Cost B1 + imputed value of family labour
Cost C2 = Cost B2 + Imputed value of family labour
Modified Cost (C2M) = Cost C2 + marketing costs and transportation report

Source: Compiled from Sen and Bhatia (2004, p.96) and CACP (2012)

Among all the cost concepts of A, B, C, the Modified Cost (C2M) is most reliable to calculate the profitability of the farming of various crops because it includes all the paid out and imputed cost directly or indirectly related to the cost of production of various crops. Apart from this, it also includes both the fixed and variable costs of production.

To measure the potentiality or efficiency of crop production, gross margin and net margin analysis will be used. The performance and economic viability of the production of the crop are determined by the use of the financial profitability ratios such as benefit-cost ratio, expense- structure ratio, rate of return, and gross ratio. To find out the profitability of various crops, the researchers have calculated the various cost of CACP i.e. COSTA, COST A2, COST B1, COST B2, COST C1, COST C2, and Modified Cost (C2M) but **COST C2M** is considered as a total cost in this study. In table-3, the researcher illustrates all the components of **COST C2M** in detail.

III-A. Cost of Production of Traditional Crops:

Various types of cost related in the production of traditional crops has been explained in the table-3. broadly total cost of traditional crops has been categorized into total fixed cost and total variable cost. The various sub-cost components of the aforesaid cost category has been calculated and shown the following table.

Type of cost	Traditional Crops					Horticulture					
Production cost	Paddy (ahu and bao)	Paddy (irri/boro)	Sali	Jute	Mustard	Potato	Chilly	Cucumber	Pointed guard	Ridge guard	Tomato
Hired labour	1087.96	2207.05	1670.77	2750	318.49	1914.81	3516.65	7917.86	8718.99	8964.48	9157.58
Family labour	1062.95	2672.07	2219.29	3304.79	618	2545.29	5865.17	11003.6	18086.8	10829.9	12142.21
Sub-total human labour	**2150.91**	**4879.12**	**3890.06**	**6054.79**	**936.49**	**4460.1**	**9381.82**	**18921.4**	**26805.79**	**19794.38**	**21299.79**
Bullock labour	194.44	0	0	867.89	0	0	0	0	0	0	0
Machine labour/ cost for tractor	555.56	1356.34	896.25	574.46	706.12	1456.38	1282.02	1392.86	1670.82	1039.23	459.46
Seed	354.44	641.69	789.45	120	123.88	6211.1	653.83	1578.57	1941.64	1924.74	1800
Fertilizer	0	360.33	258.16	187.08	100	1600	1640.11	1366.67	1039.23	2374.17	1400
Plant protection	0	321.03	150.29	386.29	0	654.58	1026.38	1889.29	2000	1167.42	1596.87
Sub-total material inputs	**354.44**	**1323.05**	**1197.9**	**693.37**	**223.88**	**8465.68**	**3320.32**	**4834.53**	**4980.87**	**5466.33**	**4796.87**
Irrigation charges	0	1351.17	0	0	0	896.43	863.49	1125.38	1385.19	1558.67	1589.34
Interest of working capital	200	295.86	190.56	100	120	950.86	845.29	1158.49	1600	1371	1460
Total operational cost	**3255.35**	**7558.51**	**5984.21**	**8190.51**	**1866.49**	**14382.16**	**13984.16**	**25148.79**	**33457.48**	**26299.94**	**26556.12**
Depreciation cost	56.38	180.46	0	36.87	36.87	58.65	583.54	588.54	595.54	785.54	794.54
Rental value (own land)	700	1150	750	700	800	1200	1000	1800	2000	1400	2000
Interest on fixed capital	0	1151.17	160	256.46	200	696.43	663.49	925.38	1185.19	1358.67	1389.34
Total production cost(a)	**4211.73**	**11687.2**	**6894.21**	**9783.84**	**3723.36**	**16030**	**16940**	**30746.6**	**41385.3**	**39935.2**	**35289.34**
Material input	75.82	225.82	175.82	25.82	34.18	334.18	559.18	684.18	634.18	734.18	784.18
Transport cost	346.32	200	150	560	120	120	900	3500	3500	2600	2000
Human labour cost	38.75	133.75	83.75	183.75	63.75	403.75	828.75	1228.75	1378.75	1353.75	1368.75
Sub- total marketing cost(b)	**460.89**	**559.57**	**220.45**	**769.57**	**217.93**	**857.93**	**2287.93**	**5412.93**	**5512.93**	**4687.93**	**4152.93**
Total cost	**4672.62**	**12246.7**	**7114.66**	**10553.4**	**3941.29**	**16887.9**	**19227.9**	**36159.5**	**46898.23**	**44623.13**	**39442.27**
Total fixed cost (TFC)	**756.38**	**2481.63**	**910**	**993.33**	**1036.87**	**1955.08**	**2247.03**	**3313.92**	**3780.73**	**3544.21**	**4183.88**
TVC	**3916.24**	**9765.11**	**6204.66**	**9060.08**	**2904.42**	**14932.85**	**16980.9**	**32845.61**	**43117.5**	**41079.92**	**35258.39**
Total production per bigha (in kg)	**393.56**	**1189.89**	**720.48**	**333.61**	**190**	**3477.29**	**1002.56**	**5892.51**	**6236.56**	**4184.54**	**13887.45**
Value of By-Product (D)	**1150.86**	**2389.48**	**2500.56**	**3142.64**	**857.2**	**0**	**0**	**0**	**0**	**0**	**0**
Total cost per kg	11.87	8.20673	9.87	31.634	20.7436	4.86	19.1788	6.14	7.51989	10.6638	2.84
Average price per kg	12.95	11.25	12.48	35.99	36.59	7.72	35.78	13.41	18.91	19.85	7.73
Total value of crop	5096.6	13386.26	8991.59	12006.62	6952.1	26844.68	35871.6	79018.56	117933.35	83063.12	107349.99
Gross value of output	6247.46	15775.74	11492.15	15149.26	7809.3	26844.68	35871.6	79018.56	117933.35	83063.12	107349.99
Gross return (Gross value of output-TC)	1574.842	3529	11492.15	4595.85	3868.01	9956.8	16643.7	42859	71035.1	38439.9	67907.72
Net return (a+b-c) or (Gross value of output-TVC)	2331.222	3621.15	4377.49	6089.18	5604.88	11411.9	18890.73	46172.9	74815.8	41984.2	72091.6
Benefit Cost Ratio= TR/TC	1.09	1.09	1.26	1.14	1.76	1.59	1.87	2.19	2.51	1.86	2.72
Expense Structure Ratio = TFC/TVC	0.19	0.25	0.15	0.16	0.79	0.09	0.13	0.1	0.09	0.09	0.12
Rate of Return (ROR) = NR/TC	0.5	0.3	0.62	0.58	1.42	0.68	0.98	1.28	1.6	0.94	1.83
Gross ratio (GR) = TC/TR	0.92	0.91	0.79	0.88	0.57	0.63	0.54	0.46	0.4	0.54	0.37

