

Betel Nut Production as an Occupational Pursuit: A Regional Paradigm on its Manufacturing and Marketization



Durlove Borah, Jayanta Dutta, Sukanya Hazarika

Abstract: Embedded in our indigenous culture, betel nut is an important cultural identifier of Assamese society. Like as a part of many Asian cultures, there are profound usages of betel nut in Assamese social and religious occasions. It is of high esteem to serve the guests with betel nut as a mouth freshener. Its scientific name is *Areca catechu*. In India, betel nut production is dominant in the coastal regions. Although, as a tropical crop, its heavy production can be seen in the states of Karnataka, Kerala, Assam, Meghalaya, Tamil Nadu, West Bengal, and some others. Published in a report titled “Areca nut Area, production and productivity, in India” by Directorate of Areca nut and Spices Development, within India, Karnataka produces 62.69 percent of total production followed by Kerala and Assam; all three states together producing 88.59 percent in the years 2013-2014. Regarding with a special ethno-religious prestige, the use of betel nut in Assam is attributed to the Ahom period. Harvesting betel nut in an extensive way has become an occupational pursuit for many native cultivators and it has drawn a global market too which is a good recognition for this indigenous crop. Qualities of land and climatic conditions have a tremendous impact on its production. In this study, a specific treatment has been made relying on a field study of Nagaon district of Assam to focus on the factors determining betel nut production. Along with it, discussion has been made on different cropping patterns and land utilization and its impact on productivity, data sampling of growers and per capita income, its manufacturing profit all are elaborately considered in this article.

Keywords: production, occupation, manufacture, marketing, income.

I. INTRODUCTION

India is mainly an agrarian economy and in the agricultural sector, plantation crops started playing a significant role in the economic development of the nation. Among various plantation crops growing in India, Betel Nut is one of the predominant crops. Betel nut is produced on a large scale in Nagaon district of Assam since decade. Its production in Nagaon district has now almost reached a level of self-sufficiency as the local growers have found a way of income generation and livelihood security through it.

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Jayanta Dutta*, Research Scholar, Dept. of Modern Indian Languages and Literary Studies, Gauhati University, Guwahati, Assam, India, E-mail: jayantadutta746@gmail.com

Sukanya Hazarika, Masters in English, former student, Dept. of English and Foreign Languages, Tezpur University, Tezpur, Assam, India, E-mail: sukanyahazarika763@gmail.com

Durlove Borah, Research Scholar, Dept. of Economics, Dibrugarh University, Dibrugarh, Assam, India, E-mail: dulove1992@gmail.com

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Hence, in this paper, an attempt has been made to bring out the present status of betel nut growers in the study area.

II. METHODOLOGY

This study is carried on by primary sources and for that, a filed study method has been adopted thoroughly for data collection and data sampling. The collected data are interpreted and calculated by analytical formulae and the results have been analyzed accordingly.

III. AREA OF STUDY

For the convenience of study, we have selected a Nagaon district of Assam where there is a large production of betel nut can be seen and a good proportion of household income has been derived from cultivation of this crop for a particular section of farmers in the district. Nagaon is an administrative district of Assam of which total geographical area is 2287 sq. km. and total cropped area is 354801 Ha. (<https://nagaon.gov.in>)

IV. DISCUSSION

1.1 Distribution of Land Utilization by the Sample Betel Nut Growers:

The size of the land holding is an important determinant of productivity of agriculture. It becomes more important in case of plantation crops like betel nut. If the land size is viable in size there will be intensive cultivation of land which increases the productivity of land. Distribution of land shows the utilization of land in different cultivation as well as the barren land of the growers. The following figure shows the utilization of land by the betel nut growers of Nagaon district in different cultivation –

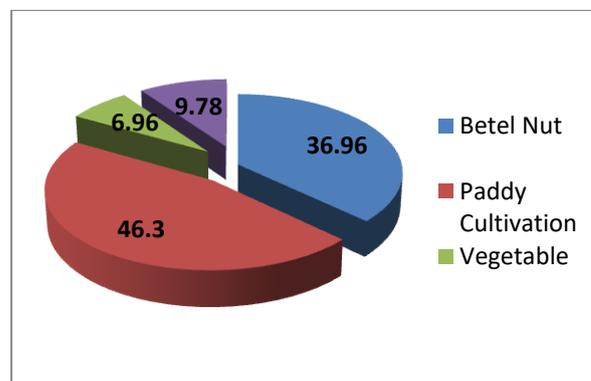


Figure 1.1: Distribution of total household land on the basis of its utilization



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Source: Field Survey, September 2019

The above figure shows the distribution of land use by the sample growers in Nagaon district. Here it is seen that out of total land holdings of the betel nut growers, 46.3 per cent land are used for paddy cultivation, which is highest among the sample growers. Along with this 36.96 per cent land are used for betel nut cultivation, 6.96 per cent land are used for vegetable cultivation and the rest 9.78 per cent land are used for other purposes.

