A DISSERTATION ON

"A STUDY ON UTILITY OF BAMBOO PRODUCT IN ASSAM WITH SPECIAL REFERENCE TO KARBI ANGLONG DISTRICT"

SUBMITTED TO DEPARTMENT OF COMMERCE, GAUHATI UNIVERSITY IN PARTIAL FULFILMENT FOR THE AWARD OF DEGREE IN MASTER OF COMMERCE

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CERTIFICATE OF ORIGINALITY

This is to certify that the dissertation entitle 'A dissertation on study on utility of bamboo product in Assam with special reference to Karbi Anglong district' Is an original work carried out and submitted by ARUNJYOTI DEBNATH, Roll no: PC-191-020-0068, GU Registration no: 243612 of 2016-2017 in partial fulfilment of M.Com 3rd semester course under Gauhati University.

The matter embodied in this paper is genuine work and has been done under my guidance and has not been submitted to this university or any other university/institution for the award of any degree, diploma and certificate nor published anywhere.

Any person/organisation will be highly appreciated for their help and co-operation in his endeavour.

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DECLARATION

I hereby declare that "A dissertation on a study on utility of bamboo product in assam with special reference to karbi angling district." is submitted by me in partial fulfilment of M.Com 3rd semester course under Gauhati University.

The matter embodied in this paper is a genuine work and has not been submitted either to this university or to any other university/institution for the requirement of any other course of the study.

I also declare that no chapter of this work in whole or in part is incorporated in this report from any earlier work done by others.

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ACKNOWLEDGEMENT

"It is not possible to prepare a dissertation without the assistance and encouragement of other people. This one is certainly no exception."

On the very outset of this report, I would like to extend my sincere and heartfelt obligation towards all the personage who have helped me in this project. Without this active guidance, help, cooperation and encouragement, I would not have made headway in the project.

I am sincerely thankful to DR. DHANI KANTA KALITA, Asstt. Professor [dept. of finance], for guiding me with attention and care. He has provided me with valuable insights during the entire project work and has taken pain to go through the project and make necessary corrections as and when needed.

Lastly, I'm also thankful to all my classmate, parents and well-wishers who with their generous help and support made it a relatively easier affair to complete the project.

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PREFACE

The study on the topic of "A STUDY ON UTILITY OF BAMBOO PRODUCT IN ASSAM WITH SPECIAL REFERENCE TO KARBI ANGLONG DISTRICT" in Assam is negotiated to bring light to the practical lifestyle and such happenings which have actually taken place engaging in this line of business, which in a narrow look seems as healthy life. The Socio-Economic condition of paper bag factory workers as from the field investigation realizing that it is much below the standard level as they areeconomically poor and suffering and the society as a whole also treat them in anegated way.

The proposed study is made to realize the various ongoing problems and the constraints faced by the paper bag factory worker of Guwahati. Keeping in view the entire project report is divided in 3 chapters keeping a special attention on the particular problem and provide precise suggestions.

I offer my sincere thanks to DR. DHANI KANTA KALITA [Assistance Professor, Department of Finance, and K.C.Das Commerce College] for his immense help and support in preparing my dissertation.

ARUNJYOTI DEBNATH

LIST OF TABLES

LIST OF FIGURES

TABLES OF CONTENT

CHAPTER- I

INTRODUCTION

CHAPTER – I
INTRODUCTION

1.1. (A). Introduction.

The Bamboos are evergreen perennial flowering plant in the subfamily Bambusoideae of the grass family poaceae.

In Bamboo, as in other grass, the inter uodal regions of the stem are usually hollow and the vascular bundle in the cross section are scattered throughout the stem instead of in a cylindrical arrangement. Bamboos include some of the fastest growing plants in the world due to unique rhizome depend system. Bamboo are economically important plants with innumerable uses and many environmental benefits. Improving the avoid ability of information on Bamboos is an important steps towards the development of sustainable utilization and convention for this valuable renewable environmentally friendly resources, not only in its natural habit, but also wherever it is cultivated throughout the world.

Bamboo is a name for oven 140 species of giant grasses in 115 different genara. All Bamboos have wood like stems. Bamboos mainly grow in Africa, America and in Asia but can easily grow in Europe. Almost all species of Bamboo have hollow stems divided into voeles or joints. AThe stem can be up to 30 cm (a foot) in a diameter. Each of the voeles has one side bud. Not all of those buds depends into branches, but some do. This make Bamboo one ofbthe grasses that have a branch structure. Bamboo rarely flowers. Some species only flowers once, and then die off. The distance of two joints in a Bamboo is the basic of traditional Japanese unit of measurement.

1.1(B). North-East India and Bamboo products.

India is the second only to China in Bamboo production and it is immensely popular in northeastern region. Bamboo is one of the most abundant and environmental friendly and sustainable resources available in northeast region, which is not being used to its full potential. North eastern Himalayan region of India has great diversity of Bamboo resources. Most of the species come across in our country are indigenous. Of them are two primary species Dendrocalamusstrictus and the bambusaarundinacea. Dense Bamboos are found mostly in Arunachal Pradesh followed by Mizoram and Manipur. As this region is the largest reservoir of Bamboo resource in India, screen is required to indentify the most delicate Bamboo species the development of package of practices for their mass multiplication. Four Assam, Mizoram and Nagaland have formulated their own policies for development of Bamboo and conservation of Bamboo forest.

High diversity of Bamboo resources plays a significant role in the food and nutritional security of the tribal population. Tribal communities of the region use this potential resources for food, shelter, furniture, handicrafts, medicines and various ethno religious purpose.
The north east India state is called Bamboo Queen of India.
The skill of working with Bamboo is extremely widespread with a large parent age of the ethnic population capable to refund craftsmanship in this material. The vigorous Bamboo craft tradition of Northeast gets the most creative expression through thee craftsmanship of the various Northeastern tribes. Intricate structures and myriad types of cuts and profiles numerous types of chisels are richly illustrated through the various types of Bamboo crafts that these antisenses make. This region can add to the global export to European countries. All those are labone intensive industries which have an employment to the developing states. Thus bamboo industry has the potential to become a major employer in the Northeast state.

1.1 (C). Assam.

The Northeastern India covering a geographical area of 62,179 Sq.Km comprising of 7 state i.e Arunachal Pradesh, Assam, Mizoram, Nagaland, Tripura, Manipur, Meghalaya of which Assam is of its wild life, archeological sites and tea plantations. Assam has 34 districts, they are :- 1. Tinsukia, 2. Dibrugarh, 3. Dhemaji, 4. Charaideo, 5. Sivsagar, 6. Lakhimpur, 7. Majuli, 8. Jorhat, 9. Bishwanath, 10. Golaghat, 11. KarbiAnglong, 12. Sonitpur, 13. Nagaon, Hojai, 15, KarbiAnglong West, 16. Dima Hassao, 17. Cachar, 18. Hailakandi, 19. Karimganj, 20. Morigaon, 21. Udalguri, Darrang, 23. Kamrup Metro, 24. Baksa, 25. Nalbari, 26. Kamrup, 27. Barpeta, 28. Chirang, 29. Bongaigaon, 30. Goalpara, 31. Kokrajhar, 32. Dhubri, 33. South SalmaraMankachar, 34. Bajali.

Assam is famous for Assam Tea and Assam skill. The state was the first site for oil drilling in Asia. Assam is home to the one horned Indian Rhinoceros.

1.1 (D). Traditional uses of Bamboos among the Karbis, a hill Tribe of India.

The traditional uses of Bamboos among the Karbis, a hill Tribe of state of Assam in India Their significant in the social, culture and religious life of the people.

Bamboo also known as "poor man timber" is also stands true for countryside in Northeast India. It is probably the most extensively used plant resources and associated with all spheres of life i.e food, medicines, crafts, agricultural implants, house building materials, cordage, etc. However, Bamboo is commonly use in construction of house in rural areas.

Karbis as well as other hill tribes of Northeast India have inhabited a rich treasure of knowledge on art and crafts which are reflected in Culture such as motibs on garments, metal works, pottery, wood, cane and Bamboo works, blacksmith, musical instrument. Necessity may have compelled the hill Karbis to utilize forest resources for meeting their daily needs.

Due long uses and emotional relationship many plants and product in have been incorporated in their social and cultural life. One such example is used of handicrafts whose development may be attributed to the needs of day to day life. But today are religious and social requirements. Because use of certain crafts is mandatory during religious as well as social occasions among the Karbis.

1.1 (E). OVERVIEW OF THE UTILITY OF BAMBOO.

BAMBOO INDUSTRIES IN INDIA.