Table -3 Cost of Production and Return of Various Traditional and Horticulture Crops

Source: Author's Calculation From Primary Data
Note :In This Table, All the Value is the Geometric Mean

Total Fixed Cost (TFC)

Total fixed costs are those costs of farming activities which a farmer has to spend for fixed farming assets which are durable in nature i.e. those assets can which can be used again and again in farming activities. TFC includes the depreciation cost, rental value (own land), interest on fixed capital, etc. There are significant differences that are found among the depreciation cost of the aforesaid five traditional crops. The TFC of irri (rupees 2481.63 per bigha) cultivation has been found highest among all the aforesaid traditional crops. The TFC of remaining sali paddy, ahu and bao, jute and mustard are rupees 910.00, 756.38, 993.33and 1036.87 per bigha respectively.

Total Production Cost (a)

If we sum up the total operational cost with the total fixed cost, we will find the total production cost. From table -3, it has been seen that the total production cost of irri paddy (rupees 11687.2 per bigha) has been found highest among the remaining traditional crops. In irri paddy cultivation, the farmers have to spend relatively more in the name of HYV seed, irrigation and fertilizer, and pesticides and labour force. The total production cost of the sali, ahu and bao paddy, jute and mustard cultivation are rupees 7084.77, 4211.73, 9783.84 and 3723.36 per bigha respectively.

Total Variable Cost (TVC) of Traditional Crops

By deducting the TFC from the Total cost (TC) of production (a+b), the TVC is calculated. The TVC of ahu and bao, irri, sali, jute and mustard have been found rupees 3916.24, 9765.11, 6395.22, 9060.08, and rupees 2204.42 per bigha respectively.

