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IMPACT OF HORTICULTURE ON THE LIVELIHOOD OF RURAL FARMERS IN MAYURBHANJ DISTRICT OF ODISHA

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----------ABSTRACT----------

Horticulture practices affect the socio-economic life in a greater quantity. The current study aimed at the impact of horticulture on the livelihood of the rural farmers of the Mayurbhanj district of Odisha. The results have shown that there is significant impact of horticulture in income as well as savings of rural farmers. Similarly, after adoption of horticulture the rural farmers have changes their expenditure pattern. Expenditure on health, education, food habits and luxurious life of the rural farmers also have been changed. It has also been realized that horticulture is an important part of the agriculture sector and huge potential to contribute to the growth of the nation. So, there is much scope for the research as it is directly connected to our life. There are many problems irrigation, marketing and storing the yield in this sector. The horticulture sector is not only meant for sustainable livelihood but also it helps maintain the sustainable environment by maintaining the ecology. So, in the future, the more micro-level study should be done to point out the micro-level problems to sort out the basic issues at the micro level for the horticulture sectors.

KEY WORDS: ***Climate, Horticulture, Livelihood, Rural farmers, Sustainable----------***

1. INTRODUCTION

India is the land of agriculture and agriculture is the back bone of the rural people. In India majority of the people live in the rural areas. According to World Bank Report, 2021, 64% people live in the rural areas in India and 83.31% (Census, 2011) in Odisha. The main occupation of the rural people is cultivation. Similarly, according to census, 2011, 54.6% and 76% of people depend on agriculture in India and Odisha respectively. A lion part of the livelihood comes from the agriculture sector. But the rural people are facing so many challenges during the cultivation. The main challenges like climate variations and natural calamities like flood, drought affect the farming process very much. Similarly, the scope, marketing facilities as well as challenges also affect the agriculture sector in various way. Skills, training along with the socio-economic attributes like income, education, health affect the agriculture sector. This affects directly to the livelihood of the rural farmers.

India is a land with varied soil and climatology comprising diverse agro-climatic regions provides huge opportunity to grow a huge variety of horticulture crops. These huge variety of crops from a substantial part of total agricultural produce in the country including fruits, vegetables, flowers, tuber crops, roots, ornamental plants, medicinal and aromatic plants, spices, plantation crops, mushrooms and condiments. Horticulture or garden culture is a crucial part in agriculture which plays a dynamic role in the growth of economy in India as well as in Odisha. The horticulture provides a better alternative for diversification of Indian agriculture because of a higher return. It plays an important role in the country's nutritional security as well including poverty alleviation and employment generation.

In intensive agriculture, farmers face the problem of water management. Odisha agriculture depends on monsoon by climate change the rain-fed seasons vary and in field farming huge range of water needs unless farmers face the risk of crop failure. Intensive agriculture needs a large scale of land is not give fruit full production of cereal crops. Small and marginal farmers are not able to cultivate due to the land size and for a reason like Odisha, most of the farmers are marginal farmers. Crops take a long period for cultivation. In this period farmers can grow more horticultural products. These are some causes for which farmers move towards horticulture rather than traditional intensive agriculture and demand for food diversity is also a cause for

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improvement in horticulture. Though horticulture practices were started earlier period of time (Srinivasan, 1961) but after launching National Horticulture Mission (NHM) in April 2005 the promotion of horticulture have been started by implementing different strategies. The role of foreign trade policy in 2004-09 is also important to enhance the agricultural exports, growth and promotion of horticultural yields (ICAR Report, 2010).

LITERATURE REVIEW

To understand the growth and productivity as well as the factors that affect horticulture production past literatures have been extensively swotted. According to **Asati et al., (2005)** the importance and scope of under exploded horticultural crops having lot of potential to grow with less maintenance in North Eastern region. The underutilizing horticulture crop are blessed with many advantages and can easily tolerate the adverse climate conditions and soil structure.

