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## **Deficiencies and Decline of Daboya Local Dyeing Industry in Ghana**

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### **Abstract**

The deficiencies facing the local dyeing industry reflect significantly on productivity and the causes are multi-faceted, but the key ones include poor material quality as a consequence of bad smell and lack of wash fastness and sustainability of new fabrics. Daboya local dyeing industry, a cultural identity and a means of livelihood for the majority of the indigenes in North Gonja District, in the northern region of Ghana was therefore investigated with the prime objective to identify the dwindling fortunes, challenges and the deficiencies facing the industry. Relevant data for the study were collected through field research, questionnaire administration, individual and group interviews, and secondary sources. A total of 50 dyers from Daboya craft village was randomly selected using the simple random sampling method. The results of the study indicate that the industry is confronted with a number of challenges, including lack of technical know-how, lack of adequate training, insufficient raw materials, low consumer patronage, availability of coloured synthetic yarns and lack of financial support as the major setbacks of Daboya local dyeing industry. Systematic investigation into the methodologies adapted revealed an old-fashioned

and tedious practice that resulted in poor outcome and limited varieties of their products. Additionally, the introduction of indigo plantations will ensure an all year round supply of raw material to curtail the use of synthetic dyes in their operations and the provision of loan facilities will also help boost the local dyeing industry to resolve these deficiencies.

**Keywords:** deficiencies, decline, local dyeing industry, Daboya, local dyers, natural dyes

## INTRODUCTION

Daboya, a small town is the district capital of North Gonja, which is about 60 km from the northwestern part of Tamale across the White Volta. The trade has robbed about 20,000 members in around 68 communities in the district who are mostly into a smock weaving (Ghana Statistical Service, 2014). The Daboya community alone houses about 300 weavers (Abas, 2014 and Dzamedo, et al, 2015). The fabric, made with cotton, is processed into threads by women, stretched, dyed in deep pits using local indigo dyes, or in different colours, dried on a line for a period of time and hand woven into strips and stoles with hand looms. The four inches wide strips are carefully sewn together either by hand or machine into cloth for smocks ("Fugu" or "Batakari") and finished with intricate embroidery patterns around the collar worn mostly by the men of the region (Frimpong, et al, 2013).

The singularity of the Daboya weaving tradition hold a particular spot in the traditional textile industry of Ghana through its unique culture of yarn dyeing, strip weave and smock production (Frimpong, et al, 2013). It has become the most distinctive dress from northern Ghana, which has gained national significance famous for their beauty, patterns, colours, motifs, artistic appearance and texture. Cotton, known for its versatility, utility and natural comfort is the basic natural product used for domestic usage, as well as industrial uses (Abas, 2014). This strong tradition has become hereditary with fathers transferring their knowledge and skills to their sons. The boys in the family, at a very young age, start learning the art of making Fugu with very simple wooden looms and improve their skills through constant practice (Abas, 2014). The area, with its natural beauty and inexhaustible salt production ventures, rivers and tourist attractions, inspires artists and craftsmen. History has it that Fugu, meaning cloth in Moshie language was first introduced into Ghana by the Moshie's who migrated from Burkina Faso and settled in the northern part of the country and the Hausas from northern Nigeria (Kpogo, 2015). At the early stage of its appearance, the attire was used for political, military, Festival, marriage and burial ceremonies,

rather than economic purposes (Abas, 2014).

The growth of localized Industrial development in the hinterland has been recognized as one of the surest means of minimizing the migration of the able youth to the urban capital for greener pastures (Sow, et al, 2014). Over the years, the Daboya local dyeing industry has contributed importantly to the support of the indigenes and has likewise been an important source of revenue both to self and the North Gonja district as a whole (Abas, 2014). Nevertheless, these fortunes seems to dwindle as a consequence of the poor material quality production, (i.e. Bad odour, lack of wash fastness, sustainability of raw materials, and reduced labour force). The question now is can these dwindling fortunes, challenges and the deficiencies facing the industry be addressed? Significantly, addressing these challenges for the local dyeing industry by modifying production methods, will make their products more cost-effective at a competitive price and reverse the above product defects to improve specific properties in the finished product and make it acceptable to modern consumers (Abas, 2014).