Being one of India's most valuable resources and given the vast diversity in its applicability and the enormous scope for improvement of rural and tribal livelihood and for the environment, Bamboo is among the most important resources to be leveraged towords the alleviation of rural proverty, empowerment of women and environmental rejuvenation. Bamboos are a diverses and permitive group of perennial plant ofbthe family poaceae. They are cosmopolitan in distribution, particularly distributed in the Asia Pacific reason. In India , it is found all over the country, particularly in the tropical, sub tropical and temperate regions where the annual rainfall range between 1200 mm to 4000 mm and the temperature varies between 16°c and 38°c. There are approximately 2000 species are found worldwide belonging to over 70 genera and over an area of 14 million hectare worldwide. About 80% of the species are confined to china, India and Myanmar . Marsh and Smith (2007) claim that the presence of nir source value addition in modern value claims implies that the industrial component of the bamboo section has an excellent potential in times of its Pro -poor in poverty alleviation. theindustrialisation of the bamboo section is thus, an essential take for bamboo to have any true effect on the lives of the millions who depend upon it India is very rich in bamboo diversity. There are 126 Indigenous and exotic species under 23 genera, which are found naturally and under cultivation on both. Northeast India supports about 50% of the total genetic resources of bemboo followed by peninsular India mainly the eastern and western ghats 23%. North eastern India Indo genetic plains and endowment and Nicobar Island account for the remaining diversity. More than 50% of the bembos scoring in India are endemic and regular league, 19 spaces are rare and threatened. Clams forming bamboo constitutes over 67% of the total growing stock of which dendrocalamus structures accounts 45%, bambusabambos 13%, D. Hamiltonii 7%, B. Tulsa 5%, B. Pallidal 4% and all other species account in total for 6%. Melocanebaccifera, a non clump forming bamboo account for 20% of the growing stock and is found only e in the the Northeastern states. In India is the 3rd richest country in bamboo resources next to China (300 species) Japan 237 species. North East India falls under the Indo Burma region which is one of the eight hottest biodiversity Hotspots with more than 7000 endemic plants. 65% of bembo in the country and 20% of the

world's bambo grow in this reason. This reason is kaunsi the rate as the bamboo Paradise of India and is a treasure house of bambos. Accounts for around of the total forest cover of India. Northeast India harbors more than 54 species of bamboos out of 128 reported from India of which 35 species are endemic of this reason.

The domestic bamboo industry has been held back owing to a wild variety to issue is its value chains, including regulatory and legislative barriers to cultivation and harvesting of bamboo, challenges in its procurement, lack of technology know how among the primary uses of bamboo Lake off market linkages and insufficient market demand. As a result, in India remains a material for personal uses in house the only product produced is industrially produced by small firms lacking in sufficient capital to pashu value addition on quality enhancement. The study of the bamboo industry is worth fully deficient in India, as in any date on bamboo Trade and commerce in general the association of them goes which livelihood promotion remains confined to Hindi crops promotion as a result of which even government programmers fail to appreciate its industrial potential. In addition, archaic and confusing regulatory regions as well as conflicting legislation plants bamboo from reaching its true potential.

BAMBOO INDUSTRY IN ASSAM.

Bamboo are an integral part in the traditional home gardens of Assam, Northeast India bamboo is traditionally considered as the poor man wood and labeled as garden gold and being considered as a measure export item for the global market. Bamboo is one of the fastest growing plant on Earth and make grow up to 1.2 metre per day it is an environment friendly plant as its roots can reduce soil erosion up to 75%, generates more oxygen than equivalent stands of trees, lowers light intensity, protects against ultraviolet rays and is an important atmospheric and soil purifier. It is a multipurpose and high yielding renewable resources with great economic value. The North eastern region of India is one of the richest reservoirs of genetic diversity with its own unique biodiversity, habitants and ecosystem people in the region are using bamboo for various purpose from time immemorial right from bridges over mighty rivers to sitting mats, safety items against rain carry bags writing pens household utensils cradle walking stick for old man and finally bier to carry the dead body.

The making of bamboo products is perhaps the most universal of all the crafts practiced by a large number of antisense scattered throughout the state. It is practiced as a household industry and no mechanical device is used to stop bamboo products are used for a wide range of purpose and extensively used in every household.

The industry has coved for itself an important place among the Hindi crops of the state. It provides part time employment to the cultivations in their spare time, and full time employment to the few highly skilled antisense who produce only find decorative basket, furniture and mats on a commercial basis. No definite records are available to establish the antiquity history and origin of these craft in Assam. However, it can be safely e assume that the craft was practiced since the mystery past with the very down of civilization. In the early period in Assam bamboo was held with special reference and is forbidden to cut in “Auspicious days" it is a general belief dead bamboo processes auspicious character and is of religious significance.

1.1 (F). ESSENTIAL USES OF BAMBOO.

(a) Uses of bamboo in construction

Bamboo is extensively used for construction of house in northeast India and earthquake prone zone full stop it is also used as viable replacement for wood and it is one of the strongest buildings materials. Other tribes in India also use bamboo in house construction. The huts of the Maler are made of bamboo along with other materials like wood and kher. The stompers' of Andaman and Nicobar Islands, use bamboo and wood to make the house floor. Huts of the tribes like Mikirs, hela, chittari, pathi and kudie are made of bamboo and thatched with leaves, straw and grass. The Mikir house on the hills are built on piles several feet above the ground. Houses are made of split flattened bamboo. At level higher than the floor, they there water chungas on bamboo tubes. The iduMishi of Arunachal Pradesh the people of of Tripura make their houses and huts using bamboo. The tribes of Arunachal make the house floor using split bambos. A mizu village in British and British period was an aglomenation of bamboo houses on top of a hill. In this house, they often use split bamboswhitch serve as walls. In Meghalaya, the gross use bamboo meeting on the floor.

The war khasi houses in Sheela and thyrna villages of Meghalaya are made of bamboo as the the main materials. The houses are raised on bamboo piles with a wooden ladder full stop in many people places in the interiors of India, bamboo is used for making bridges, 4 transport of human beings and materials from one place to another. For the khasi, a conical structure having a seat in used for carrying the sick and aged person

(b) Use of bamboo in agriculture

Bamboo is used in making to diverse implements for agriculture by the tribals. among the tools used by the mishmi of Arunachal Pradesh in agriculture consisted of dibble sticks dogs leg hoe-bamboo made hoe is tied to a single piece of wood and bamboo tied hoe used for wedding. Among the service of their villages Karbianglong for irrigation by bamboo aqueduct are used to bring water from the the nearest steam to irrigate the panbaris on betel nut groves. Bembo continues to play a predominant rule in the life of the car be in multiple aspects from agriculture tools and implements to shelter, food and livelihood. For the Karbis

bamboo trunks are also being used by two clear mountain water to the thethe adjoining smaller field. Research shows that bamboo is is used as a water distribution system. In Karbianglong, an Asam state of India drip irrigation system was built from bamboo to water the states back pepper and betel leaf crops.

Bamboo made warfare weapons and hunting fishing implements most of the hunters like the Andaman Islands the eskimos the the Canadian Indians the Indians of Tierra del Fuego, the pygmies of African Congo and the bushmen of South Africa use bo and arrow as their main weapon of hunting. The most useful item in the forest of the Semang of Malay Peninsula is the bamboo. Its splinters are used for avaking sharp knives, spear and arrow points, tubular cooking vessel, arrow quiver and water carrier. Bo and arrow tipped with poison is the main weapon for them. In Peninsular Malaysia, the temiar and semoi make thier traditional hunting weapons such as pipes from two intenvodes of bamboo. In in padam and Minyong culture and arrow are used for killing the gave.

c) Use of bamboo in game and sports.

use of bamboo in sport in certain cultures has been highlighted in some works. In traditional Malay culture bamboo is used to make the frame of a kite. Among the garbage have a game which resembles a sea show and is played by placing a long bambo shaft is placed on a large stone to make a see show. Archery is very popular among the Karbis. The shaft of the arrow is made of bamboo bow and arrow heads made of the iron and steels. The usual toy of Kashi children are the miniature the bow and arrow made of bamboo.

d) Use of bamboo in food.

Bengo is also used as a cook and carry food container for those who work in the fields or travel.bamboo is also used as a food item by many people in the world. Young shorts and grains zero. Abyssinica which is a variety of bamboo, are eaten as food in Tanzania and by the Acholi of Uganda particula during farine times. The grains is cooked in the the same way as rice and is Setu tasty March like it.

In the district of Karbianglong, the Karbis was also prepared some cuisines with Bamboo shoots. The Karbi people the bamboo shorts (Hang-up) in two different ways they are :- up-thor (the sour one) and upwai (the sweet one). The sure one people with curry, such as pork, arum, dry fish etc. While this sweet one usually fried with mustard oil full stop bamboo tubes are used as cooking utensils which is Karbis traditional method. The Rice cook from such bamboo tubes has a good test and flavour. The bamboo tube coocked with meat is call ok lankpong traditionally, such ok lankpong is use during the chojunnitual to honor the priest.

There's a bamboo shoots harvesting festival called hen up ahi keen by the entire village community fullstop a huge Bamboo basket is enacted in the middle of a village where the bamboo shoots are sliced and put inside the basket. A pig is sacrifice, and put it together with the bamboo shoots. This remain until hen-up-ahi-kekan festival is celebrate. The bamboo shoots and meat are then distributed among all the the villagers followed by a ritual feast soon after. This is a dying tradition but the practice has not completely disappeared.

e) Use of bamboo in musical instrument.

Use of bamboo is musical instrument are not only in Karbianglong district it is used in all over the country the flute, which is aa part of the classical music tradition in India is is the most popular wengo musical instrument in the country. Not many no however that the the versatile bamboo has produced several other musical instrument that have been part of Kerala folk music tradition for hundreds of years. The music produced from the bamboo need how has several practitioners is is central Kerala all of them determined to reinvent bambu music and spread the word of its potential.

f) Use of bamboo in medicine.

bamboos are described as one of the most important renewable easily of retained and valuable of all forest resources. In this region bamboo leaves are described in the traditional medicine for treating hypertension, arteniosclerosis, candiovasculardiseage, and certain forms of ceneen.