According to **De *et al*., (2019)** have analysed the fluctuating income of farmers from agriculture creates such situation of suicide. Farmers suffer from huge gap between the cost and income. By collaborating agriculture and horticulture and intervention of agri-horti industries, there is an improvement in the livelihood of farmers. This is because of the improvement in income from the horticulture crops production. This can be possible through appropriate agricultural policy by the government that can help to increase farmers' income. The suitable policy formation can help to minimize the problem of poverty. **Posadas (2013)** has argued that horticulture practice has the great potential on job creation. Mississippi horticulture service industry is one of the great examples of job opportunity platform for the rural people. There are various issues faced by the rural farmers. Also, the role of some basic factors is very crucial for the horticulture crops production. **Mohanty *et al.* (2014)** have engrossed the role of water resource and development of technology can give a better livelihood to farmers to cluster villages. Water source is a matter of concern for all the rural farmers which the productivity in various way. In some other areas in Odisha t water-shed schemes play a crucial role agricultural irrigation.

Introduction of various technological intervention and multiple use of water give a positive response towards increasing livelihood of the farmers. **Sahoo *et al*., (2018)** have accentuated to draw the nub of influences in the agriculture sector. As opportunities are created in spite of certain circumstances the rural people in backward regions Odisha, especially the districts like Kandhamal can increase their livelihood. To discuss the threats, they yearned the fears such as inferior inputs and post-harvest losses due to marketing strategies as well as the kick of climatic risks. **Gowda and Dixit (2015)** have emphasized on education level of the farmers, which affect directly the socio-economic status of the people. But it is significant to say that except education there is no value of new idea and new knowledge as rural people not aware about it. To implement by the government and to adoption capacity of the farmers depend on their own education and skill. Notwithstanding the cost usefulness, mobile messaging has persisted a hindrance of the end users in the farming sector. As it is observed the only and ultimate factor that influences to adopt extension services is the education level of the farmers or the users. **Datta (2013)** has identified the climate risk in Indian horticulture. As stated in the article the districts of North Bengal particularly in Cochlear the impact of climate variation dishearten not only horticulture sector but also entire agriculture sector. Connotations are given by the authors to make agriculture sustainable the techniques like conservation agriculture, use of renewable energy, forest and water conservation should be followed in the horticulture practices.

Tripathi *et al*., (2015) have observed that both in pre and post activities of the production process women are involved. It is seen from the study that around 80 percent of women participate in weeding and field preparation. The elements like age, type of family, education level, income of the family influence the women to involvement in the agriculture process. **Padhy and Behera, (2015)** have emphasized the role of horticulture in human nutrition. From the existing literature it is clear that, on the one hand there are several glitches for the rural farmers to adopt new strategies to augment their farming pattern and this is due to lack of awareness and circulation of the new knowledge and ideas to accelerate the agriculture production. On the other hand, government is trying to interfere by implementing well-engineered sustained agriculture policy to encourage the small and marginal farmers. As a result, through horticulture the productivity of agriculture is amplified. Through horticulture the agriculture products such as vegetables, fruits and different crops helps to increase the human nutrition along with enhance the livelihood of the rural domicile. According to **Chapke and Tonapi (2012)** horticulture practices help to generate employment opportunities in the rural areas. The rate of employment generation has increased to 25% from the 18% in the previous years by cultivating horticulture crops. Also, improved technology helps the farmers to enhance their habits of farming which directly affect their socio-economic scenario. Similarly, **Mapila et al. (2012)** argued that by using the Enabling Rural Innovation in the agriculture sector rural livelihood can be improved. Also, they have argued that the local agriculture extension officers have the more potential to expand the technological innovation to enrich the agriculture and allied sector to embellish the rural livelihood through the local farmers. According to **Basa and Sahu (2021)** the factors like irrigation facility, market condition of the horticultural products, promotion of the crops, storage facility of the crops, training of the farmers and environmental factors such as climate and geographical

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characteristics such as quality of soil and ground water table influence the horticulture practices as well as other agriculture productivity and export of the products. Moreover, awareness, skill and quality control strategies depreciate the turnover and so as the farmers in India

OBJECTIVE

The main objective of this current study is

(i) To study the impact of horticulture on livelihood of rural people in Mayurbhanj district of Odisha.