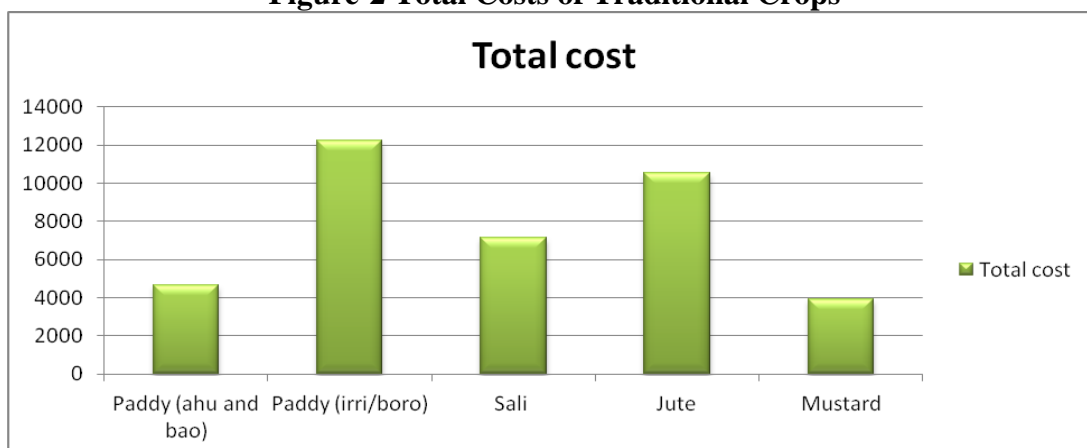**Figure-1 Total Variable Costs of Traditional Crops**
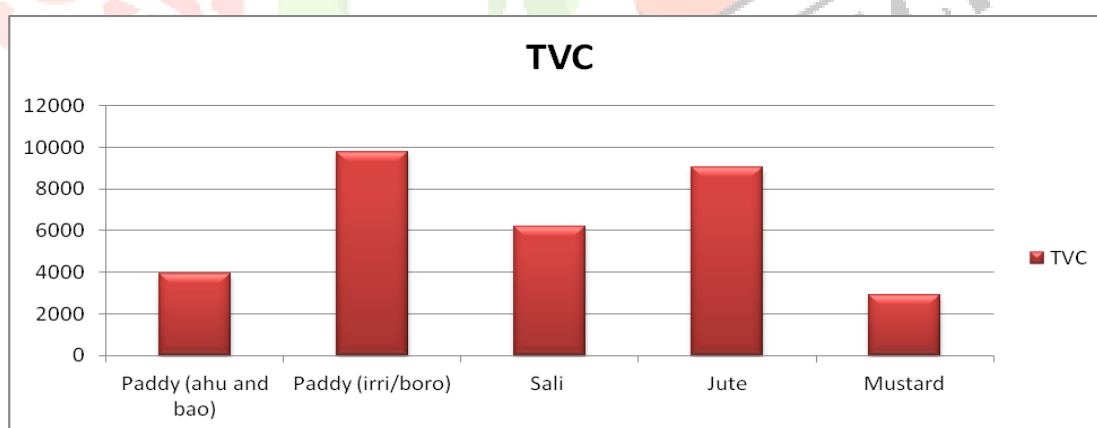
In the figure-1, it has been observed that the total variable cost of irri cultivation has been found highest followed by jute, Sali, ahu and bao paddy and mustard cultivation in the surveyed areas.

Total Cost (TC) of Production (a+b) of Traditional Crops

TC of farming activities indicates all the costs started from the preparation of land to sell their crops in the market. The total production cost and total marketing cost include all kinds of cost considering imputed family labour cost also. After summing up these two types of costs, we will get the total cost. It has been observed that the TC of irri, jute, sali ahu, and bao, and mustard are rupees 12246.7, 10553.4,

7305.22, 4672.62 and 3941.29 per bigha respectively. It has been observed that with the use of irrigation, fertilizer, and HYV seed, the total cost of production also increases. In this study, irri cultivation is prime evidence of the aforesaid observation.

Figure-2 Total Costs of Traditional Crops

In the figure-2, it has been observed that the cost of irri cultivation has been found highest followed by jute, Sali, ahu and bao paddy and mustard cultivation.

III-B. RETURN FROM TRADITIONAL CROPS

Value of Total Crop Production

The value of a crop produced in bigha is the market value of total out produced by the farmer. The unsold stock used for family or bullock consumption has been estimated at the prevailing market price of the crops during the harvest period. In the calculation process of gross output (kgs) for a crop, the total sales plus the output of the farm used for domestic use such as home or cattle consumption or gifted to relatives have been included.