Interestingly, there has been growing concern in natural dyes due to the awareness of threats posed by synthetic dyes as a result of the pollution from the production and use of some synthetic colorants (Paitoon et al., 2002; Kar & Borthakur, 2008) and their associated effect on human health has led to a significant resurgence of interest in natural colorants. Plant based natural dyes in recent times has been seen as an important alternate dye to synthetic in the local dyeing business due to their environmentally friendliness, non-toxic and biodegradable nature (Bhuyan & Saikia, 2005, 2008; Debajit & Tiwari, 2005; Samanta & Agarwal, 2009). Studies conducted by Kadolph, (2005); Siva, (2007); Purohit et al., (2007); Padma & Rakhi, (2007) revealed that natural dyes have properties similar to some highly rated synthetic dyes. With this growing interest, it has become increasingly imperative for the Daboya local dyeing industry to take advantage to rectify these deficiencies, to maximize patronage. In order to achieve the set objectives, a brief background of Daboya local dyeing industry will throw more light on its current state.

Daboya local dyeing also referred to as mud dyeing is as old as ancient Ghana (Tettehfiio, 2009). History has it that it's the indigenes of Daboya by their ingenuity and exploration discovered herbs with dye-yielding properties. Daboya local dyeing traditionally referred to as "*kayo*" was believed to have started in the northern Gonja District, "*Bagaramaspe*" to be precise (Abas, 2014). Daboya town used to be a wildlife conservation area which has a host of trees of various species. Neighbouring villages

such as *Shinga* and *Yezore* grew the indigo plant and still remains the only villages that grow the indigo plant (Abas, 2014).

Since time immemorial indigo leaves (*Gara fata*) are harvested and processed by Daboya women, but the extraction of dyes and dyeing in the local dyeing industry remain the reserve of men (Abas, 2014). Resist dyeing method (tie-dye) on fabric was practiced alongside yarn dyeing. Currently yarn dyeing remains the main dyeing activity practiced by dyers of Daboya. Dyeing was done by the pit dyeing method, which is now regarded by most dyers as the cheapest dyeing process. The colours produced by Daboya local dyers still remain the blue to black shades (Abas, 2014).

In West Africa Local dyeing traditions, natural textile materials are coloured using dyes from natural sources such as plants, animals and minerals. Dyeing was carried out to decorate woven fabrics and other art forms (Bechtold et al, 2003). Colours from natural source were used to colour textile materials to add value and make them desirable to consumers (Samanta and Konar, 2011). Records indicate that the local dyeing in Ghana, existed as a small scale industry carried out by the Asante's and the Gonja's. Jansen & Cardon (2005) described the existence of several plant dyes-yielding species in Ghana possess dyeing properties for cloth production. The Asante's specialize in dyeing and printing fabrics used for funerals, while the Gonja's of Daboya have specialized skills in dyeing cotton yarns used for woven stripes and sewn into fashionable garments.

The literature reveals that natural dyes sourced from plants were used extensively by most textile artisans' worldwide. Technically referred to as vegetable dyes, plant dyes such as indigo dye from the species *Lonchorcarpus cyanescenes*, *Rhodognaphlon brevicuspe* (*kuntunkuni*) and *Bridelia micrantha* (*Badie*) are the three major natural dyes used to colour fabrics and yarns (Asmah, 2000). Although this ancient art of dyeing fabrics with natural dyes withstood the effects of time, but due to the wide availability of synthetic dyes at a reasonable price, a rapid decline in natural dyeing continued (Samanta and Konar, 2011). Despite its negative effect of causing skin allergy and other destructive to the human body, producing toxicity/chemical hazards during its synthesis and release of undesirable, hazardous and toxic chemicals to the environment. Conversely, in some natural dyes like harda and indigo, the waste in the process becomes an ideal fertilizer for use in agricultural fields (Samanta and Konar, 2011).

Today, synthetic dyes are preferred by most textile artisans in Ghana because of its range of colours, easy application process and its fastness properties. A study by Korankye, (2010) has confirmed that despite the effort that has gone into previous studies on synthetic dyes, the desire of people to wear apparel dyed with local dyes still

exist. Most surprisingly, the local dyeing industry, which was once vibrant, employing over a thousand workforce within the community, is generally experiencing a state of decline, along with the various advantages of engaging the youth for socioeconomic benefits, makes it a subject to be considered. An improvement from the present state will require relevant methodology and a state of total resolution for a change. This paper therefore objectively seeks to identify the deficiencies that have led to the decline of Daboya local dyeing industry and to suggest recommendations that will possibly help improve the dyeing activities in Daboya.