DATA AND METHODOLOGY

The present study is based on primary data. The primary data will be collected through the structured questionnaire. The simple random sampling method has been used to select the sample households. The farmers who are directly involved in the horticulture process has been interviewed. Descriptive statistics have been calculated by using SPSS to visualize the distribution of the observation. Bar and pie charts have been used to analyse data. Correlation is used to show the relationships between the variables and the correlation results are calculated by using SPSS.

SELECTION OF SAMPLE AREA

Mayurbhanj is a land locked district with a total geographical area of 10418 Sq.km. and is situated in the Northern boundary of the state with district headquarters at Baripada. Being away from the coastal belt, the district experiences a sub-tropical climate with a hot summer, chilling winter with good precipitation. In Mayurbhanj 92.34 % (Census 2011) of population live in the rural area and majority of the people are small and marginal farmer. Agriculture is the backbone of the rural small farmers. Due to the climate change the farmers of the rural areas of Mayurbhanj districts face various challenges like, climate change, marketing issues of the agricultural products, inputs, irrigation facilities, and pricing of the products over the years.

Current study has been divided in to six parts. In the first part we have included introduction of the study. In the second part review of past studies has been included to understand the problems and background of the study. In the third segment objectives of the study are included and in the fourth part materials and methodology study has been included. Analysis of the current study has been included in the fifth segment of the study. Conclusion and suggestions are given in the last part of the study.

ANALYSIS OF THE STUDY

The distribution of the households who directly involved in the horticulture process in Mayurbhanj district of Odisha are given in the Table 1. According to their annual income it is clear that near about 50% of farmers have their annual income in category ranges from Rs 50000 to Rs 100000 followed by 36% of farmers who adopted horticulture in the income range of Rs 100000 to Rs150000 in the sample areas. It is clear from the Table 1 that major portion of farming practices are done by the male people (around 94%). Similarly, in the rural area the farmers not highly educated as the percentage share of primary education is higher with 41.67%.

Table: 1 Distribution of the respondents according to their characteristics

Category	Respondents	
	Number	*Percentage
Age		
Age (18 ≥ 60)	234	78
Age (60 ≤ 70)	66	22
Gender		
Male	281	93.67
Female	19	6.33
Education		
Illiterate	40	13.33
Primary	125	41.67
Upper Primary	108	36.00
Secondary	27	9.00

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Caste		
ST	98	32.67
SC	23	7.67
OBC	122	40.67
General	57	19.00
House owned		
Kachcha	183	61.00
Pucca	117	93.00
Annual Income		
≤ 50000	2	0.67
>50000≤ 100000	149	49.67
>100000≤150000	108	36.00
>150000≤ 200000	26	8.67
>200000	15	5.00
N	300	

Source: Calculated by author from Primary data
*Calculated from the total number of sample (n=300)

Table: 2 Description of the Variables

Variables	Descriptions
GEND	Gender of the farmers
CAST	Cast of the farmers
EDL	Education level of farmers
THW	Type of house owned by farmers
INY	Increase in income after the adoption of horticulture
INPR	Increase in crop production after the adoption of horticulture
IEFHC	Increase in expenses of food, housing and clothing after the adoption of horticulture
IEHE	Increase in expenses on health and education after the adoption of horticulture
ISAV	Increase in savings after the adoption of horticulture

Table-3 shows the relationship between the variables. As shown in the Table-3, there is a strong and significant relationship among the variables. The variables like age and gender have no correlation which implies there is no significant impact on the horticulture process in the rural areas. Normally, the aged farmers have the more experience for farming but there is no such evidence from the result shown in the Table-3. Similarly, level of education has no correlation with age, gender and cast. On the other hand, Gender of the farmers has the positive and strong relationship with 5% level of significant on health and education expenditure in the rural areas of Mayurbhanj district of Odisha. As revealed from the correlation results increase in income after adoption of horticulture and the gender of the farmers in the rural areas has strong correlation with 5 % level of significance. It indicates that there is still gender discrimination exists in the rural areas. Increase in income of the farmers after horticulture has affect negatively on the type of house with 1% level of significant. It may be due to the increase expenditure in the other heads like health, education and betterment of the farming process such as buying of farm equipment etc.