The returns from the traditional crops are the total production of crops and the value of by-products. The production of ahu and bao, irri, sali, jute and mustard are 393.56 kg, 1189.89 kg, 720.48kg, 333.61 kg, and 190 per bigha respectively. The average price (geometric mean of the market price reported by all the farmers) of the aforesaid crops are rupees 12.95, 11.25, 12.48, 35.99, and 36.59 respectively. By multiplying the total volume of production of the aforesaid crops by the average market price, we get the total return from each crop which are rupees 5096.60, 13386.26, 8991.59 12006.62, 6952.1 per bigha respectively.

Value of by-Product of the Traditional Crops

By-product is not the final out but the residuals of the crops have also been used for satisfying various needs of the human being as we as animals which have market value also. A lump sum value of the by-product of aforesaid crops has been taken. In the primary level investigation, it has been found that the by-product of paddy, jute, and mustard are sold at a lump sum rate due to having units of the measurement problem. Paddy straw residual is an example. The market value of by-products of the

aforesaid crops has been found rupees 1150.86, 2389.48, 11492.15 3142.64 and 857.2 per bigha respectively.

Gross Value of Output

The gross value of output is the market value of total out produced by the farmer of a particular crop along with the market value of by-products. The unsold stock used for family or bullock consumption has been estimated at the prevailing crop price during the harvest period. In the calculation process of gross output (kgs) for a crop, the total sales plus the output of farms used for domestic use such as home or cattle consumption or gifted to relatives have been taken into consideration.

In this study, the gross value of output considers the market value of the total production of a crop and the value of the by-the product of that crop. From the calculation, it has been found that the irri (rupees 15775.74 per bigha) cultivation has the highest total return followed by jute (rupees 15149.26 per bigha), sali (rupees 11492.15 per bigha), mustard (rupees 7809.30 per bigha), and ahu and bao (rupees 6247.46 per bigha) cultivation.

Figure-3 Gross Value of Output of Traditional Crops
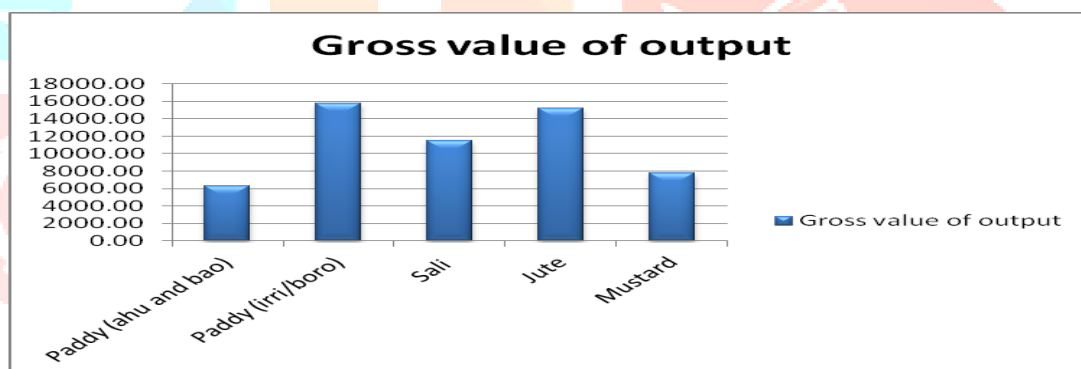
In the figure-6.3, it has been observed that the return from irri cultivation has been found highest followed by jute, Sali, mustard and ahu and bao paddy cultivation. Owing to the low level of return from ahu and bao cultivation, the farmers are avoiding this paddy cultivation in the state of Assam and adopting other profitable crops farming which has relatively higher returns.

III-C.GROSS AND NET RETURN (GR&NR) FROM TRADITIONAL CROPS

Gross Return is the difference between the TR and TC whereas net return is the difference between TR and TVC of a farming crop as explained in table 6.14. It has been found that the jute (rupees 4595.85) cultivation has the highest return followed by mustard (rupees 3868.01), irri (rupees 3529.00), and ahu and bao (rupees 1574.842) cultivation. On the other hand, the net return of the aforesaid crops is rupees 2331.222, 3621.15, 6089.18, and 5604.88. The remarkable observation is that though the return of irri has been found highest in absolute terms but both the GR and NR of jute cultivation have been found

highest among all the traditional crops and lowest in the case of ahu and bao paddy cultivation. Once upon a time, the ahu and bao paddy cultivation was the dominant crop but nowadays, the farmers avoid cultivating this crop which is only feasible in the surveyed area of the Mandia development block of Barpeta district.