2.2 Distribution of the Sample Growers on the Basis of Betel Nut Garden:

As stated in earlier chapters that the betel nut and betel leaf are produced in a high rate in Nagaon district of Assam, but most of the production is cultivated in homestead gardens for self-consumption and some amount are sold in the local market. In the present study area most of the betel nut gardens are small in size and it is measured in 'Bigha' (a local unit of land size). In the following table, the distribution of the sample growers on the basis of betel nut garden are shown –

Table 1.1: Distribution of Sample Growers on the basis of Betel Nut Garden:

Garden Size (Bigha)	Number of Betel Nut Growers	Percentage
Below 7.5	234	97.5
7.5 - 15	06	2.5
Above 15	0	0
Total	240	100

Source: Field Survey, September 2019

The above table shows that, out of the total sample grower 97.5 per cent growers (234) have betel nut gardens of below 7.5 Bigha land and only 2.5 per cent growers (06) have betel nut gardens of 7.5-15 Bigha land. No growers are found having a garden more than 15 Bigha land. This implies that there is no betel nut cultivable garden covering above 15 bighas of land owned by the growers. i.e. majority of the betel nut growers were marginal and small growers.

1.3 Mixed Cropping System of the Sample Betel Nut Growers:

The sample betel nut growers of the study area have done mixed cropping in order to reduce the risk associated with the betel nut cultivation as these crops can give additional revenue to the growers. In this context, they adopt some mixed crop with betel nut cultivation such as betel leaf, black pepper, vegetable etc.

Table 1.2: Distribution of sample growers on the basis of Mixed Farming System

Mixed Cropping System	Number of Sample Growers	Percentage
Betel nut + Betel Leaf	126	52.5
Betel nut + Black Pepper	84	35.0
Betel nut + Vegetable	30	12.5
Total	240	100

Source: Field Survey, September 2019

The above table 4.2 reveals that out of the total 240 sample betel nut growers 52.5 percent (126) growers have done

betel nut with betel leaf cultivation which is the highest among all other mixed farming categories. 35 percent (84) growers have done betel nut with black pepper and 12.5 percent (30) growers have done betel nuts with seasonal vegetables.

1.4 Distribution of Labour Used by the Betel Nut Growers of the Study Area:

The sample betel nut growers of Nagaon district have used both family and hired labourers in betel nut cultivation. Family labourers are those labourers that are engaged in cultivation from the same family of the growers. On the other hand, hired labourers are those labourers that are hired and engaged in cultivation, but they do not belong to the family of the growers. In the study area, there were some households who were found to be engaging themselves in land leveling, plantation or seedlings of betel nuts and also involved in cleaning the garden. For this reason the wage for family labourers were not accounted in this study.

Table 1.3 Distribution of Hired Labourers into different Categories:

Categories	Number of Labourers	Percentages
Male	251	93.3
Female	18	6.7
Total	269	100

Source: Field Survey, September 2019

The above table shows the number of hired labourers employed in the sample betel nut gardens. The total numbers of employed hired labourers were 269 and out of this 251 were male labourers and 18 were female labourers. i.e. majority of the labourers were male (almost 93.3 per cent).

1.5 Varieties of Betel Nut Produced by the Sample Growers:

Betel nut cultivation was practiced as homestead cultivation among the sample betel nut growers in Nagaon district. But among them, some growers carried cultivation in the form of garden and they have done it by traditional method.

All the betel nut growers of Nagaon district have planted local variety of betel nut seedlings. There were two types of betel nut produced in the study areas recognized by the sample growers through their colour, shape and time of production. Those varieties were –

White Variety: The white varieties of betel nut are produced by the growers which have nuts that range from off white to a deep tan colour. These are the soft, young and immature nuts of betel nut tree that are dried under sunlight for about thirty-fourty days¹ after which they became off white in colour and bagged for sale. The white varieties of betel nut are commonly known as *kahikuchi*. Kahikuchi are mostly used for the preparation of scented supari.