1.2 REVIEW OF LITERATURE.

The following review of Literature relating to the uses of Bamboo in different culture show different studies done by scholars, researchers and academicians. Botanical studies related to Bamboo different studies on Bamboo species in India were done by scholars like Dutch scientist, Van Rheeda who to India in 1678 AD (Ghosh 2008). Subsequent studies on the some were doneby Ghosh (2008) and Das (1988). Other Bamboo species related studies on the done in west Siang and North Lakhimpur (Kochhar et al 1988), Thiland (Anantachote 1988), Cerrados of Brazil (Guala 2003), Nigeria (0 mobowale and Ogedang be 2008), Argentina (Agrasar and Rodriguez 2003), Northern Australia (Franklin 2003), Bolivia (Clark 2003). Genetic wealth of Bamboo in India and their conservation strategies was studied (Thomas et al 1988). Similar work was done in Kenya (Were 1988), on the Nyishi tribe of papum pare district (Handique et al 2010) and on pahari community at Badikhel Village, Lalitpur in Nepal (Bajracharya et al 2006/2007). Suwannapinunt (1988), Chackol and Jayaraman (1988), Patil and pati (1988), Thomes (1988), Maoyi et al (1988), Arya et al (2008) and Nath et al (2008) discuss the details of planting and growth of Bamboo.

Studies have focused on the management of national Bamboo forest, Bamboo propagation and growth. Bamboo research work was at its peek during the end of 1969 (Boontawee 1988). Other studies on management of Bamboo have been done in India (Chaturvedi 1988), Particularly in Kerala (Kumar 1988) in Bangladesh (Banik 1988), Shahdol of Madhya Pradesh (Dwivedi 1988), Meghalaya, Mizoram and Sikkim (Bhatt et al 2003) Research works on the role of Bamboo in economy development, in national and international markets have been done by Belchar (1995), Blowfield et al (1995), Mathaw (1995), Thammincha (1995) and Boa (1995). Bamboo generates large scale rural employment in India, particularly in the management of Bamboo forests and in the harvesting, collection, Transport, storage, processing and utilization of Bamboo. In India, it estimated that Bamboo generates a total of 432 million works days and Rs. 13 billion in wages annually (Adkoli 1995).

1.3 OBJECTIVES OF THE STUDY

1. To find the uses of Bamboo species in day to day Life of Karbi tribe of Karbi Anglong.
2. To study the different species of Bamboo used for different Traditional purpose.

1.4 (A)Research Methodoloy :

Research is an art of scientific investigation. It is defined as a careful investigation or enquiry especially through search of new facts in any branch of knowledge.

Research Methology is the specific procedure used to identify, select, process and analyze information about a topic. Research methodologynot only talk about methods but also the logic behind the methods used in the context of a research study.

(B)RESEARCH DESIGN:

Research design stands for advance planning of the methods to be adopted for collecting the relevent data and the techniques to be used their analysis keeping in view the objectives of the research.

The research design adopted for the purpose of collection nof primary data is "questionnaire". The questionnire and feedback of peoples are taken into account. A predesigned questionnire has been distributed to the respondents for collection , sampling, and analysis of data.

(C)POPULATION / UNIVERSE OF THE STUDY:

In this research, finite universe is considered because the population in this study is finite.

(D)SAMPLE SIZE:

The sample size of the respondents covered for the study is 50.

1.4. SCOPE OF THE STUDY.

This study will give an overall overview of the existing Bamboo industries and traders operational activities and it will also give us an idea as to why some of the Bamboo traders, industries and manufactures have close down thier business. This will help the government in taking suitable steps to improve the existing Bamboo units operational activities and also in development of more Bamboo processing units and industries in Assam and to unleash the huge potential of the Bamboo section.

1.5. LIMITATIONS OF STUDY

The circumstances under under which this study was conducted and the limitations were felt to be signifance are summrized as bellow:

a) Primary date and other necessary information where collected within a short period of time and hence would not cover wider area.

b) Bamboo traders and manufactures did not keep proper records of their business.

c) Bamboo traders, processors had records of transaction in prices many cases but they were reluctant to disclose their detaiils due to apprehension of taxation and other impositions. They were reluctant to disclose the actual figures on purchase price, sales price, production, monthly sale, income, profit etc.

d) The study covered relatively small sample sizes as time was a major constraint. However, the data were analyzed quite exhyaustively but a larger sample size would have perhaps strengthened the findings.

e) The findings of the study wre based on the data of some selected area of Karbi Anglong. Therefore, the study may not be representative of the whole of Karbi Anglong District.

CHAPTER: II

ANALYSIS

AND

INTERPRETATION

OF

DATA

CHAPTER: II

ANALYSIS AND INTERPRETATION OF DATA

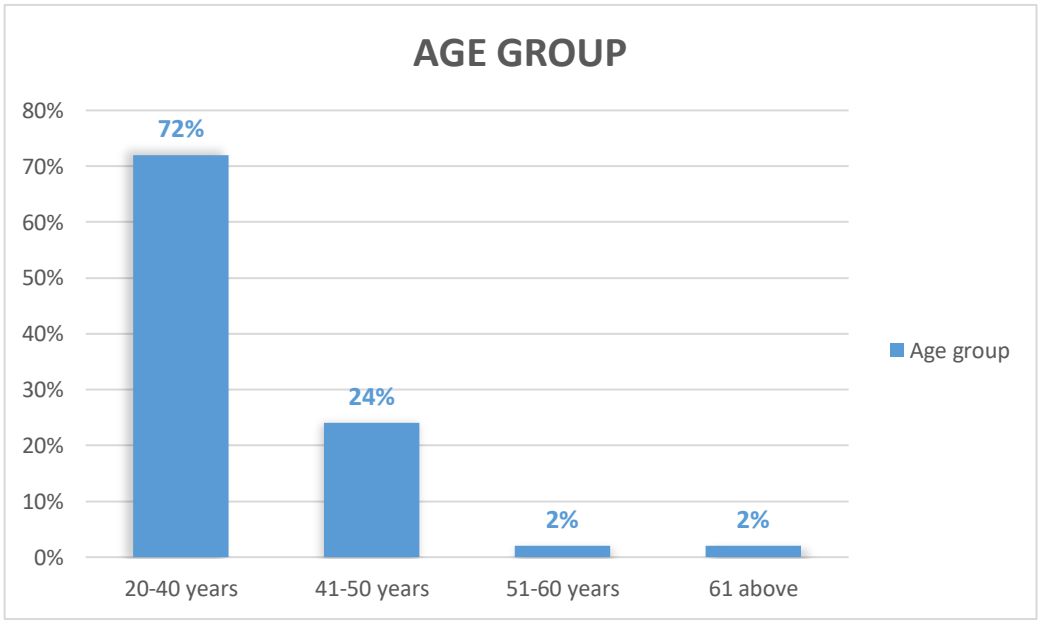
2.1. Age Group of the Respondents:-

Table no. 2.1

Sl. No.	Age	No. of respondents	percentage
1	20-40 years	36	72%
2	41-50 years	12	24%
3	51-60 years	1	2%
4	61 and above	1	2%
	TOTAL	50	100%

Source- Field study

Figure no. 2.1



Source- Table No. 2.1

INTERPRETATION

The above diagram is showing that 72% of the sample falls under the age group of 20-40 years, 24% of the sample falls under the age group of 41-50 years, 2% of the sample falls under the age group of 51-60 years, 2% of the sample falls under the age group of 60 and above years. Hence from the interpretation we now come to know that the majority of the consumer falls under the age group of 20-40 years.

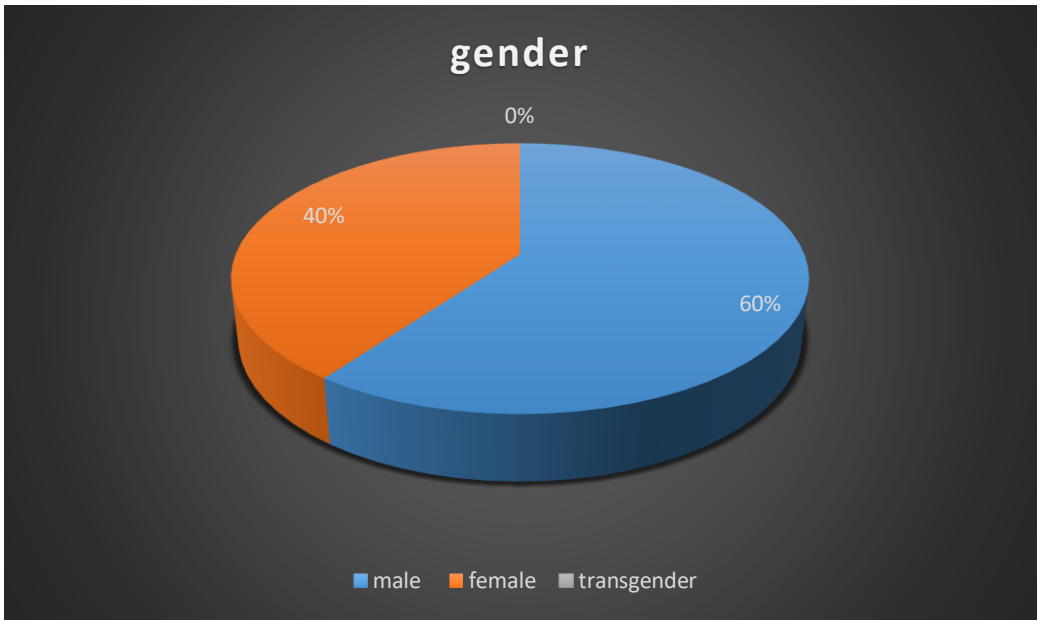
2.2 Gender Group of the Respondents:-

Table no. 2.2

Sl. No.	Gender	No. of respondents	percentage
1	Male	30	60%
2	Female	20	40%
3	Transgender	0	0%
	TOTAL	50	100%

Source- Field study

Figure no. 2.2



Source- Table No. 2.2

INTERPRETATION

The above diagram is showing that 60% of the consumer is male, 40% of the consumer are female, 0% of the consumer are transgender. Hence from the interpretation we now come to know that the majority of the consumer are male.