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Table: 3 Relationship between the variables

Variables	AGE	GEND	CAST	EDL	THW	INY	INPR	IEFHC	IEHE
GEND	-.093								
CAST	.005	.069							
EDL	-.011	.070	.055						
THW	-.022	-.048	-.036	-.021					
INY	.027	.132*	.112	-.037	-.590**				
INPR	.048	.072	.014	-.091	-.465**	.803**			
IEFHC	.060	.043	.060	.055	-.372**	.590**	.540**		
IEHE	.056	.128*	.057	-.077	-.435**	.722**	.669**	.468**	
ISAV	.069	.100	-.007	-.038	-.208**	.469**	.469**	.329**	.440**

Source: Calculated from the primary data
N.B.: **Correlation is significant at the 0.01% level (2-tailed)
* Correlation is significant at the 0.05% level (2-tailed)

It is clearly revealed from the Table -3 that there is a positive and significant impact with 1% level on saving of the farmers after increase in income after adopting the horticulture practices. Increase in income has positive impact on the savings of the rural farmers as there is a strong and positive correlation between income from horticulture and the savings. But increase in savings has negative impact on the type of house owned by the farmers. This implies there may be increase in other expenses and may the house have owned by the farmers is quite good in condition. On the other hand, increase in savings leads to increase in production as it is positively correlated with 1% level of significant which directly affect the income and savings as well. Similarly, increase in savings increases the expenses on food, clothing and housing. As the savings of the farmers increase, they prefer to spend more on clothes, change in consumption behaviour of foods and also, they prefer to invest for making and repairing of house. After adoption of horticulture practices, they started spending more on the education to provide better education to their children. In rural areas normally medical practices are very poor. So, now they are preferring for good health treatment practices as they better earning options through horticulture production in the rural areas. It is noticed there is positively correlated with 1 % level of significant for health, education, housing, food and clothing.

Table: 4 Crop wise production percentage share among the blocks

Blocks	Vegetables	Plantation	Fruits	Flowers	Spices
Shyamakhunta	16.174	1.449	6.337	15.469	13.557
Baripada	9.809	6.926	18.378	4.462	7.496
Suliapada	25.896	16.350	6.337	19.931	16.906
Bangriposi	3.188	24.694	11.407	10.266	19.206
Udala	4.866	1.630	8.745	8.296	3.987
Moroda	0.842	0.724	7.098	7.768	4.721
Rairangpur	25.983	8.374	24.715	21.731	21.531
Karanjia	7.595	23.390	5.830	2.545	4.976
Bisoi	2.969	2.598	9.506	10.141	7.528
Saraskana	2.678	13.866	1.648	1.190	2.392
Total	100.000	100.000	100.000	100.000	100.000

Source: Primary data

Crop wise percentage share among the sample blocks of Mayurbhanj district has been depicted in the Table-4. According to the Table-4 it is clear that there is mix performance of all the blocks in all the five selected crops such as Vegetables, Plantation, fruits, flowers and spices. In Vegetable production the blocks like Shyamakhunta, Suliapada, Rairangpur occupied a remarkable position among the sample blocks for the current study with 16. 174%, 25.896% and 25.983% respectively. It is because the blocks like Shyamakhunta and Bangriposi are situated near the Budhabalanga and Katra river. The land near these two rivers is too fertile to cultivate various crops all over the year. The lands are very suitable for vegetables. This indicates towards the good sign for the rural farmers specially those have interest on horticulture practices. Similarly, for the plantation crops Bangriposi and Karanjia blocks have positioned well among the sample blocks of Mayurbhanj

