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The traditional jute industry in the Upper East region of Ghana: Processes, products and challenges

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Abstract

Jute is very important natural fibre whose production, usage and global consumption if only second to cotton. The fibre which is obtained from the corchorus of the hibiscus family is used for the production of several products globally of which ropes and cordages are chief among them. The study sort to investigate the cultivation and usage of the jute fibre in the Upper East region of Ghana. Use was made of questionnaires and interviews in gathering the data for the ethnographic study and the areas visited for the investigation includes Sumbrungu, Bolgatanga, Yikene and Kulbia in the Bolgatanga Metropolitan area as well as Navrongo, Pungu, Nayania and Vunania in the Kassena-Nankana Municipal area. In the Upper East region, the fibre is used for products such as ropes, mats for burial, door mats, and bags among others. It was revealed that the sale of products made from jute is facing a stiff completion from other products made from synthetic materials such as nylon. The study therefore recommends training of manufacturers to know how to integrate jute with other synthetic fibres to improve on the performance as well as the aesthetic appeal of the products.

Keywords: Jute, Urena lobata, Gurune, Upper East, Kassena-Nankana, Bolgatanga

1. Introduction.

A fibre, which is a textile raw material characterised by high length to width ratio, flexibility and fineness has been obtained from several sources throughout history. These sources include plants, animals, minerals and some synthetic chemicals (Sinclair, 2015; Wynne, 1997). Plants have been an important source of textile fibres throughout history and cotton has been the most important fibre in terms of production capacity and usage. Jute which is a bast fibre from the corchorus capsularis or corchorus olitorius which belongs to the hibiscus or mallow family is second to cotton in terms of production, usage and global consumption (Encyclopaedia Britanica, 2016; Food and Agriculture Organisation, 2016; Teresinha, 2016). The fibre which is also called the 'golden fibre' because of its golden brown colour is believed to be the fibre which was used for the sackcloth used during the biblical times. India, Bangladesh accounts for about 95% the world production. (Kadolph, 1998).

1.1 Upper East Region of Ghana

The Upper Region was carved out of the Northern region on 1st July, 1960. Later in 1983, the Upper Region was divided into two: Upper East and Upper West regions. The Upper East region is between longitude 00 and 10 west and latitudes 100 30"N and 110N in the north-east corner of Ghana. The region has a long spell of dry season from November to Mid-February and a rainy season from May/June to September/October. (ModernGhana, 2016). The region has 13 administrative districts which are Builsa North and South, Kassena-Nankana West, Kassena-Nankana Municipal, Bongo, Bolgatanga, Bawku West and Bawku Municipal, Binduri, Garu-Tempane, Nabdam, Pusiga and Talensi (Ministry of Local Government, 2016).

1.2 Ghana jute

Owing to the success of the cocoa industry, the first president of the Republic of Ghana, Osagyefo Dr. Kwame Nkrumah set up a jute manufacturing industry in Kumasi called GIHOC in the late 1960s which was to provide jute sacks for the bagging of the cocoa beans (Myjoyonline.com, 2014; Wireko, 2011). There was the need to grow the jute locally to serve as the raw material for the industry and as a result, the Ministry of Agriculture started trial plantations in several areas of the country and the specialists recommended the northern Ghana as the most suitable place for the cultivation of the fibre. This led Tom Nasse, a German jute specialist to visit some parts of Northern Ghana including Tamale to introduce the Indian jute called *Urena lobata* to the region (Buser, 2010). The jute industry led to the growing of the crop on a massive scale in the northern region of Ghana. Unfortunately, the GIHOC jute manufacturing industry collapsed in the early 1990s (Myjoyonline.com, 2014). Even though the factory's operations have halted, the crop is still grown in the country, especially the three Northern regions mainly for food but other products are manufactured from the stalks in cottage industries which

are situated in the houses of manufacturers (Levy & Wong, 2010). Jute leaves contain high amounts of vitamins, minerals and other micronutrients which makes it a healthy food choice. It is a good source of calcium, vitamin A, vitamin C, vitamin K, magnesium and potassium (Graphiq Inc, 2016). The plant yields 3-7% fibre after retting and the colour is creamy white or pale yellow. The bark of the plant is stripped and plaited for use in binding loads in Ghana, however, the fibres are weak when wet than dry and as such are not conducive for wet conditions (Brink & Achigan-Dako, 2012). Due to its nutritional values and other uses the cultivation of the *Urena lobata* (berese in Gurune) is common throughout the region right from the onset of the rains (May-June) to the end of the year (November – December). However, the use of the fibres for the production of items is not as visible as the cultivation. The study therefore was to:

- investigate the production processes of the jute fibres in the region
- identify the kinds of products that are made from them in the Upper East region of Ghana.
- identify the challenges that face the industry

2. Methodology

This is an ethnographic study which was meant to investigate how the people of the Upper East region grow and use the jute as a textile fibre. Two metropolitan areas were purposefully selected for the study due to their closeness of the growing communities within the metropolis and also because these two metropolitan areas have bigger market centres. Table 1 gives a graphical representation of the areas for the study. According to (Given, 2008; Leedy & Ormrod, 2005), in an ethnographic study, the researcher studies a group or culture in their natural settings. The researchers adopted the participant observation approach of ethnographic study to gather data. Given recommends that for the researcher to use a participant observation as an approach to gathering data, the researcher(s) ideally should live and work in the community for at least 6 months. Due to this critical requirement, the researchers lived in the community for at least three years to be able to observe the sowing of the crop, harvesting and processing of the fibres as well as observe how the fibres are put to use in the communities in the course of the year. Data was gathered from households in areas where the crop is grown, from the Navrongo, Bolgatanga and Sumbrungu markets and also from the craft and art centre in Bolgatanga

For the researcher to gather accurate data on the local jute industry in the research area that would be meaningful to answering the set research questions, and also to draw incisive conclusions, the researchers employed both questionnaires and interviews as instruments for gathering the primary data. According to Lokesh (1977) as quoted in Owusu-Afriyie (2008), questionnaire is a device which consists of series of questions given to an individual with the aim of obtaining data with regards to certain problems in an investigation. The questionnaire was a mixture of open-ended questions which required respondents to provide responses and fixed-response questions with 'Yes' and 'No' answers. Interview allows exchange of ideas and information since it is a two-way method. It is a unique way of gathering data since follow-up questions could be asked for further clarification and also slangs and metaphors could be used to enrich the data gathered (Given, 2008). For this reason, interview was an integral part of the data gathering process and it enabled the researchers obtain responses which would have been difficult to obtain using the questionnaires alone. According to Leedy & Ormrod (2005), besides the use of the aforementioned instruments, the researcher should record data through the use of audio tapes, photographs or any other suitable means. Because of this, the researcher employed such tools that were necessary to capture the exact response of respondents.

Table 1. Communities for the study

District	Community
Bolgatanga Metropolitan area	Sumbrungu
	Kulbia
	Yikene
	Bolgatanga
Kassena-Nankana Municipal area	Nayania
	Vunania
	Pungu
	Navrongo

At the beginning of the rainy seasons, the researchers would go to the field to gather data on how the crops are sown in the study areas. The differences in the sizes of the plants across the study areas were recorded such as

the height of the plants and the circumference of the base of the plants and the averages were selected for each area during the harvest time. In the dry season after harvest, the retting and peeling processes were also critically observed.

3. Analysis

3.1 Jute cultivation

The interviews revealed that the jute plant has been in the Upper East region long before Osagyefo Dr. Kwame Nkrumah brought Tom Nasse into the country. A group of elderly women above 60 years who sew the burial mats indicated that their parents and grandparents were involved in the jute business during the Colonial era. It is therefore possible that there was an existing specie of the jute in the region before the visit of Tom Nasse in the 1960s.

The plant is cultivated annually during the rainy seasons. The sowing period is between April and June. The planting is done mostly at the backyard of houses or around dams which have been constructed for irrigation purposes. The seeds are mixed cropped with other crops used for food. These other crops include cultivated spinach (alefu), pepper, okra, millet, maize, guinea corn, beans, and groundnuts. The leaves of the jute are used for soups and stews and as a result the leaves are harvested when the plant reaches a height of about four (4) feet. This harvesting of leaves continue until the plant flowers. At this stage, the few leaves are left on the plant and the plant is allowed to grow tall until the harvesting season which is at the end of the rainy season (around November). The harvesting of the plant involves normally pulling the stem from the ground. Cutting of the stem is rarely done. Planting areas outside the cities yields bigger and taller stems than those near the cities, probably due to over-farming activities around the land in the city. The height of the jute plant outside the cities measured 6-9 feet high and the base of the stems measured 1-1.5 inches. Those in and around the cities of Bolgatanga, Navrongo and Sumbrungu measured 4-6 feet long and less than one (1) inch in diameter. The harvested stalks could be sold to people who manufacture jute fibres.