Red Variety: Another type of betel nut is the red varieties of it. These are generally hard and mature nuts that range from red to deep purple in colour.

¹ Cloudy days are not counted as part of the total drying process.

Firstly, these are harvested from the tree, and then peeled to get the nuts and boiled after which they are dried under sunlight for thirty-fourty days. The red varieties of betel nuts have more demand than the white varieties in the market and that is why the prices of red varieties of betel nuts are relatively high than the white varieties of it. These are also used for the preparation of pan masala, ghutka etc. It is also mentionable that almost 20 percent of the raw betel nuts are kept for self consumption by the growers of Nagaon district.

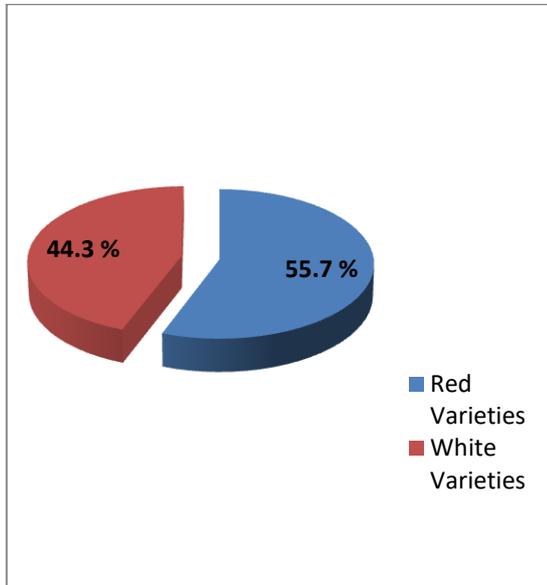


Figure 1.2: Distribution of the Betel Nut Growers on the Basis of its Types

Source: Field Survey, September 2019

In the above figure the distribution of betel nut growers on the basis of its types is shown. From the field survey it is found that, out of 240 betel nut growers 44.3 per cent (106) growers produce the white varieties and 55.7 per cent (134) growers produce the red varieties of betel nuts. The reason behind the higher production of red varieties over white varieties is the higher market of the red varieties of betel nuts that gives a boost to the growers for its higher production.

1.6 Production of Betel Nuts in the Study Area:

The productions of betel nuts in the study area were measured in terms of dry cured nuts that can be sold in the market. From the field survey it is found that the growers of the study area were produced a sufficient amount of betel nuts. According to the growers, the process of betel nut cultivation is very easy and no continuous efforts are needed for its yield like other crops. But in the last two-three years the production of betel nuts are highly falls due to the attack of both squirrels and monkeys. The following figure has shown a picture of the current production of the betel nut growers in Nagaon district.

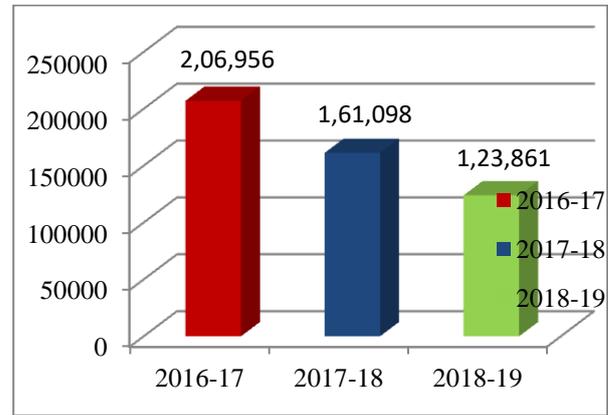


Figure 1.3: Production of Betel Nut in terms of dry cured nuts (Kg) in the study area from 2016-17, 2017-18 and 2018-19

Source: Field Survey, September 2019

The above figure 4.3 shows the production of betel nuts in terms of dry cured nuts (in Kg) in the study area. During the field survey, the data of betel nut production have been collected for three consecutive years viz. 2016-17, 2017-18 and 2018-19. Although the figure shows that the production of betel nuts are decreasing year after year, but the betel nut growers are still earning profits from its production. As reported by the sample growers the main reasons for fall in production are due to the attacks of squirrels and monkeys on the immature nuts and the possibility of affected by various disease on the betel nut trees.