IV. HORTICULTURE CROPS PRODUCTION: AN OUTLOOK TO THE COST AND BENEFIT

In this study, the researcher considers the production of vegetables among all kinds of horticulture crops in the primary investigation. Vegetable production is the dominant horticulture crops in the state of Assam. Among all the vegetables, we consider the production of potato, chilly, cucumber, pointed guard, ridge guard, and tomato in this study. In this section, the cost and return related to horticulture crops have been calculated.

IV-A. COST OF PRODUCTION OF TRADITIONAL CROPS:

The different types of costs are associated with vegetable production are explained below:

Total Fixed Cost (TFC)

The total fixed cost required for tomato production has been found highest (rupees 4183.88 per bigha) followed by the pointed guard(rupees 3780.73per bigha), ridge guard (rupees 3544.21per bigha), cucumber(rupees 3313.92 per bigha), chilly (rupees 1955.08 per bigha) and potato(rupees 2247.03 per bigha).

Total Variable Cost (TVC)

By deducting the TFC from the total cost (TC) of production (a+b), the TVC has been calculated. The total variable cost of the aforesaid crops has been found rupees 15432.8, 16980.9, 32845.6, 43117.5, 41079, and 35258.39 per bigha respectively. It is an observable matter is that both the TC and TVC of the pointed guard have been found highest among all the horticulture crops. The total variable costs of the vegetables are much higher than the traditional crops.

Total Cost (TC) of Production (a+b)

It has been seen that the total cost of the aforesaid crops has been found rupees 16887.9, 19227.9, 36159.5, 46898.2, 44623.2, and 39442.88 per bigha respectively. The pointed guard production requires the highest amount of cost followed by ridge guard, tomato, cucumber, chilly, and potato. It has been observed that with the use of irrigation, fertilizer, and HYV seed, the total cost of production also increases. In this study, irri and horticulture crop cultivation are prime evidence of the aforesaid observation. From the above discussion, one thing is clear that shifting from traditional or low returnable

crops to high returnable crops requires a higher cost of production. Our analysis is the basic proof of the statement.

IV-B.RETURN FROM HORTICULTURE CROPS PRODUCTION

Horticulture Production and By-Product

Like the traditional crops, vegetables have no such types of by-products as reported by the farmers. Total production of output is the only return of the vegetables. Therefore, the value of the by-product in table 6.14 has been found zero. The total productions received by the farmers of the aforesaid crops are 3477.29 kg, 1002.56 kg, 5892.51 kg, 6236.56 kg, 4184.54 kg, and 13887.45 kg per bigha respectively.

Average Price and the Average Cost per Kg of Output

The average price (geometric mean of the market price of all the farmers) of the aforesaid crops have been found rupees 7.72, 35.78, 13.41, 18.91, 19.85, and 7.73 respectively whereas the average cost per kg of the aforesaid crops is rupees 4.86, 19.18, 6.14, 7.52, 10.67 and 2.84 only respectively.

The Total Return from the Horticulture Crops Production

In this study, the total return considers the market value of the total production and value of the by-product of the crops. But due to the zero value of by-product, we only consider the total production of output as the only return in the case of horticulture crops. From the calculation, It has been found that the market value of total production of the aforesaid horticulture crops is rupees 26844.68, 35871.60, 79018.56, 117933.35, 83063.12, and 107349.99 per bigha respectively. The total return from each crop has been calculated by multiplying the total volume of production of the aforesaid crops with the average market price.

IV-C.GROSS AND NET RETURN (GR&NR) OF HORTICULTURE CROPS PRODUCTION

It has been found that the pointed guard (rupees 71035.1) cultivation has the highest total return followed by tomato (rupees 67907.72), cucumber (rupees 42859) ridge guard (rupees 38439.9), chilly (rupees 16643.7), and potato (rupees 9956.8) cultivation. One thing is clear that the gross return from pointed guard has been found highest whereas the potato has the lowest return among horticulture crops found in this study. On the other hand, the net return of the aforesaid crops has been found rupees 11411.9, 18890.7, 46172.9, 74815.8, 41984.2, and 72092.6 respectively. The remarkable observation is that both GR and NR of the pointed guard are highest in absolute terms in the case of aforesaid horticultural crops.