3.2 Fibre processing

The stems after harvesting are processed into fibres. The processing can be done in two ways: through retting; or fresh peeling. This gives two distinct fibres which are used for different end uses.

3.2.1 Retting

Dam retting is the commonest form of retting used in the region. The fresh or dried stems are tied in bundles and submerged in the dam. When the stalks are fresh, the retting takes 7 days, while dried stalks takes 9-11 days. Stones are sometimes put on the bundles or wooden pillars are hammered into the mud to prevent the bundle of stems from moving around. After the last day of retting, the fibres are then peeled from the bark of the stalk with the hand. After peeling, the fibres are washed in the dam, tied and dried. Retting produce stronger, finer and more flexible yarns than the fresh peeling method and the colour of the yarns are usually light grey, cream or off-white.

Figure 1: Peeling of retted stalks

Figure 2: Bundle of washed jute fibres

3.2.2 Fresh peeling

In this method, the freshly harvested stalks are split into halves and the bark is peeled off and tied into bundles. The bundle are then stored for later used. They could be kept for several months. Whenever the need arise for the bundle to be used, it is soaked in water for few minutes and then beaten with wooden mallet to loosen fibres. The colour of the fibres from this method ranges from dark grey to brown.

3.3 Analysis of the questionnaires

There were 120 respondents of which 65 were males and the remaining 75 been females. 50 of the respondents were from Bolgatanga Metropolis and 45 from the Kassena-Nankana Municipal area. As shown in the age distribution of respondents (figure 3), 38.8% of the respondents were aged between 26 and 40 years. When asked if their household grew the jute plant, all the 120 respondents responded in the affirmative, giving the indication that the plant is a very common one which is known by each and everyone within the areas of the study.

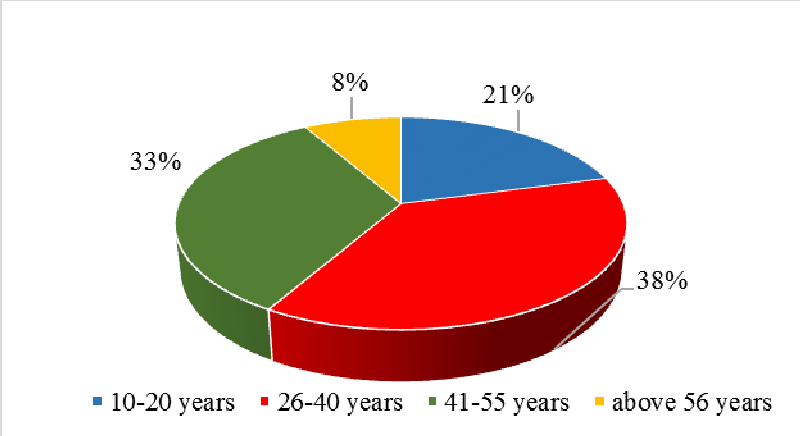

Figure 3: Age distribution of respondents

The plant is a one of the staple plants which is used for food in the three Northern regions of Ghana. Though it is used for food, it was necessary to find out the main reasons why people grow the crop. 95 respondents representing 82.6% indicated that they grow the plant for both food and fibre (figure 4). Only 17.4% said they grow it for food only. No one indicated that the plant was grown for fibres only. This is a clear signifies that the people eat the leaves of the plant and use the stem for assorted products. This also is an indication that the prime objective for growing the crop is the leaves which it produces so premium is not placed on the quantity of fibres that can be obtained from the stem, hence, fertilizers are not used to improve the yield of the fibres.