1.7 Cost Associated with Betel Nut Cultivation in the Study Area:

The level of production can be raised by employing factor and non-factor inputs. The expenses incurred on hiring or buying these inputs is known as cost of production. The estimation of cost in a production process is important because cost and revenue determine the producer’s decision to produce a level of output which earns him maximum profit (Bahuguna, 2016). In this study, the cost of cultivation of betel nut garden in various stages is briefly discussed with the help of the information provided by the sample growers as shown below –

Establishment Cost: The establishment cost refers to the minimum cost incurred by the producer in establishing his/her production plant in a particular place. In case of betel nut cultivation, it is the one time investment on betel nut garden. In this analysis, the establishment cost consist the cost incurred on land leveling, betel nut seedling or plantation the garden etc. Although most of the sample growers of the study area did not purchase betel nut seedling or plant from local markets and others, but some growers incurred this cost. The prevailing wage rate of labour during 2019 in the study area was rupees 300 per day. The cost of one seedling on an average is 15 rupees and the average number of seedling planted per bigha is 35.

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Operation and Maintenance Costs: Under this category, only the labour cost is incurred by the sample growers in the study area because only one or two times in a year were needed for cleaning the betel nut garden for operation and maintenance of it. The gestation period of a betel nut tree is five to six years. According to the growers, the first three years required two times cleaning in a year and from fourth year it required one times cleaning in a year. There also needed labourers to clean the betel nut scrubs and trees of the garden. The prevailing labour wage rate during 2019 in the study area was rupees 300 per day. Use of chemical fertilizer, insecticide, pesticide and manures were not found in the study area. Moreover, rainfall was the only source of irrigation received by the betel nut growers.

Other Costs: The other costs associated with betel nut cultivation were the cost on harvesting the nuts, transport etc. The harvesting cost includes the cost on labour for plucking and collecting. On the other hand, transportation cost refers to the cost involved for carrying the sack of products from garden to the local market. But as in the study area the number of growers who sold betel nut per unit basis (*Pon*, a local unit of measurement of betel nut) was absent, so these costs were not present. The costs of betel nut production were calculated only for the marginal and small garden growers who sold as whole garden to the traders in the study area –

Table 1.4 Average Cost of the Small and Medium Betel Nut Garden Growers:

SL No.	Nature of Cost	Estimated Cost (Rs)		
		Marginal	Small	Average
A	Establishment Costs	1465.56 (57.68)	5015.36 (65.28)	3240.46 (63.39)
I	Land Revenue	227.64 (8.96)	848.69 (11.04)	538.16 (10.52)
II	Land Leveling	980.34 (38.58)	1966.67 (25.6)	1473.5 (28.83)
III	Betel Nut Seedling or Plantation	257.58 (10.14)	2200 (28.64)	1228.8 (24.04)
B	Operation and Maintenance Costs	1075 (42.32)	2666.67 (34.72)	1870.83 (36.61)
I	Cleaning Betel Nut Garden	1075 (42.32)	2666.67 (34.72)	1870.83 (36.61)
C	Other Costs	-	-	-
I	Harvesting Costs	-	-	-
II	Transportation Costs	-	-	-
	Total Cost (A+B+C)	2540.56 (100.00)	7682.03 (100.00)	5111.29 (100.00)

Source: Field Survey, September 2019 (figures in brackets indicate Percentage)

It is clear from the table 4.4 that, the average cost of betel nut cultivation of the sample growers in the study area was 5111.29 rupees. Almost 63.39 per cent of this cost constitutes establishment cost. Under this cost category, labour cost on land leveling occupied highest proportion which was 36.61 per cent and the minimum cost was on land revenue which was 10.52 per cent. Moreover, 36.61 per cent of the total cost constitutes operation and maintenance

cost under which only the cost of labour for cleaning the garden was included. But it was observed that, the whole garden sellers were not incurred the harvesting and transportation cost in the study area. However, the cost incurred by medium betel nut growers was slightly higher than the small growers.