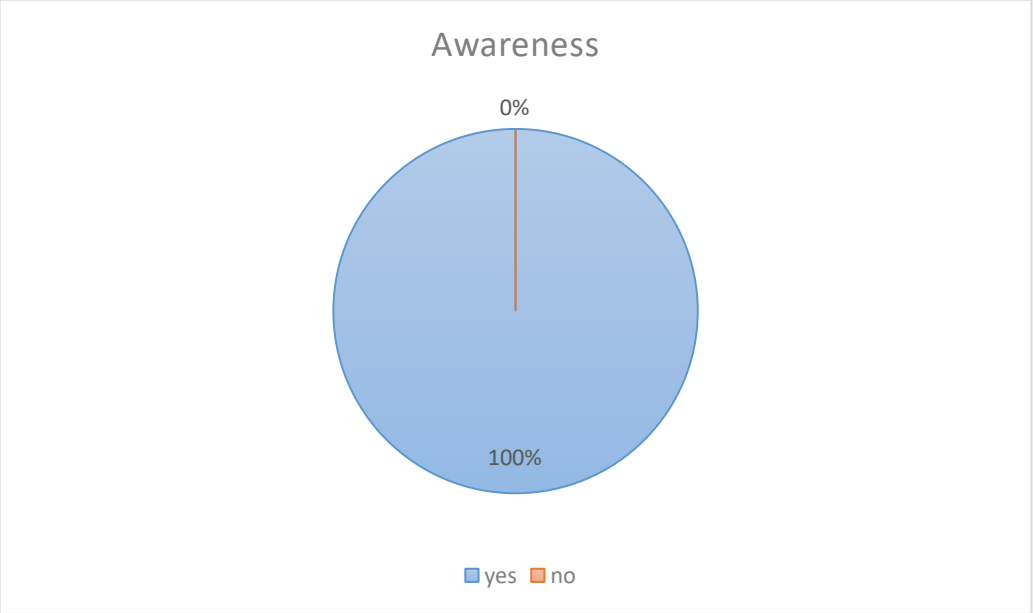
2.3 Table showing the aware of bamboo product.

Table no. 2.3

Sl. No.	Awareness	No. of respondents	percentage
1	Yes	50	100%
2	No	0	0%
	TOTAL	50	100%

Source- Field study

Figure no. 2.3



Source- Table No. 2.3

INTERPRETATION

The above diagram is showing that 100% of the consumer is aware of bamboo products. , 0% of the consumer is not aware of the bamboo products. Hence from the interpretation we now come to know that the majority of the consumer is aware of bamboo products.

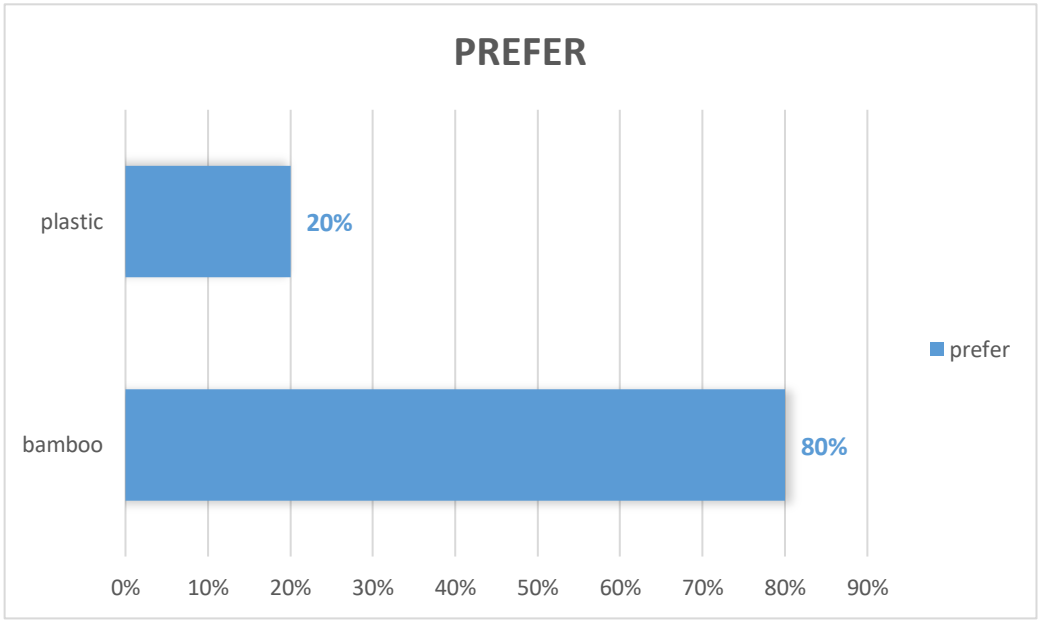
2.4 Table showing the preference of Bamboo product or Plastic made product of the respondents.

Table no. 2.4

Sl. No.	Bamboo product / Plastic product	No. of respondents	percentage
1	Bamboo	40	80%
2	Plastic	10	20%
	TOTAL	50	100%

Source- Field study

Figure no. 2.4



Source- Table No. 2.4

INTERPRETATION

The above diagram is showing that 80% of the consumer prefer bamboo products, 20% of the consumer prefer plastic product. Hence from the interpretation we now come to know that the majority of the consumer prefer bamboo products.

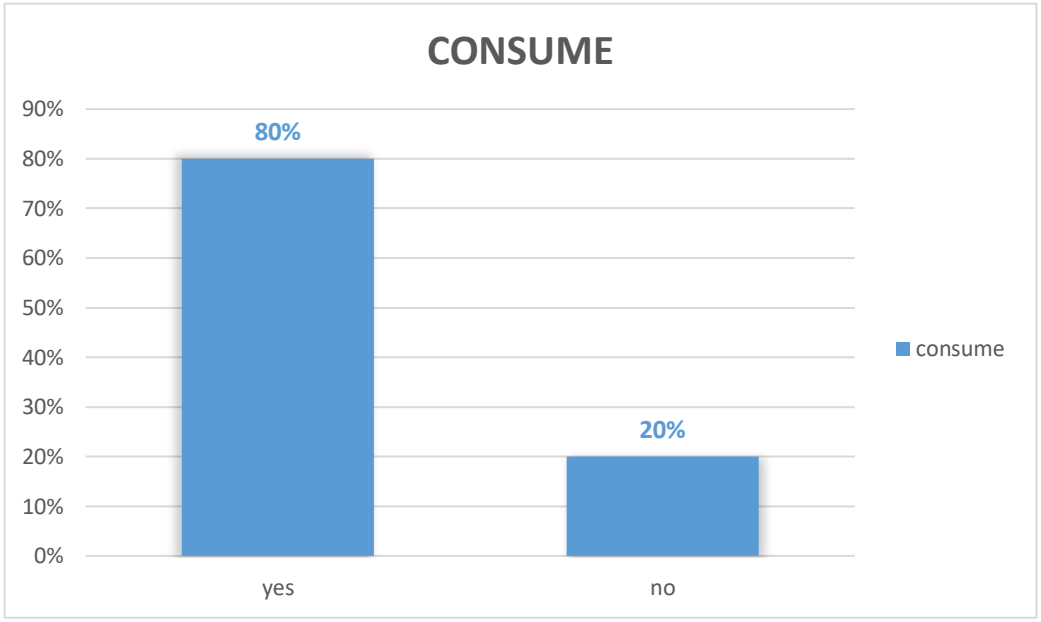
2.5 Table showing the consume bamboo shoots of the respondents.

Table no. 2.5

Sl. No.	Consume	No. of respondents	percentage
1	Yes	40	80%
2	No	10	20%
	TOTAL	50	100%

Source- Field study

Figure no. 2.5



Source- Table No. 2.5

INTERPRETATION

The above diagram is showing that 80% of the consumer is consume bamboo shoot, 20% of the consumer do not consume bamboo shoot. Hence from the interpretation we now come to know that the majority of the consumer consume bamboo shoot.