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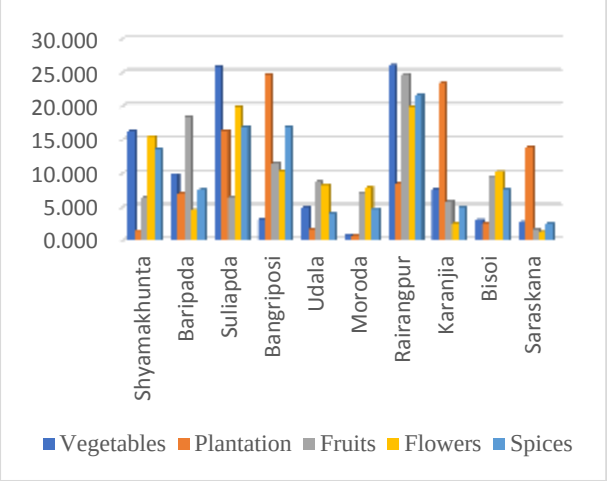
district. Bangriposi occupied the top position with 24.70% and followed by Karanjia block with 23.40%. Morada block has no such remarkable performance in plantation crops. This may be the marketing issues and lack of scope for the plantation crops. It is observed from Table 4 that the performance of Morada block is no such eye catching. In Fruits cultivation Rairangpur block has topped the position with 24.715%. Similarly, in flower production the blocks like Shyamakhunta, Suliapada and Rairangpur have performed well than the other sample blocks of the district with remarkable share. For spices production under the horticulture scheme Bangriposi and Rairangpur block have the notable performance with 19.20% and 21.53% among the sample blocks.

Figure:1 Crop wise production percentage share among the blocks Figure:2 Crop wise earnings percentage share among the blocks



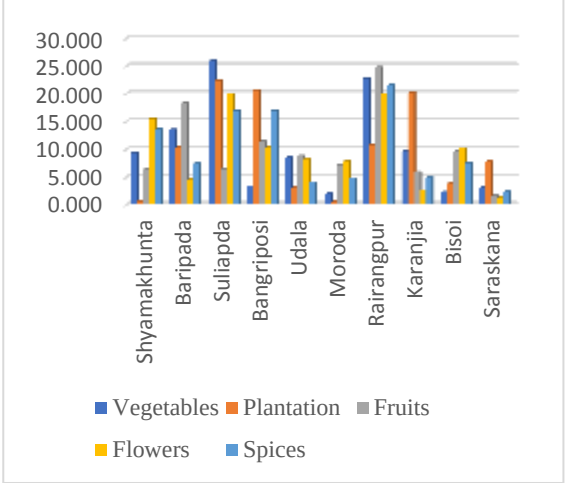


Table:5 Crop wise earnings percentage share among the blocks

Blocks	Vegetables	Plantation	Fruits	Flowers	Spices
Shyamakhunta	9.306	0.589	6.337	15.469	13.557
Baripada	13.474	10.229	18.378	4.462	7.496
Suliapada	25.860	22.410	6.337	19.931	16.906
Bangriposi	3.283	20.607	11.407	10.266	21.253
Udala	8.475	3.075	8.745	8.296	3.987
Moroda	1.924	0.478	7.098	7.768	4.721
Rairangpur	22.779	10.819	24.715	19.931	21.531
Karanjia	9.652	20.145	5.830	2.545	4.976
Bisoi	2.224	3.796	9.506	10.141	7.528
Saraskana	3.023	7.851	1.648	1.190	2.392
Total production	100.000	100.000	100.000	100.000	100.000