V. RESULTS

1.8 Total Revenue of the Betel Nut Growers in the Study Area:

In economics, the revenue refers to the money receipts of a producer from selling its output. In the words of Dooley (2003), the revenue of a firm is its sales receipts or money receipts from the sale of a product. Total revenue is estimated as a product of quantity sold (Q) and price of the good (P). In the present study, the revenue from betel nut cultivation was also calculated in the same way. The average quantity sold of betel nut in the study area was 378.85 kilogram and the average price of the betel nut ranges from Rs 15-25 per kilogram. Hence, it will be rational to take the price per kilogram as an annual average price, which was Rs 20 for the year 2018-19. But the price is fluctuated every season.

Table 1.5 Average Revenue of the Marginal and Small Betel Nut Garden Growers:

SL No	Types of Garden Grower	Estimated Revenue (Rs)
1	Marginal	9155.56
2	Small	33666.67
3	Average	21411.11

Source: Field Survey, September 2019

The above table 4.5 shows that, the average per bigha revenue earned by the marginal and small betel nut garden growers in the study area was 21411.11 rupees. It was observed that the small garden growers earned more revenue than the marginal garden growers in the study area. This is because, as the garden size becomes bigger it will have more betel nut trees, resulting more output and more revenue. The distribution of total income earned by the sample growers in the year 2018-19 from betel nut cultivation in Nagaon district are shown with the help of the following figure–

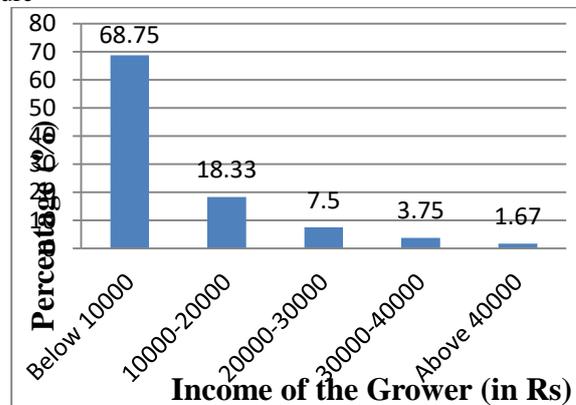


Figure 1.4: Distribution of Sample Grower's Income from Betel Nut:

Source: Field Survey, September 2019

The above figure 4.4 reveals that, out of total sample growers 68.75 percent (165) grower's income from betel nut were below Rs. 10000, which is highest among all other income categories. Moreover, 18.33 percent (44) grower's income ranges from Rs 10000-20000, 7.5 percent (18) grower's income ranges from Rs 20000-30000 and 3.75 percent (09) and 1.67 percent (04) grower's income ranges from 30000-40000 and above Rs 40000 respectively. But as the majority of the growers are always in a position of earning profit.

1.9 Profit Volume Ratio (PVR) of the Sample Growers:

The Profit Volume Ratio (PVR) is one of the important measures of profitability of a firm or a producer. It is also known as 'contribution ratio' as it shows the relationship between contribution and sales value of the firm i.e.

$$\text{Profit Volume Ratio} = \frac{\text{Contribution}}{\text{Sales Value}} \times 100$$

Where, Contribution = Sales Value – Variable Cost

In the present study, except 'land revenue' given by the betel nut growers, all other costs are taken as variable cost for the calculation of Profit Volume Ratio. Higher the PVR higher will be the profit enjoyed by the betel nut grower and vice versa.

Table 1.6 Profit Volume Ratio (PVR) of the sample Growers:

Garden Size (Bigha)	Minimum PVR	Maximum PVR	Average PVR
Below 7.5	27.5	67.27	53.38
7.5 - 15	32.0	81.88	62.94
Above 15	-	-	-

Source: Field Survey, September 2019

The above table shows that, both the minimum and maximum profit volume ratio is highest in 7.5-15 bigha gardens. Similarly, average profit volume ratio is also highest in the same category. This implies that with increase in betel nut garden size, the profit volume ratio of the growers also increases.

1.10 Productivity of Betel Nut Gardens in the Study Area:

Productivity is an essential factor in every production process. It indicates the ratio of output to the input used in the production. If the productivity is higher than it implies that more output is produced using the same level of inputs. Although productivity is measured in quantity terms, but due to lack of common physical unit of measurement, the monetary terms of inputs and outputs are used in the present study.