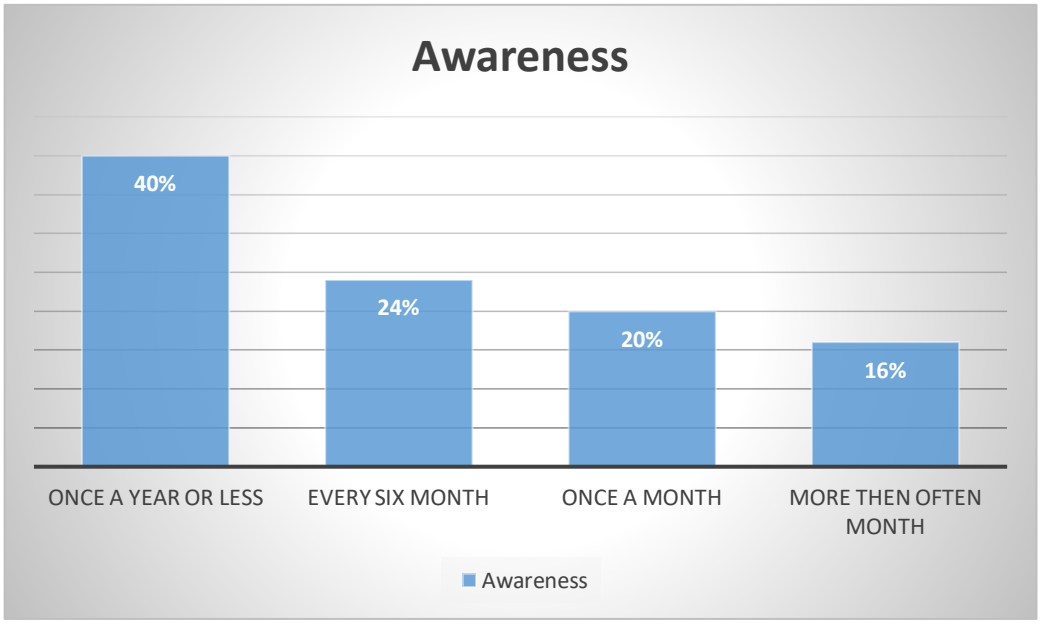
2.6 Table showing the frequently purchase of Bamboo products of the respondents.

Table no. 2.6

Sl. No.	Purchase	No. of respondents	percentage
1	Once a year or less	20	40%
2	Every six month	12	24%
3	Once a month	8	20%
4	More than often month	10	16%
	TOTAL	50	100%

Source- Field study

Figure no. 2.6



Source- Table No.2.6

INTERPRETATION

The above diagram is showing that 40% of the consumer purchase bamboo products once a year or less, 24% of the consumer purchase bamboo products every six month. 20% of the consumer purchase bamboo products once a month. 16% of the consumer purchase bamboo products more than often month. Hence from the interpretation we now come to know that the majority of the consumer purchase once a year or less.

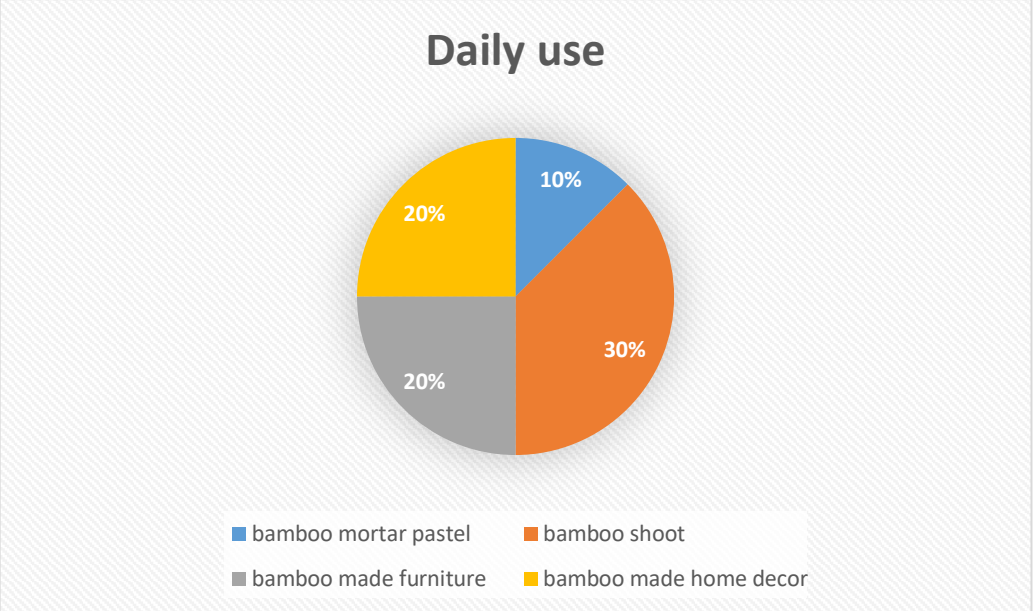
2.7 Table showing the Bamboo made items used in daily life of the respondents.

Table no. 2.7

Sl. No.	Daily use	No. of respondents	percentage
1	Bamboo Mortar Pastel	5	10%
2	Bamboo Shoot	15	30%
3	Bamboo made furniture	10	20%
4	Bamboo made home decor	10	20%
5	Bamboo accessories	10	20%
	TOTAL	50	100%

Source- Field study

Figure no. 2.7



Source- Table No. 2.7

INTERPRETATION

The above diagram is showing that 10% of the consumer uses bamboo mortar pastel, 30% of the consumer uses bamboo shoot, 20% of the consumer use bamboo made furniture. 20% of the consumer use bamboo made home decor. Hence from the interpretation we now come to know that the majority of the consumer uses bamboo shoots.

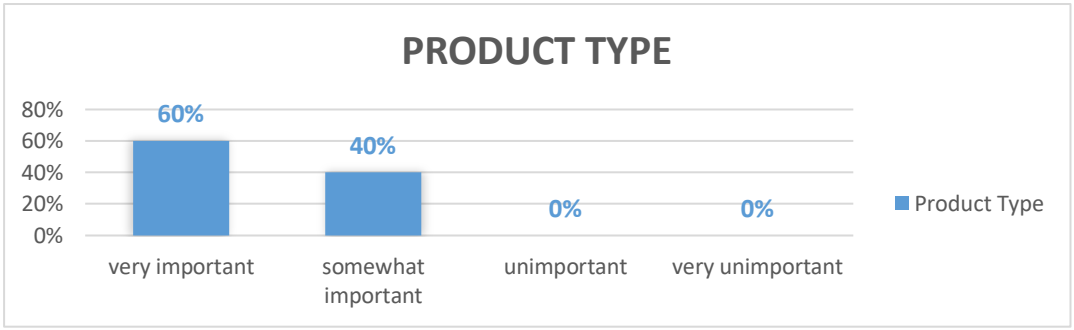
2.8 Table showing the factor of respondents keep in mind while purchasing Bamboo products.

Table no. 2.8

Sl. No.	Factors		No. of respondents	percentage
1	Product Type	Very important Somewhat important Unimportant Very unimportant	30 20 0 0	60% 40% 0% 0%
2	Product Quality	Very important Somewhat important Unimportant Very unimportant	45 5 0 0	90% 10% 0% 0%
3	Product Display	Very important Somewhat important Unimportant Very unimportant	15 10 20 5	30% 20% 40% 10%
4	Product Size	Very important Somewhat important Unimportant Very unimportant	12 10 18 10	24% 20% 36% 20%

Source- Field study

Figure no. 2.8.a

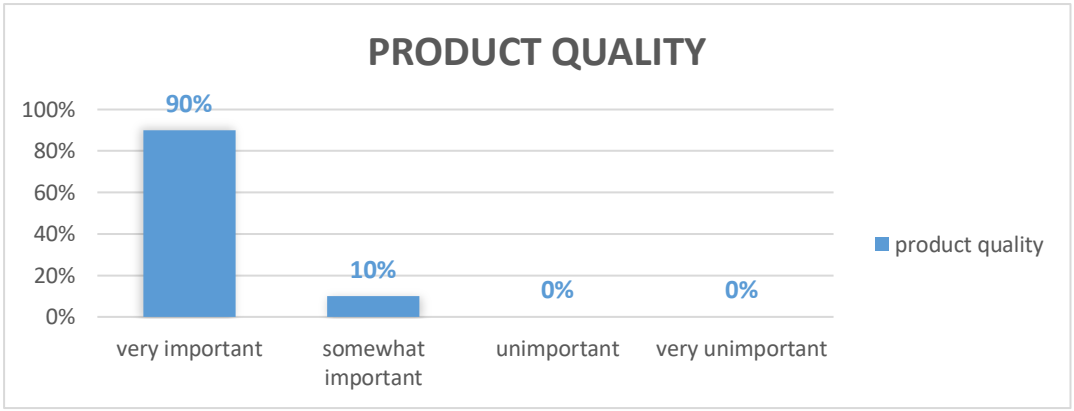


Source- Table No. 2.8

INTERPRETATION

The above diagram is showing that 60% of the consumer thinks product type is very important, 40% of the consumer thinks product type is somewhat important, 0% of the consumer thinks product type is unimportant. 0% of the consumer thinks product type is very unimportant. Hence from the interpretation we now come to know that the majority of the consumer thinks product type is very important.