Source: Primary data

Earnings from the different crops under the horticulture scheme among sample the blocks of Mayurbhanj district have been shown in Table-5. It is clearly shown in the Table-5 that Rairangpur block has registered in the well performance list among the sample blocks. The overall performance of Rairangpur block is quite remarkable with second highest earnings in vegetables cultivation with 22.78% and highest in fruits production with 24.715%. It indicates the suitability and marketing structure of the crops to cultivate in a large quantity with greater potential. The increase in production quantity and improve in marketing structure creating greater opportunities in the localities. As a result, rural farmers get motivated to adopt various crops to meet the potential demand of the crops. On the other side, the earnings from the different crops from the blocks like Morada, Bisoi and Udala is very low than the other sample blocks. This may be due to the lack of scope, interest of the farmers in the rural areas. Profit margin of the crops may be the other reasons for low productivity and low earnings. Similarly, earnings from plantation crops in blocks Suliapada and Bangriposi is very remarkable among the sample blocks with 22.41% and 20. 60% respectively. Earnings from fruits cultivation Rairangpur block is on the top with 24.71% which may motivate other rural famers to produce and earn more to supplement their livelihood and to betterment their social lives.

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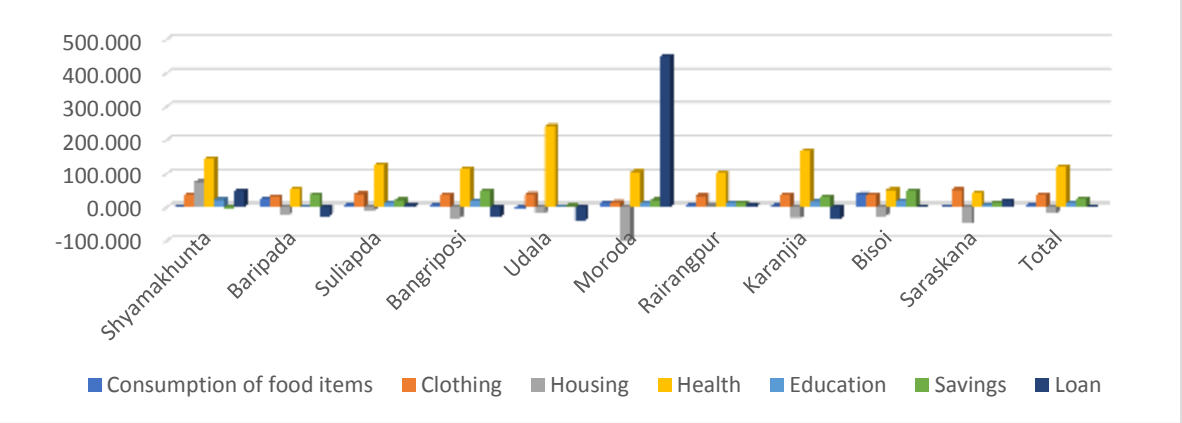
Table:6 Changes in expenditure, savings and loan after adopting horticulture

Blocks	Food	Clothing	Housing	Health	Education	Savings	Loan
Shyamakhunta	2.196	36.817	75.060	143.627	22.407	-2.195	47.059
Baripada	23.774	31.556	-22.429	53.315	1.132	37.048	-26.000
Suliapada	7.176	40.099	-7.863	126.184	14.345	22.016	6.897
Bangriposi	7.058	36.014	-32.659	113.230	17.974	47.199	-28.125
Udala	-2.640	38.786	-17.248	242.135	1.563	3.799	-40.000
Moroda	11.126	14.815	-98.907	105.093	11.111	21.260	45.000
Rairangpur	5.909	34.099	3.883	101.169	12.706	14.349	7.568
Karanjia	4.285	36.868	-31.240	167.421	16.871	30.637	-32.692
Bisoi	38.571	36.596	-25.758	51.825	18.182	47.500	0.000
Saraskana	2.243	52.137	-47.669	41.386	6.551	13.699	20.000
Total	5.619	36.633	-18.620	121.256	13.650	25.372	0.549

Source: Primary data

Changes in expenditure of the rural farmers in food, clothing, housing, health, education and changes in savings and loan has been described in Table-6. In Table-6, it is shown that for clothing in all the sample blocks except Morada has been changed remarkably. But in Saraskana blocks the changes for clothing is maximum with 52.137%. As in Morada block is far behind in case of performance of production and as a result minimum in changes in expenditure. The farmers have spent more in Baripada and Bisoi block with 23.78% and 38.58% respectively. Udala block has registered maximum with 242.135% for health expenditure after adoption of horticulture practices. It clearly indicates that after adaptation of horticulture practices farmers have increased their income significantly. Expenses in education Shyamakhunta block has registered in top position with 22.407%. This is because the people from Shyamakhunta block have understood the value of education and after adoption of horticulture practices the income of the family may increase which help and motivated for better education for their children. On the other hand, expenditure in housing is negatively changed. This indicates that the rural farmers have good housing condition or may have repaired earlier.