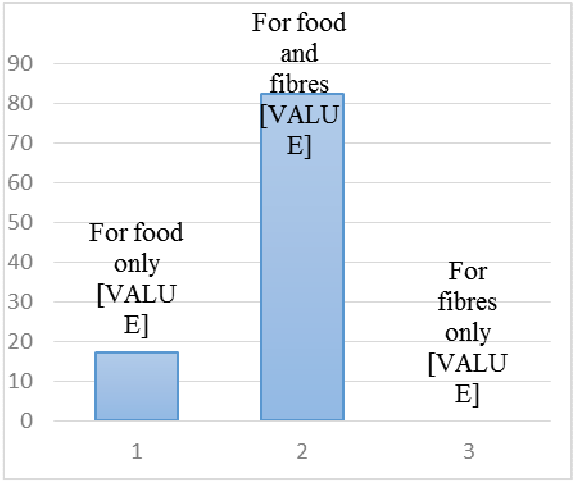

Figure 4: Reasons for growing the jute plant

When the respondents were asked if they knew people who used the jute fibre for products, 82% responded in the affirmative and when they were asked to indicate the ages of the people, 54.2% of the respondents indicated that the people who manufacture these things are between the ages of 41-55 years, while 33.3% chose above 56

years old. Five people representing 4.2% did not provide any response. This confirms some assertions during the interview that, the jute fibre business is predominantly practiced by older people. According to an interviewee in the Sumbrungu community, this is due to the fact that the old people do not have anything else to do so they engage themselves by producing articles from the jute fibre which is laborious process but requires patience. From the interviews, it was noticed that the younger generation below 40 years had little or no knowledge at all when it comes to producing the fibres as well as products from the fibres. This also indicates that if care is not taking, the local jute industry might fade out with the present old generation.

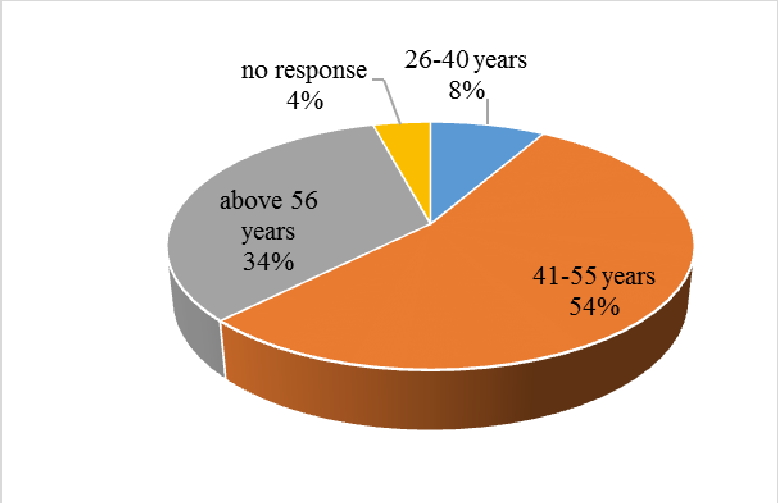

Figure 5: Age distribution of jute article manufacturers

3.4 Uses

The fibres have found use in the traditional setting of the people of the Upper East region of Ghana. When the respondents were asked to write the items they use the jute fibre to manufacture, the items listed were ropes, door mats, for roofing and for sewing grass to make mats

3.4.1 Roofing

The bundle of fibres produced from the fresh peeling method is used as a binding material for roofing of traditional mud houses and silos (figure 6): the traditional architecture make use of grass as the roofing material, the jute fibre therefore is used in tying together bundles of the grass so as to prevent them from falling off (Brink, M and Achigan-Dako, 2012). This binding secures the roofing firmly and can last for up to 3 years, after which the grass is replaced with new ones.

3.4.2 Ropes

One of the major use of jute globally is for ropes and cordages (Sinclair, 2015; Kadolph, 1998; Wynne, 1997). The production of ropes from the fibres are done manually. The big bundle of fibres are separated into smaller bundles of three or two and these are twisted together to form the ropes. These ropes are used for tying of animals during the planting season to prevent them from disturbing neighbours. Also bigger ropes made from the twisting are skilfully joined to form a net which is used in holding calabashes in the home.