## **METHODOLOGY**

A Daboya craft village in the North Gonja District of Northern Region was the study area; located in the north-west of Tamale. A case study design was adapted for the in-depth analysis (Kusi, 2012) which made use of the opened-ended questionnaire and observation instruments to gather data that militate against the growth of the local dyeing industry. The reason was to randomly sample different views from dyers on the challenges of the trade and the need to sustain the local dyeing industry within the study area. The questions used for the survey was formulated based on the objectives of the study. Illiterate dyers, were interviewed with the help of an interview guide and the relevant data collected, verified and analysed in addition to the direct observations made in the field of study. Prior to data collection the researchers visited the research area to acquaint themselves with the dyeing activities and the dyers.

The study used the qualitative research method due to the technical and social-cultural effects of the local dyeing industry (Jacobs, 1988). This was used to describe and to understand holistically the deficiencies and decline of Daboya local dyeing industry from the people's point of view and to formulate the best possible ways the business can come out of its challenges to develop and promote the trade. The activities as well as production methodologies were observed and recorded accordingly. The data collected from the local yarn spinners, dyers and retailers of the dyed yarns as well as the leaders of Daboya craft village were analysed and the results discussed. This ensured a comprehensive understanding of the technical hitches identified in the local dyeing industry.

The random sampling size used for this study was 50 active dyers, 60 local yarn spinners, 20 retailers of the dyed yarns and 10 leaders of Daboya craft village presenting 140 sample size of the population were randomly selected. The interview sought information on age, educational background, gender, ownership, technical know-how, marketing, and apprenticeship, experience of local dyers and assessment of end

products. Some of the questions required simple and straightforward answers, and others required elaborations. However, during the interview session most of the answers given by the respondents allowed the writers to ask follow-up questions for clarity. The researchers were also given the opportunity to have a practical feel of the activities and materials used. In a nutshell the discussion with the dyers was successful.

## RESULTS AND DISCUSSIONS

The base of the smock weaving industry starts with yarn preparation through spinning of cotton yarns to the dyeing of these yarns to strip weaving and sewing into cloth and then to smock to the marketing of the final products. The traditional weaving industry in the North Gonja district would only succeed if the base material of the industry is available, sustainable and well processed especially with the right methodologies in the initial production stages. For this reason, various segments of the working force that constitute the entire smock weaving production needed to be robed in, in order to assess effectively the extent of the deficiencies and the decline of the local dyeing industry. The premise for discussion was therefore based on surveying the entire volume of people engaged in the chain of production in the smock weaving industry.

The preliminary survey gathered data from males and females who relate to the cycle of operation in the smock weaving industry within the study area. Out of a target population of 300, the accessible population stood at 240 respondents, with 60 being females who were mainly into the spinning of cotton yarns for dyeing. 126 males out of 180 respondents were actively engaged in the cottage textile industry, of which 50 were active dyers, 60 smock weavers, and 10 retailers of smock and dyed yarns, 6 made up of the leaders of Daboya craft village. Out of 60 smock weavers, 30 were also engaged in farming with 24 respondents engaged in salt farming, which indicates that only 4 out of 60 smock weavers restricted themselves to only smock weaving. Per the above statistics, the local dyeing trade is dominantly males, representing 67.7%, while the females accounted for 32.3 % respectively.

The age distribution of respondents related to the cycle of operation in the local dyeing industry within the study area indicates that the energetic workers are in the range of twenty five (25) and (48) forty eight years mutually representing 68%. Other respondents who were between the ages of 20-24years; 49-54years and those within 55 and above years representing 18%, 10%, and 4% respectively. The implication is that most respondents work for the upkeep of their families.