Figure:3 Changes in expenditure, savings and loan after adopting horticulture after adopting horticulture



Problem associated with horticulture

It is observed that both the small and marginal farmers who has been adopted vegetable crops under horticulture scheme face lot of challenges due to the climate change. Crop damage is one of the important ill consequences for the vegetable cultivators. They have to bear huge loss. Another major problem is institutional measures which is very disappointing as reported by the rural farmers. The problems like sound weather condition, well-structured marketing structure of the products, price of the products, irrigation facilities, easily availability of quality seed, skilled manpower to mobilize the production process affect the potential productivity of the horticulture practices.

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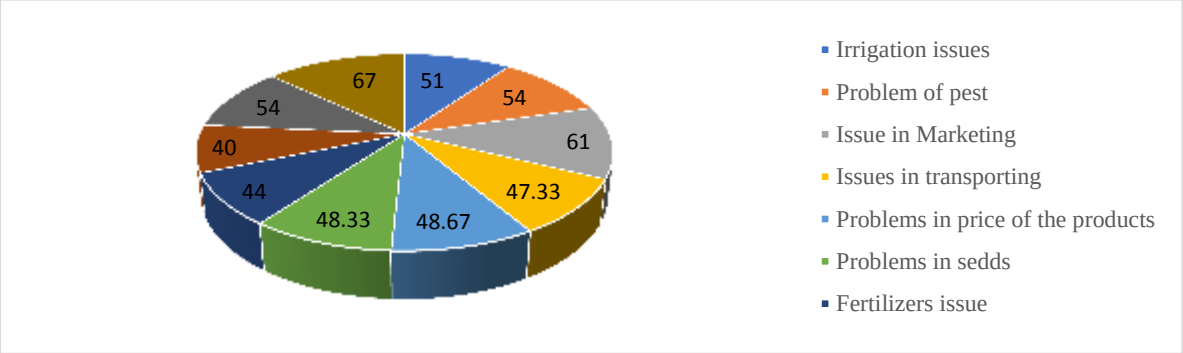
Table: 7 Major problems associated with the Horticulture practices

Problems faced by the farmers	No of farmers	*Percentage share
Irrigation issues	153	51
Problem of pest	162	54
Issue in Marketing	183	61
Issues in transporting	142	47.33
Problems in price of the products	146	48.67
Problems in seeds	145	48.33
Fertilizers issue	132	44
Training of the farmers	120	40
Financial problem	162	54
Climate change	201	67

Source: Primary data
*Percentage share is calculated from the total number of samples (*N=300*)

According to Table-7, the problems like climate change and marketing issue for the horticultural products have the greater impact in the rural areas. It is because the rural people are not able to be aware about the different climatic condition and market structure of the agricultural and allied products. The climate change has the major threat (67%) for the farmers of the rural areas. Financial (54%), irrigation (51%) and pest (54%) problems are another major issue for the rural farmers agriculture and allied practices.

Figure: 4 Major problems associated with the Horticulture practices



Though high yielding seeds are collected by the farmers from the authorized agencies and later the costs of seeds are subsidized by the department but rural farmers are not aware about it. Fertilizer cost are subsidized by the department but there is a huge gap between the rural farmers and the department. So, the actual benefits are far away from the rural farmers. Also, there are various farming mechanism like solar pump (only solar panels are provided by the department at subsidized cost rest of the things are bored by the farmers) and other equipment are provided to the farmers in subsidized cost. But as the rural farmers are not aware they are deprived from the different benefits. Farmers who are producing vegetables, fruits, other crops under different horticulture schemes sell their products in the local market. Some Food Producing Organization (FPO) produce fruits specially mango and export to other states. It is observed that most of the marketing innovations are led by the private sector. However, many of the linkages limit the scaling of participation of the farmers and leads exclusion of the large section of the farming population (Onumah et al., 2007).