Figure 6: Roof cover for silos

Figure 7: Jute rope for holding calabashes

The smaller ropes are used for manufacturing assorted articles. First of which is jewellery containers. The ropes are woven to form a small bowl with lid and this is used for holding jewels and other valuable items in the traditional settings in the study areas as shown in figure 8. Some of the fibres are used for producing hats which are then given a touch of colour (figure 9). This hat is used by men and can be used at many functions in the community. The ropes can also be knitted into a bag. The bag produced from the knitted rope is mostly patronised by cowboys and herbalists in the Upper East region of Ghana. This is because the bag have the capacity to expand because of the knit. This makes it ideal for holding large volume of items (figure 10). The bag can be dyed with basic dye to give it some aesthetic appeal. The fibres are also used in weaving baskets made from grass.

The use of synthetic threads in the manufacture of these same items is fast gaining grounds. According to Asimba Godwin (personal communication, 12th April, 2016), the indigenes who buy these products now prefer those made from synthetic fibre since they last longer and also have brighter colours. Due to this posture of buyers, the manufacturers have resorted to producing limited quantities only.

Figure 8: Jewel container

Figure 9: Hat from jute

Figure 10: Bags

Figure 11: Baskets

3.4.3 Mats

The most traditionally significant of the mats produced from jute and straw is the *sogdoo* (Gurune dialect of Bolgatanga Municipal) or *sara* (Kassim dialect of Kassena- Nankana Municipal) which is used for burying the

dead (figure 14). The fibre is used to sew the straw together using an awl and the sewing is done by women. This mat is significant in the traditions of the people and as such, the most expensive of all the items produced from jute. One mat costs between Gh¢50-Gh¢70 (Table 2). The mat is sewn with one side been wider than the other. It is required that when an old person dies, all his/her in-laws present this mat as part of the items required for the funeral rites. The dead person is wrapped in the mat with the head at the wider side of the mat and carried by men to the burial site. After burial, the mat is burnt. The strong nature of the fibre makes it ideal for this purpose. In the olden days, the mat was used for burial and as a sleeping mat but the advent of synthetic mats is gradually eroding its use for sleeping.

The second is a door mat which is made by weaving thick ropes together. This mat is also not popular nowadays due to the more fanciful doormats with writings in them. The rope are also used in weaving ordinary mats which are used as sun shades in shops and places of relaxation. This mat is made from the stalks of thick grasses and the rope are used as fasteners (figure 13).

Figure 12: Jute door mat

Figure 13: Mat for shade

Figure 14: Burial mat

3.4.4 Masks

The fibres are also used in decorating masks which are used for interior decorations as well as functional purposes in shrines (figure 15).

Figure 15: Masks with jute fibres

Table 2: Prices of products made from jute fibres

No	Item	Price range (Gh¢)
1	Rope net	18-25
2	Rope for tying animals	2-4
3	Jewellery container	15-25
4	Hat	30-40
5	Bag	30-35
6	Basket	25-30
7	Door mat	20-30
8	Burial mat	50-70
9	Mat for shade	7-9
10	Mask	20-45
11	Silo roof cover	15-25

4. Conclusions

Jute provide an alternative source of income for farmers in the Upper east region. Farmers who are unable to process the jute fibres themselves are able to sell the stalks to jute fibre manufacturers. The manufacturers of the jute products are able to sell to the local market in the region.

There is a stiff competition from products made with synthetic fibres especially nylon. This is gradually diminishing the production and usage of the jute fibre in the region.

The study revealed that the manufacturers of jute and its related products are old men and women, a situation which calls for a critical look at the industry to prevent it from collapsing.

5. Recommendations

There is the need for the local assembly to train the jute article manufacturers on how to integrate the jute with other fibres into fanciful items in order not to be pushed out of market due to the upsurge of synthetic fibre base products. This will ensure that manufacturers are able to combine jute with other yarns in the manufacture of items which would ensure that these items lasts longer and are also able to appeal better to the local buyers.

The fibres could also be integrated with materials such as fabric, wood, calabash and other materials in the manufacturing of lamp shades, table covers and other simple office and household items which would ensure that the fibres are put to use in the manufacture of everyday articles.

There is also the need to experiment the use of the jute fibre for use in the booming Plaster of Paris industry in the region. The experiment if successful will give a boost to the jute industry locally and probably attract more youth into it

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