Figure: 2.8.b

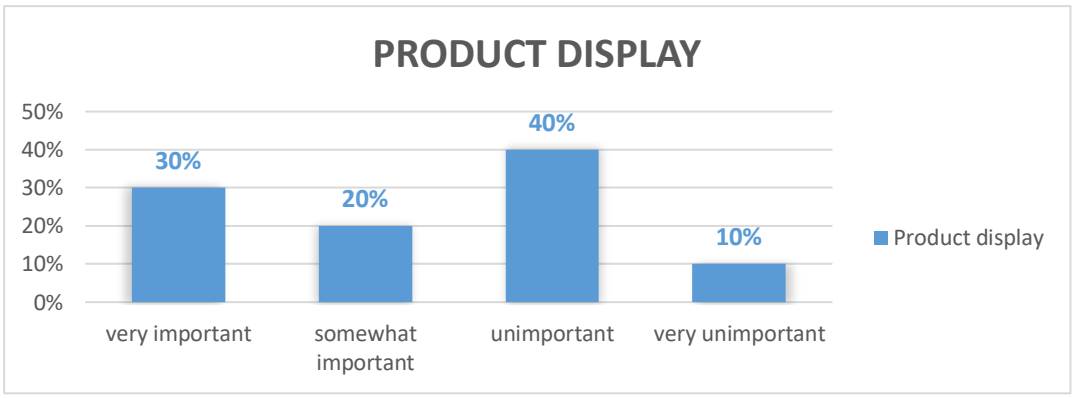


Source- 2.8

INTERPRETATION

The above diagram is showing that 90% of the consumer thinks product quality is very important, 10% of the consumer thinks product quality is somewhat important, 0% of the consumer thinks product quality is unimportant. 0% of the consumer thinks product quality is very unimportant. Hence from the interpretation we now come to know that the majority of the consumer thinks product quality is very important.

Figure: 2.8.c

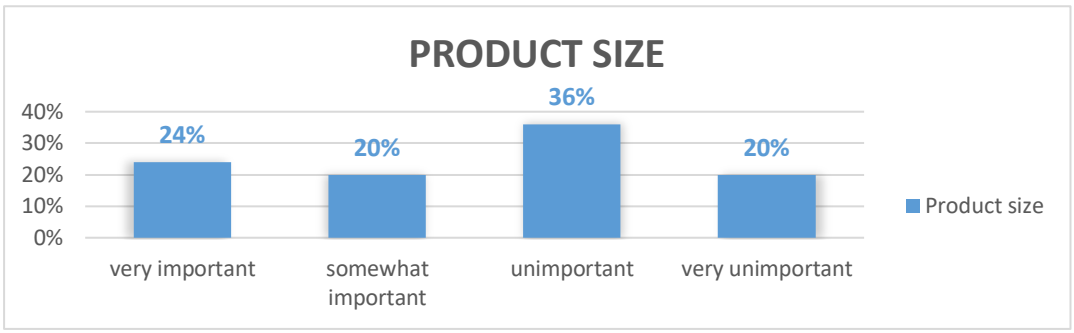


Source- Table No. 2.8

INTERPRETATION

The above diagram is showing that 30% of the consumer thinks product display is very important, 20% of the consumer thinks product display is somewhat important, 40% of the consumer thinks product display is unimportant. 10% of the consumer thinks product display is very unimportant. Hence from the interpretation we now come to know that the majority of the consumer thinks product display is unimportant.

Figure: 2.8.d



Source- Table No. 2.8

INTERPRETATION

The above diagram is showing that 24% of the consumer thinks product size is very important, 20% of the consumer thinks product size is somewhat important, 36% of the consumer thinks product size is unimportant. 20% of the consumer thinks product size is very unimportant. Hence from the interpretation we now come to know that the majority of the consumer thinks product size is unimportant.

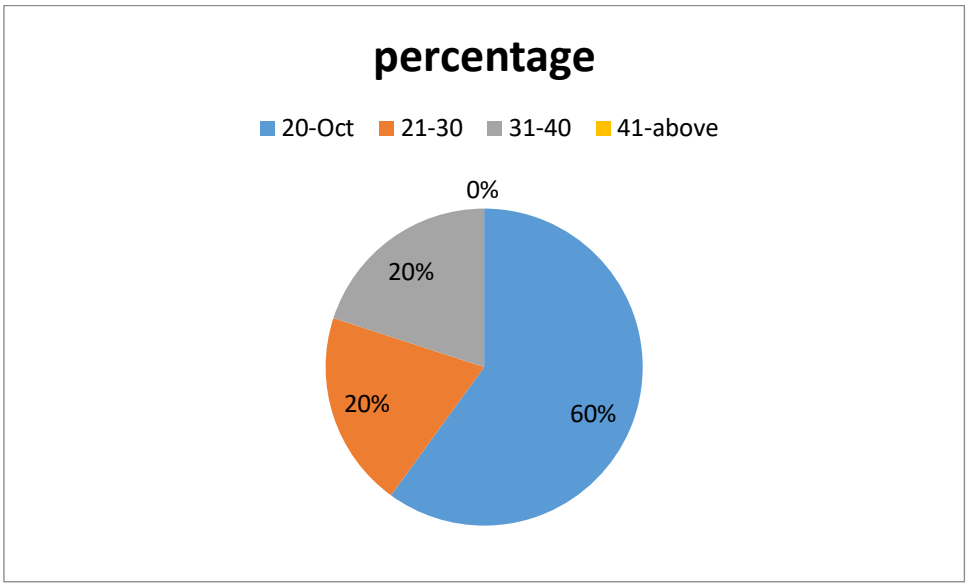
2.9 Table showing the types of Bamboo are there in respondents area?

Table no. 2.9

Sl. No.	Types	No. of respondents	percentage
1	10-20	30	60%
2	21-30	10	20%
3	31-40	10	20%
4	41-above	0	0%
	TOTAL	50	100%

Source- Field study

Figure no. 2.9



Source- Table No. 2.9

INTERPRETATION

The above diagram is showing that 60% of the consumer says they have 10 – 20 types of bamboo in their area, 20% of the consumer says they have 21 – 30 types of bamboo in their area. 20% of the consumer says they have 31 – 40 types of bamboo in their area. 0% of the consumer says they have 41 and above types of bamboo in their area. Hence from the interpretation we now come to know that the majority of the consumer knows 10 – 20 types of bamboo.

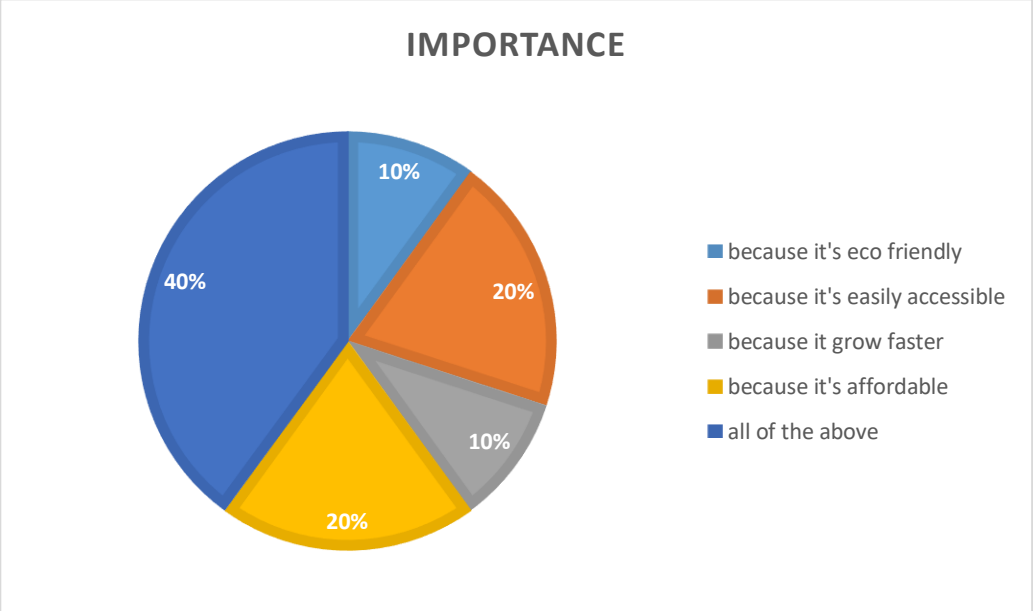
2.10 Table showing the importants of Bamboo for respondents daily life.

Table no. 2.10

Sl. No.	Importance	No. of respondents	percentage
1	Because it's eco friendly	5	10%
2	Because it's easily accessible	10	20%
3	Because it grows faster	5	10%
4	Because it's affordable	10	20%
5	All of the above	20	40%
	TOTAL	50	100%

Source- Field study

Figure no. 2.10



Source- Table no. 2.10

INTERPRETATION

The above diagram is showing that 10% of the consumer thinks bamboo is important because its eco-friendly, 20% of the consumer thinks bamboo is important because it's easily accessible. 10% of the consumer thinks bamboo is important because it grow faster. 20% of the consumer thinks that bamboo is important because it is affordable, 40% of the consumer thinks that bamboo is important because of all the other reason. Hence from the interpretation we now come to know that the majority of the consumer thinks bamboo is important because it is eco-friendly, it is easily accessible, it grow faster, it's affordable .