The overall productivity of the betel nuts in Nagaon district are calculated with the help of the following formula –

$$\text{Overall Productivity} = \frac{\text{Output (Sales value)}}{\text{Input (Cost)}}$$

Table 1.7 Overall Productivity of Betel Nut Gardens in the Study Area

Garden Size (Bigha)	Minimum Productivity	Maximum Productivity	Average Productivity
Below 7.5	0.78	11.02	3.6
7.5 - 15	3.25	26.5	5.88
Above 15	-	-	-

Source: Field Survey, September 2019

The above table 4.6 shows the productivity of betel nuts in the study area and to calculate the productivity, the betel nut gardens are divided into three categories. In case of below 7.5 bigha gardens, the minimum productivity was found 0.78 and maximum productivity was found 11.02; while the minimum productivity was 3.25, maximum productivity was 26.5 and average productivity was found 5.88 in case of 7.5-15 bigha gardens. The maximum productivity was found in 7.5-15 bigha gardens which were 26.5. This implies that increase in garden size also increases the productivity of betel nuts.

1.11 Uses of Produced Betel Nuts in the Study Area:

The betel nut and the betel leaf are the mostly used complimentary pair entered India during early Gupta period and merged into our culture. The popularity of this pair increased steadily and became an essential commodity for us. According to Ahuja, S.C. and Ahuja, Uma (2011), the betel nuts are regarded as an auspicious symbol of hospitality and it reflects a moral, social and cultural commitment. Moreover, the demand for betel nuts and its chewing products are steadily increasing in India as well as in many other countries of the world. For these reasons, the growers of Nagaon district have produced a large amount of betel nuts. As reported by the sample growers of the study area, the main uses of the betel nut cultivation can be represented with the help of the following figure-

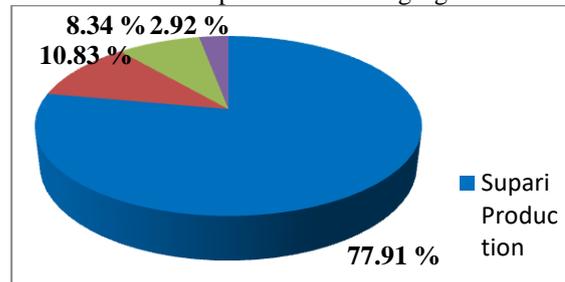


Figure 4.4 Distributions of Betel Nuts According to its Uses in the Study Area:

Source: Field Survey, September 2019

The above figure reveals that, out of total sample growers of the study area, majority of the growers, i.e., 77.91 per cent (187) growers produced betel nuts for the preparation of supari as these are heavily demanded in the local as well as national market. However, 10.83 per cent (26) growers produced it for colour production.

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The red varieties of betel nuts are used for colour productions that are sold in different packets in the market. 8.34 per cent (20) growers produced it only for home consumption as it became an essential part of local culture and heritage; and only 2.92 per cent (07) growers produced and used it for making various items of art and craft. Recently interest in art in betel nuts has been generated and a number of art items are available in the market. Moreover, the handicrafts made with betel nuts are also seen in the markets.



Sukanya Hazarika, Masters in English, Dept. of English and Foreign Languages, Tezpur University, Tezpur, Assam



Durlove Borah, M.Phil Research Scholar, Dept. of Economics, Dibrugarh University, Dibrugarh, Assam

VI. CONCLUSION

With the change of traditional farming system and less adherence to inter cropping practices, a visible growth of betel nut production can be seen in India for commercial profit motive. Its wide ranging business has been promoted through the packaged mastication available in the market. Even *supari* (Hindi language) which is a dried form of betel nut has been exported to outside of Assam also. In the study, through the data samples, we can get a clear picture of different cropping practices of betel nut ranging from land utilization to maintenance and investment of prices for an extensive business. Moreover, extreme climatic conditions like heavy temperature, less rainfall can hamper its production. In some states, irrigation facility has also been provided in the cultivated areas. For the quality of land, mainly well drained, deep clay loamy soil is suitable for betel nut. However, a single betel nut tree can survive up to sixty years in average. With an increased improvement in management and upgraded cropping patterns, the cultivation of betel nut can be a good choice for farmers and can also be a profitable source of income for Indian economy. In a way, betel nut production constitutes one of the major earning sources for Assamese agrarian society.

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AUTHORS PROFILE



Jayanta Dutta, Ph. D Research Scholar, Dept. of Mode Modern Indian Languages and Literary Studies, Gauhati University, Guwahati, Assam