V. DIFFERENT FINANCIAL RATIOS OF THE TRADITIONAL CROP AND HORTICULTURE

To measure the potentiality or efficiency of traditional, horticulture crops production, fish, and dairy farming; gross margin and net margin analysis have been used. Gross and net margin analyses provide a profit margin in absolute terms of the aforesaid crops. The margin of the aforesaid farming and allied activities cannot comparable due to the different nature and unit of measurement of the aforesaid activities. Therefore, the performance and economic viability of the production of the crop are determined by the use of the financial profitability ratios such as benefit-cost ratio, expense- structure ratio, rate of return, and gross ratio.

Benefit-Cost Ratio:

BCR is an indicator of the profitability of a particular amount of investment. In other words, it indicates the amount of benefit per unit of money (Rupee). For example, if BCR rupees 1.25 which denotes that by investing rupee 1, the investor will get a return worth of rupee 1.25. The benefit-cost ratio of tomato (2.72) has been found highest followed by fishery (2.52), pointed guard, cucumber(2.19) whereas the benefit-cost ratio of traditional crops of ahu and bao paddy, irri, jute, mustard are 1.09,1.09,1.14 and 1.76 respectively (Table 6.17). Hence, we conclude that horticulture, fishery, and dairy farming are relatively more beneficial than traditional farming. This higher profitability of allied activities pushes the rural people to shift from traditional farming activities to allied activities in the state of Assam.

Expense Structure Ratio:

ESR is the ratio between total fixed cost and the total variable cost incurred by a producer which indicates how much amount of fixed cost is needed as compared to the total variable cost to produce per bigha of farming land. The required amount of fixed cost as compare to variable cost is more in the case of fish farming than the other farming activities. Expense structure ratio of the traditional crops are 0.19 (ahu and bao Paddy), 0.25 (Paddy (irri/boro)), 0.16 (Jute), 0.09 (Mustard) whereas expense structure ratio of the allied activities are 0.09 (Potato), 0.13 (Chilly), 0.1 (Cucumber), 0.09 (Pointed guard), 0.09 (Ridge guard), 0.12 (Tomato), 0.36 (Fish) and 0.08 (Dairy).

Rate of Return:

ROR is the ratio of net return and the total cost incurred by the farmer in a particular plot of land. In other words, it indicates the net return per unit of the total cost incurred by the farmer. From the table-6.17, it has been found that the rates of return paddy cultivation are relatively lesser than the horticulture, fish, and dairy farming. The rate of return from tomato and fish farming is more than the other traditional activities.

Gross Ratio:

GR is the ratio between the total cost incurred by the farmer and total revenue. It denotes the amount of cost incurred by the farmer to earn a unit of money. For example, if the GR is 0.76 which will indicate that to earn 0.76 rupees, the farmer has to spend rupee 1. The gross ratios of pointed guard and fish farming have been found lowest. This ratio gives the idea that the total amount of revenue received by the farmer as compare to horticulture, fish, and dairy farming are relatively more than the other traditional farming activities. Gross ratios of the allied activities are 0.63 (Potato), 0.54 (Chilly), 0.46 (Cucumber), 0.40 (Pointed guard), 0.54 (Ridge guard), 0.37 (Tomato), 0.40 (Fish) and 0.59 (Dairy). But the gross ratios of traditional farming are 0.92 (ahu and bao Paddy), 0.91 (Paddy (irri/boro)), 0.88 (Jute), 0.57 (Mustard). This information suggests that the total cost required for earning one unit of money from traditional crops have been found relatively more than the allied activities.

VI. CONCLUSION

The people whose livelihood primarily depends on the rural sector of Assam are facing different types of constraints and crises in practicing traditional farming activities. It has been found that the allied activities are being given more importance by the farmers in rural Assam. The farmers are giving more importance to allied activities like horticulture, fish, and dairy farming whereas the farmers are avoiding traditional farming activities. The rate of return from the practicing of horticultural activities is relatively more than the traditional crop farming. In the allied activities, the required amount of capital or cost of production is comparatively more than the other farming activities. It has been found that most educated young farmers practice high returnable crops avoiding traditional ones. This is established by the fact that the horticultural activities are relatively more profitable which makes the farm household more strong to deal with the agrarian crises. The success stories of the three sample districts which have exhibited significant diversification in the sphere of horticulture offer sound evidence that a strategy of rural diversification can be a targeted strategy for averting and managing the agrarian crisis that recurrently plagues the rural sector.

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