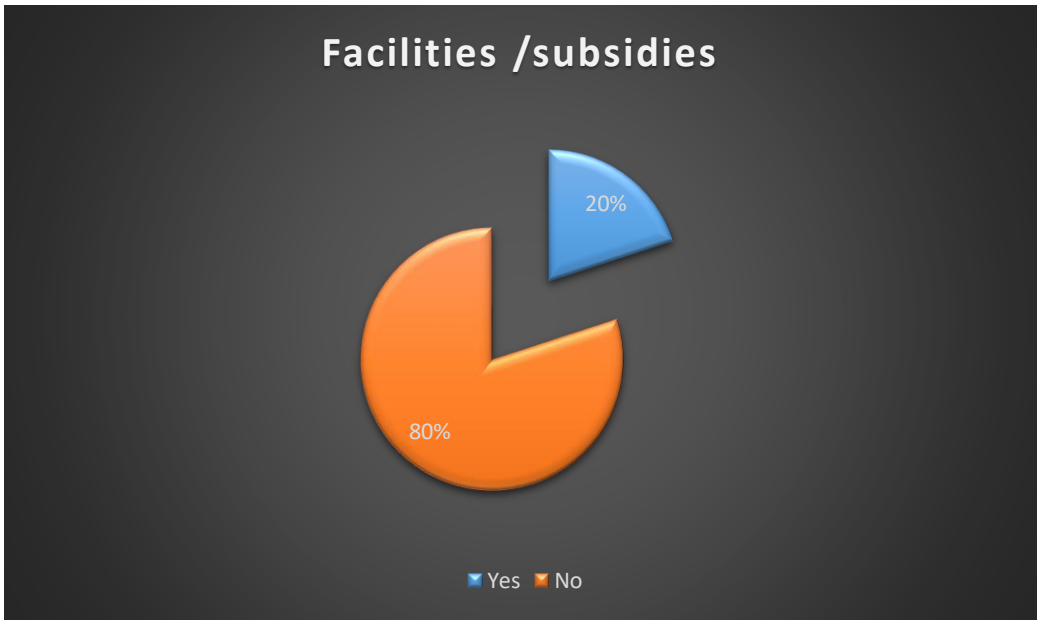
2.11 Table showing the government provide with any facilities or subsidies for respondents.

Table no. 2.11

Sl. No.	Facilities / Subsidies	No. of respondents	percentage
1	Yes	10	20%
2	No	40	80%
	TOTAL	50	100%

Source- Field study

Figure no. 2.11



Source- Table No. 2.11

INTERPRETATION

The above diagram is showing that 80% of the consumer does not get government facilities or subsidies, 20% of the consumer gets government facilities and subsidies. Hence from the interpretation we now come to know that the majority of the consumer does not get government facilities and subsidies.

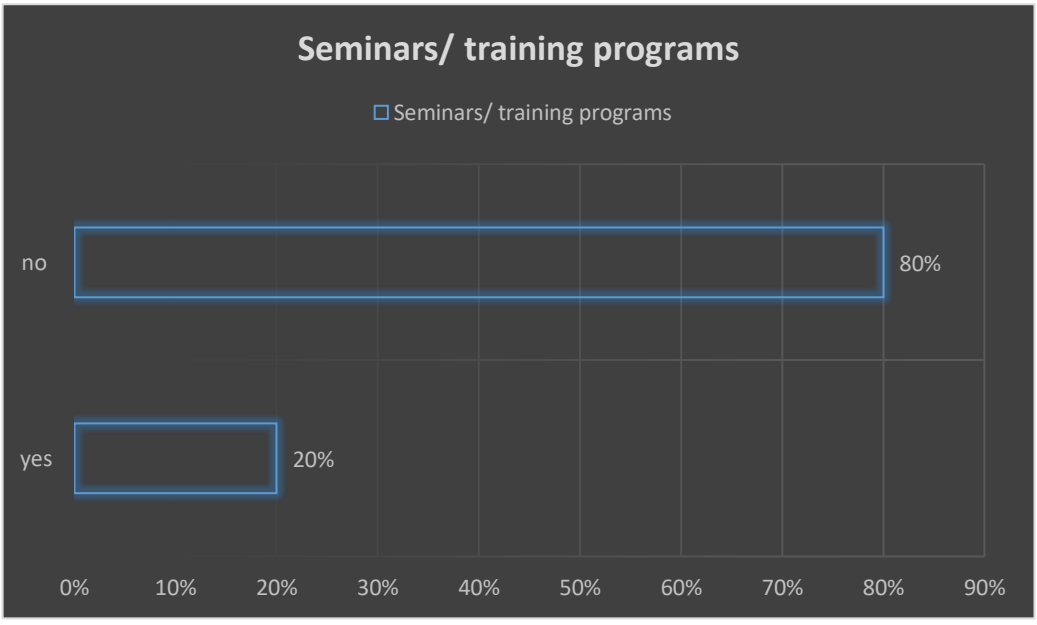
2.12 Table Showing the government conduct any Seminars or Training programs for development of Bamboo for respondents.

Table no. 2.12

Sl. No.	Seminars / Training programs	No. of respondents	percentage
1	Yes	10	20%
2	No	40	80%
	TOTAL	50	100%

Source- Field study

Figure no. 2.12



Source- Table No. 2.12

INTERPRETATION

The above diagram is showing that 80% of the consumer say government did not conduct any seminars and training programs, 20% of the consumer says government provide seminars and training programs. Hence from the interpretation we now come to know that the majority of the consumer says government do not provide seminar and training programs for the development of bamboo.

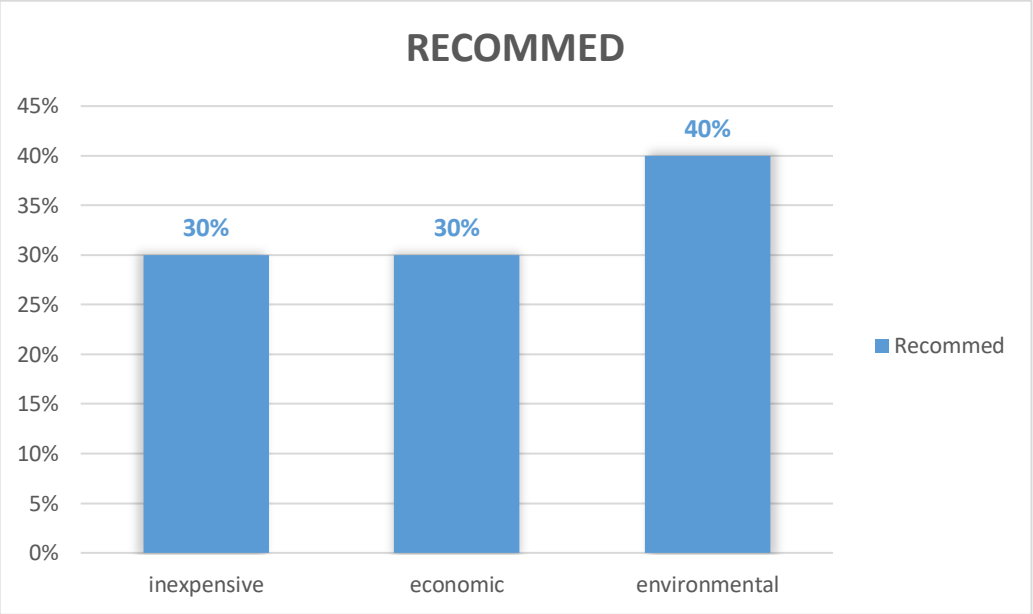
2.13 Table showing the respondents recommend the uses of Bamboo products.

Table no. 2.13

Sl. No.	Recommend	No. of respondents	percentage
1	Inexpensive	15	30%
2	Economic	15	30%
3	Environmental friendly	20	40%
	TOTAL	50	100%

Source- Field study

Figure no. 2.13



Source- Table No. 2.13

INTERPRETATION

The above diagram is showing that 30% of the consumer will recommend on the basis of inexpensive item, 30% of the consumer will recommend on the basis of economic. 40% of the consumer will recommend on the basis of environmental. Hence from the interpretation we now come to know that the majority of the consumer will recommend on the basis of environmental.

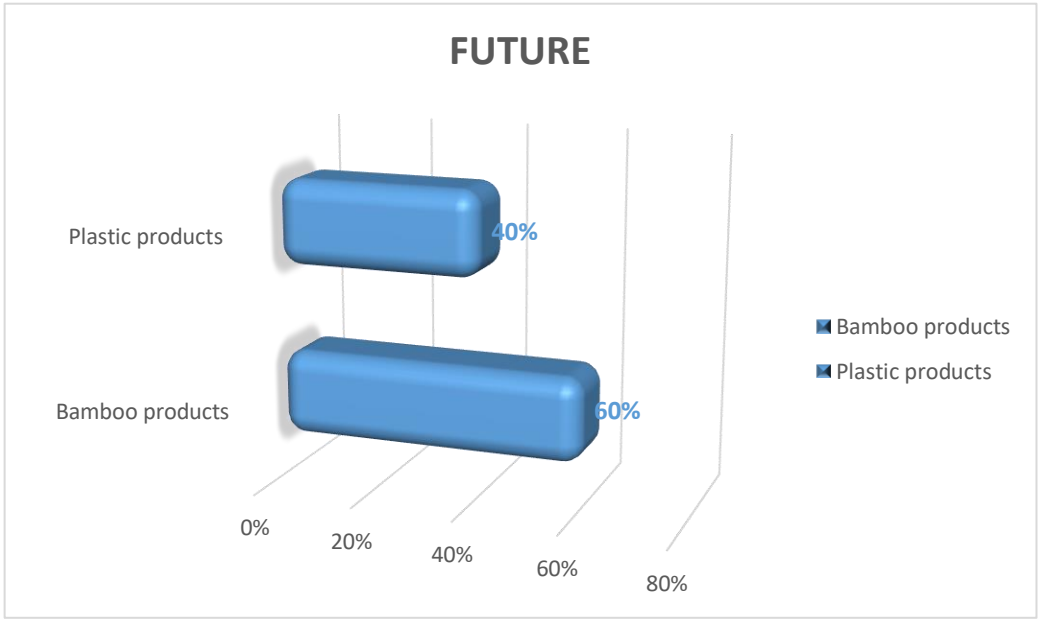
2.14 Table showing the respondents think who has future.