SUGGESTIONS AND CONCLUSION

It is revealed that there are many lacunas for the growth of horticulture practices. Horticulture plays an important role for rural livelihood as it has the great impact on rural employment Enforcement of Government scheme to enhance the horticulture practices. As still there is a problem of food security there is a need to circulate food security chain to curb the problems like starvation and nutrition. It is clearly outlined from the study that horticulture sector is suffering from various issues like market structure, technical, economical as well as geographical discrepancies and irrigation system. Micro irrigation system has the prominent role to enhance the horticulture practices (Pachpute et al., 2009). Because in the dry season it is quite difficult for any agriculture practices for the small farmers. As the local water management skills are very limited in the rural areas (Pachpute et al., 2009) it affects the production process and hence affect the livelihood of the rural people.

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Similarly, the efficiency and effectiveness of marketing structure has been an important apprehension in the recent years. Also, Indian rural farmers depend on the middle men to control the market which a major concern to think properly about the marketing of the horticulture products.

The impact of climate variation dishearten not only horticulture sector but also entire agriculture sector (Datta, 2013). Connotations are given by the authors to make agriculture sustainable the techniques like conservation agriculture, use of renewable energy, forest and water conservation should be followed in the horticulture practices. To recovery from these sorts of maladies and to make agriculture as well as horticulture sector grass root level research-based approaches should be undertaken by the government. We need to learn about the situation, actor and process and bring out significant learning issues to enhance the horticulture productivity and the interest of the people. Based on the learnings, the action is to be taken on the fronts of situation to solve the issue of production enhancement process, actor or process or the relevant interfaces or the resources involved in the horticulture production process. On the basis of efficiency of actions, performance is generated in terms of improved processes/actors and better situational parameters. In an effective production situation, the performance parameters could be market share, profitability, quality, productivity, competitive advantage, and core competence.

Producers' organization plays a pivotal role in organizing and training producers to take advantages of the market innovations. However, due to the lack of support of apex body weakened the capacity of the producers, organization. It is because of the less attention towards the horticulture practices. The state governments are not so much interested to promote the practices. But it is revealed that horticulture and other allied activities have great scope for the livelihood, and to control the unemployment the importance of horticulture had increased. Agriculture and life are like two sides of a coin and horticulture is an important part of the agriculture sector. So, there is much scope for the research as it is directly connected to our life. There are many problems in these sectors. The government is planning to improve these sectors and also the government is implementing various policies to improve the horticulture sector as now it has become an important part of the sustainable livelihood. The horticulture sector is not only meant for sustainable livelihood but also it helps maintain the sustainable environment by maintaining the ecology. So, in the future, the more micro-level study should be done to point out the micro-level problems to sort out the basic issues at the micro level for the horticulture sectors.

Poor households mostly depend on wage labour, so demand of labour is an important factor to turn the fortune of the rural poor people. The demand appears to have been extremely penetrating menaces in market production which is perceived by the farmers (Oygard et al., 2002). So, employment opportunities are relatively good in the era of better market access as mobilisation of labour force to produce more agricultural products in the same field. But on the other hand, due to lack of infrastructure like damaged road conditions, availability of transport facilities demand of labour has been deteriorated. As a result, the problem like migration is hitting the alarm bell.

THE IMPLICATION OF THE CURRENT STUDY

The study is significant both for social science research and horticulture policy formulation. To provide sustainable livelihood to poor rural families and to make them self-sufficient, the key findings of the study will help the farmers to adopt appropriate techniques for horticulture production. Since horticulture is a secondary occupation of the rural population, the findings of the study will formulate policy for improving employment by minimizing the migration in the rural areas and increase in income from the Horticulture sector in Odisha.

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