### Background of Respondents in the Local Dyeing Industry

It came to light that out of the 180 accessible population interviewed, 126 respondents representing 70% of the indigenes are actively engaged in the cottage textile industry, 10% of these indigenes are also farmers, 10% are engaged in fishing, 5% are engaged in salt mining and 5% are engaged in petty trading. The textile artisans dominate because the art is part of every child's upbringing, this means that the art of dyeing has been passed on from generation to generation. It was revealed that only the male gender dominated the Daboya local dyeing industry, this has been revealed in previous studies (Abas, 2014) due to the tedious nature of the dyeing processes. It was also revealed that apprenticeship is not really practiced since the art is part of their culture, but migrants interested in acquiring local dyeing skills are mostly regarded as an apprentice if allowed. Dyeing activities carried out are done in groups of families that exist in the community.

### Demographic of Active Dyers

From the study, it was discovered that the dyers in Daboya are between the age range of 8 – 55, however ages between 17- 40 forms the majority in the local dyeing industry. This means that the youth and energetic people are engaged in the local dyeing industry. In totality, the age range (8 – 55) is the working age this makes the industry an avenue for economic developments. The bulk of the respondents (95%) were natives whilst the remaining 5% were migrants.

**Table I: Age range of dyers in Daboya local dyeing industry**

Age range	Accessible Population	Percentage %
8-16	10	20
17- 24	12	24
25- 32	15	30
33- 40	9	18
41- 47	3	6
48-55	1	2
TOTAL	50	100%

It was revealed that over 50% of the respondents were dropouts in the basic level of their education, a quarter of the accessible population had basic education. However, the percentage of the respondents who had senior higher education been lower, but it is

an improvement as compared to the discovery made in the study of small and medium forest enterprise in the northern savanna of Ghana, Osei tutu et al (2010), which revealed the low level of dyers with regards to senior high education. It was revealed that unemployed graduates from the research area engage in local dyeing to earn a living while hoping to get employment in the public sector. On the contrary, the involvement of graduates from the senior high institution is a positive thing in the industry, because of the measures spelt out in this study to address the decline of Daboya local dyeing industry.

**Table II: Educational background of dyers in Daboya local dyeing industry**

Educational level	Accessible population	Percentage (%)
Drop-out from Primary school	25	50
Primary to middle school	15	30
Senior high school	5	10
None of the above	5	10
Total	50	100%

### **Lack of Technical Know-How**

The methodology adopted by dyers for several decades is still practiced till date. Moreover, it was revealed that 50% of dyers in Daboya could not give technical explanations of methodology used in the industry. The knowledgeable elders in the industry based their explanation on the fact that the methodology has been handed over from generation to generation. The aged in the industry use their senses of taste and feel to describe the chemical reaction to the various dyeing activities.

The research revealed that no technical training workshops have been organized by the assembly or any NGO to educate these dyers on better ways of natural dyeing application. Research institutions such as the C. S. I. R. should implement the findings of previous studies by Abas, (2014), on the new methodology of cotton yarn dyeing towards better wash fastness which may go a long way to improve on the marketability of dyed yarns. Developing easier and faster methods of production processes to



improve on quality will make available prompt access to fast and improve techniques toward the growth of the business.

### **Scarcity of Raw Material**

Previous study (Abas 2014) indicates that young, fresh indigo leaves are excellent for producing an indigo dye vat with intense shades of blue. But because of the rainfall pattern of Northern Ghana, the dyers are compelled to make use with what nature provides them. Addressing this deficiency, it will be prudent to advise farmers in Daboya or interested persons to invest in indigo plant plantations especially during dry season. The White Volta can be used as a source of irrigation water. The challenges encountered with regard to the purchase and use of the raw materials in their production processes have compelled the Daboya dyers to start using imported undyed yarns from neighbouring countries as a result of the inability of the traditional cotton hand spinners to meet the required demand of local cotton yarns. The challenge may possibly be due to low harvest yields of cotton, the slow processes associated with hand cotton spinning and the difficulties associated with the lack of fund to purchase their raw materials for the production and processing of the cotton into yarns.

### **Adoption of Synthetic Dyed Yarns**

During the discussion with dyers, it was revealed that, most consumers of locally produced attire "*Fugu*" currently have a taste for bright coloured locally woven fabric (*Fugu*) like red, pink, and yellow. Yarns that come in such colours are synthetic dyed yarns; they are cheaper compared to locally dyed yarns.