Table no. 2.14

Sl. No.	Future	No. of respondents	percentage
1	Bamboo products	30	60%
2	Plastic products	20	40%
	TOTAL	50	100%

Source- Field study

Figure no. 2.14



Source- Table No. 2.14

INTERPRETATION

The above diagram is showing that 60% of the consumer thinks bamboo products has the future, 40% of the consumer thinks plastic has the future. Hence from the interpretation we now come to know that the majority of the consumer thinks bamboo products has the future.

Chapter: III

FINDINGS, SUGGESTIONS and CONCLUSION

3.1 Findings:

Following are the challenges faced by bamboo traders, manufacturers etc.

3.1.1 Challenges in the Production System

Currently we observe that the majority of the Production of Bamboo in Assam occurs in the unorganized sector; further, we observe that existing Bamboo plantations fail to achieve optimal yields. The major challenges identified in the Production Systems are:

A. **Poor Yields:** The average yield for Bamboo grown in India is 2-3 MT44 per hectare. This low yield explains why India, despite having the largest absolute area under Bamboo, has the second largest Bamboo resource. In China, well managed plantations can give up to 50 T/Ha. In India, the maximal yields obtained from plantations are still in the range of approximately 10-15 T/Ha.
B. **Lack of attention to Variety Management and Biodiversity Conservation:** In situ and ex situ conservation, identification of genotypes and gene bank, application of biotechnology and genetic engineering of Bamboo are accorded minimal importance (Planning Commission, 2011).
C. Volatility in Market prices: It is observed that prices are highly volatile, fluctuating quite frequently. These fluctuations contribute further to the lack of information.
D. **Low Interest in Commercial Forestry:** Outmoded policy frameworks, Transit Pass Regimes and Price uncertainties and fluctuations have led to strong disincentives for private farming and cultivation of Bamboo Homesteads on an industrial and commercial scale, although as previously noted, this scenario is changing.
E. **Lack of Market Information:** Bamboo farmers are usually unaware of prevailing market prices and rely upon the traders to determine their prices for them. This is in contrast to farmers for many other crops including rice and wheat, whose prices are available continuously and are continually updated. Systems leveraged in many parts of India for information regarding crop prices through SMS services are not available for the Bamboo sector. The government run portal Agmarknet.nic.in, which updates prices of commodities daily across over 1000 markets, curiously fails to analyse Bamboo prices over a wide range of days; data on Bamboo prices is sporadic at best, and the dissemination is minimal.
F. **Insufficient Baseline Data:** It is observed that the lack of data regarding resources and usage patterns for bamboo is usually unavailable, and if available, outdated. This leads to difficulties in adopting concrete plans for Management and Planning for Resource Allocation. In particular, data for the usage pattern of Bamboo is deficient; this critical parameter being unstudied has led to improper resource allocation practices.

3.2: Suggestions:

Based on the challenges faced by bamboo traders and manufactures folling suggestions are available.

Suggestions for Prouduction system:

A) **Lack of Biodiversity Management:**
Government funding of bio technological projects, establishment of Bamboo research Institutions under existing institution of independently, to develop better HYV Bamboo strains, as well as conserve existing Genetic material in Bamboo industries.

B) Market price volatity: Establishment of Markets in Bamboo Products which feature contract farming as an attractive hedging against price volatility. Promotion of Farmer producer Organisations as an alternative model for industrial procurement of Bamboo.

C) low Private sector Interest in Commercial forestry :

1. Single-time and Single-Window Registration of Commercial Forestry Institutions desirous of growing Bamboo on Private Lands. Complete liberty of cultivation and harvesting to registered producers.
2. Complete abolition of transit Pass requirements for Bamboo grown on Private Lands registered as above.
3. Support to Cooperative Farming of Bamboo on privately owned lands through easier credit terms for purchase of saplings, feartilisers etc. From agencies like NABARD.

D) **Absence of Market Inforamtion:** Provision of information on Bamboo prices to cultivatiors through services such as agmarknet. Nic. in and SMS.

E) **Insufficient baseline data :** Regular Surveying and data Collection on Bamboo usage patterns, amboo resources, species, and area covered etc. Surveys should be conducted at least biannually.

Suggestions for Transformation system

A. **Poor Quality of Bamboo supplied Low quantity of bamboo supplied** : These are the result of the above issues; when the above are resolved, these issues will disappear due to increased Private Plantation utilising scentific management practives and establishment of linkages between manufacturers and plantations.

B. **Lack of Trained Labour :** Establishment of dedicated Bamboo Technology Instituttes, to teach methods of primary, secondary processing as well as mechanical processing to generate innovation in design and production processes.

Suggestions for Consumption system

I. **Poor Quality Perception :** Institution of Quality standards in product quality, production process standard, etc.

II. **Poor Retail Involvement :**

a) Marketing through upmarket outlets in partnership with notable Indian premium handicraft showrooms, including FabIndia.

b) Privatisation of Retail Chains which promote Bamboo products, through partnerships of government Agencies responsible for Bamboo promotion with private showroom space owners.

Conclusion:

The different species of bamboo are abundantly available throughout the State. It requires little or no investment and can be persuaded by anybody and everybody of a household as a subsidiary occupation. As such, the industry has considered scope for development and various new products suited to modern tastes can be manufactured out of bamboo Market intelligence is required to be developed so that products can be made to cater to the need of the consumer market. State Governments Emporia are also trying to popularize a few artistic and decorative bamboo products outside the State. To organize the unorganized and scattered handicraft artisans, the Government of Assam had launched a scheme for registration of handicraft artisans and handicrafts units.

Future efforts at upgrading the Assam Bamboo sector must include a comprehensive end-to-end set of reforms and proactive action to be taken at each level in the value chain. It must be ensured that each major challenge in the Production to Consumption System must be tackled; the required actions in each case would be a mix of policy reform, legislative amendments and affirmative action by the Government. The Policy Recommendations listed within this report were compiled after careful discussion with a limited number of stakeholders before they may be implemented. The researcher is of the optimistic opinion that a stronger level of political will and the active involvement of NGOs and similar Civil Society Organisations can take the Bamboo sector to new heights.

ANNEXURE:

Bibliography and

QUESTIONNIRE

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QUESTIONNAIRE

Dear Respondent,

I, **ARUNJYOTI DEBNATH** a student of Master of Commerce 3rd Semester of **KC Das Commerce College** under Gauhati University. As per our course, I am doing a project on **"A CASE STUDY ON UTILITY OF BAMBOO PRODUCT IN ASSAM WITH SPECIAL REFERENCE KARBI ANGLONG DISTRICT"**. For this purpose I request you to please fill up questionnaire given below. I assure you that the information given by you will be our academic purpose only.

Thanks you.
ARUNJYOTI DEBNATH
M. Com 3rd Semester
KC Das Commerce College

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1. Name: ……
2. Age :
   (a) 20-40 years ☐ (b) 41-50 years ☐
   (c) 51-60 years ☐ (d) 61- above ☐
3. Gender :
   (a) Male ☐ (b) Female ☐ (c) Transgender ☐
4. Are you aware of Bamboo Product?
   (a) Yes ☐ (b) No ☐
5. What would you prefer Bamboo product or Plastic made product?
   (a) Bamboo ☐ (b) Plastic ☐
6. Do you consume Bamboo shoots?
   (a) Yes ☐ (b) No ☐
7. How frequently do you purchase Bamboo product?
   (a) Once a year or less ☐ (b) Every six month ☐
   (c) Once a month ☐ (d) More than often month ☐
8. What is the Bamboo made items you used in your daily life?
   (a) Bamboo Mortar Pastel ☐ (b) Bamboo Shoot ☐
   (c) Bamboo made furniture ☐ (d) Bamboo made home décor ☐
   (e) Bamboo accessories ☐

9. What factor do you keep in mind while purchasing Bamboo products?

	Very Important	Some What Important	Unimportant	Very Unimportant
Product Type				
Product Quality				
Product Display				
Product Size				

10. How many types of Bamboo are there in your area?

(a) 10-20 ☐ (b) 21-30 ☐

(c) 31-40 ☐ (d) 41-above ☐

11. Why do you think Bamboo is important for us in your daily life?

(a) Because it's eco friendly ☐ (b) Because it's easily accessible ☐

(c) Because it grows faster ☐ (d) Because it's affordable ☐

(e) All of the above ☐

12. Does the government provide with any facilities or subsidies?

(a) Yes ☐ (b) No ☐

13. Did the government conduct any seminars or Training programs for development of Bamboo?

(a) Yes ☐ (b) No ☐

14. How much would you like to recommended the uses of Bamboo products?

(a) Inexpensive ☐ (b) Economic ☐

(c) Environmental friendly ☐

15. What do you think who has the future?

(a) Bamboo products ☐ (b) Plastic products ☐

16. Give suggestion, if any

……

……

Signature of the Respondent