Nevertheless, consumers still prefer smocks (*Fugu*) produced from locally dyed yarns since it is regarded as unique and a cultural identity not for Ganja's only but for Ghanaians as a whole. Moreover, it was reported that over 40 plant species are potential sources of dyes for textile industries (Jansen & Carden, 2005). There is the need to inform, educate and practically investigate the dye yielding properties of these plant species with dyers in Daboya. This will bring variety in colours produced thereby satisfying consumers that have a desire for colours other than colours produced from indigo plants (*Gaara*).

### **Lack of Financial Support**

It was revealed in the study that 10% of the respondents financing their local dyeing business, 20% rely on friends and relatives to pre finance only as and when they are given contracts. 25% rely on partial payments made by clients to finance contracts, 45% of dyers receive contracts from intermediaries. Though payment is made promptly, dyers have not earned much since a percentage determined by intermediaries is deducted from the principal amount. It was revealed that mostly consumer's default payment rendering the dyers poor. The researcher discovered during discussion with respondents that there is no uniformity in prices of locally dyed yarns. Dyers that charge lower sell most; these local dyers are believed to use inferior raw materials (synthetic indigo dye) for dyeing.

Resolving this deficiency, dyers will have to be educated on how to cost their products and manage business to avoid losses. Furthermore, dyers together with the intermediaries should come together to decide on a definite price on their products. It is also prudent that NGOs and financial institutions (micro finance) could provide loan facility to dyers at a reasonable interest rate to boost the industry and to ensure prompt repayment of loans.

### **CONCLUSIONS**

The local dyeing industry is potentially viable and therefore needs to be revived. The local dyeing industry lacked appropriate tools and equipment needed to facilitate easy and stress-less production processes that will yield good results for the ready market within the weaving industry. The local dyeing industry also lacks quality yarn production methodologies hence their inability to satisfy the customer preference as a result of lack of technical know-how, scarcity of raw materials, adaptation of synthetically dyed yarns and lack of financial support. As such, the local dyeing industry has failed to make any significant impact towards poverty reduction and employment creation especially for the youth. To avert this trend, practical steps need to be taken to educate and organize practical training for dyers to improve upon their technical knowhow to make their end product acceptable to the consumer. To maintain a sufficient supply of fresh young indigo leaves all year round for production, it is advisable for farmers go into the indigo plants plantation to ensure adequate supply of fresh young indigo leaves especially during dry the season. The abundance of plant species in Ghana (Jansen & Cardon, 2005; Wanyama et al., 2011; Samanta & Agarwal,

2009) makes it imperative to adopt different shades of colour in the industry to reduce the burden on importation of synthetic dyed yarns. Regular enquiry into the dye-yielding potential of plant species and their practical application and performance would boost the local dyeing industry in Ghana. The industry should remain open to professional advice and yearn to update their methodologies every now and then to enhance the development of the trade to reflect on livelihood, produce income and contribute greatly to the growth and sustainability towards rural development. This will assure the youth that the industry provides beyond subsistence livelihood capable of generating regular income. The implication is that when production abound, patronage will equally increase and provide a ready-made market for a sustainable economic livelihood.

In inference, self-worth and progressive advancement of craft a community is founded on artistic establishments and tendency for perfection which is one of the most particular features known for economic development. Thus addressing the deficiencies and the decline of the status-quo and methodologies of production through education can help bring to speed the appropriateness of the final art product.

## RECOMMENDATIONS

Since the production processes promote tourism within the West Gonja District, dyers should equally see the expertise as a business venture and not solely as a tradition, in order to attract multi-faceted consumers in patronage for fashionable embroidery works as well as its use for the ceremonial smocks. They are also encouraged to form associations in order to tailor their grievances to the District assembly for the needed assistance to be addressed. Most identified challenges hinges on the production processes and the quality of dyed yarns produced in relation to its wash fastness and the tools and materials used which has no bearing on the quality of the end product. Improving on the quality and processes involved in yarn dyeing will eventually eliminate the slow and tedious nature, help reduce prices of dyed yarns and improve its wash fastness. The availability and accessibility of bright colour yielding plants will diversify the local indigo colour dye used in the dyeing process of cotton yarns and remove the limitation of traditional colours used. Lastly assistance to improve on tools and equipment, workplaces for dyers and amenities like water, electricity and good road in the community will facilitate easy accessibility to promote tourism.

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