

Crafting A Menace to An Opportunity: A Study on The Perception of Water Hyacinth Crafts in Assam

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ABSTRACT

Water hyacinth (*Eichhornia crassipes*) which is found in the water bodies of Assam poses severe environmental and economic challenges due to its alarming growth rate. Efforts have been made to transform this invasive aquatic flora into eco-friendly commercial products in the recent years. Water Hyacinth Craft products are known for their unique designs, aesthetic appeal, eco-values. Various products like Bags, Decorative items, furnitures, storage boxes, mats, etc. are made from this menace. Today's customers are increasingly becoming environmentally conscious, make responsible choices by buying eco-friendly products, and thus support sustainable living. This study provides an insight into the customer perception towards water hyacinth craft products in Assam highlighting how a green menace has been crafted into environmental friendly products. The aim of the study is to assess the awareness, preferences, and attitudes of consumers regarding the various products made from water hyacinth. The study also

attempts to throw light on the potential for such crafts which serves as a viable livelihood option for rural communities. The study also uncovers various challenges and barriers associated with such products. Quantitative study covering 20 Artisans and 50 customers was conducted to get an in-depth understanding.

Thus, it can be said that this study focuses on the growing acceptance of water hyacinth craft products among consumers, specifically in Assam. Positive customer impression shows strong market presence, which is fueled by environmental consciousness and a preference for homemade, aesthetically appealing, eco-friendly alternatives. This transformation of a menace to an opportunity paves a way to support regional handicraft and meaningfully combine environmental preservation along with economic growth.

Keywords: *Water Hyacinth, Customer Perception, Livelihood, Eco-friendly, Assam*

INTRODUCTION

Water hyacinth (*Eichhornia crassipes*) known as Paani Meteka in Assamese is an invasive aquatic plant. This has long been considered as an environmental nuisance across the freshwater ecosystems. In regard to a place like Assam, where water bodies such as Beels, wetlands, and rivers form a significant part of the ecosystem the rapid growth of water hyacinth possess serious challenges. These weeds create hindrances in the growth of other aquatic plants and for water animals as well. These are also responsible for degradation of the quality of water. Earlier considered a problematic weed, water hyacinth has now been able to gather attention for its potential to be transformed into eco-friendly commercial products and being a viable resource through craft-based livelihood initiatives.

In the present scenario people are becoming more and more environmentally conscious and sustainable development, environmental conservation, and women entrepreneurship has gained significant momentum. The transformation of a menace to eco-friendly crafts emerges as an innovative and tailored solution. Local artisans particularly women are engaged in transformation of this Weed into Wealth. Initiatives of various organisations, growing entrepreneurial mindset among the artisans have helped in crafting a diverse range of utility and decorative products from Water Hyacinth such as baskets, handbags, mats, furniture, home decor items, etc. that embodies the principle of Green Entrepreneurship and possess aesthetic value. Water Hyacinth was

also granted the coveted GI Tag along with other other iconic items of Assam for the unique design, traditional craftsmanship that have also helped in international recognition for its aesthetic qualities and encouraging the artisans as well.

Though there have been promising developments, the growth, long term sustainability and market acceptance of these products is dependent on a number of variables. Consumer perception in terms of quality, affordability, functionality, and environmental impact plays a significant role. Understanding the demand of such products both within and outside Assam is also important as it have an impact on the economic viability as well as scalability.

This study, thus, examines the transformation process of this menace into wealth, generating a sustainable livelihood option among the local communities in Assam. It also studies the awareness and perception of water hyacinth craft products among consumers. The research aims to assess the socio-economic ramifications of promoting water hyacinth crafts as a source of income, while contributing towards environmental sustainability. The findings are expected to inform strategies for future growth and expansion of water hyacinth craft products with the objective of ecological sustainability and socio-economic empowerment.

REVIEW OF LITERATURE

The increasing need for eco-friendly products underscores the importance of shifting consumer behavior towards environmentally friendly lifestyles. Present customers are aware of the environmental challenges; however, many consumers still lack adequate knowledge about green products, and this low awareness have created a hesitant attitude to embrace environmentally sustainable products. (Jacob Cherian and Jolly Jacob, 2012). The consumer behaviour can be assessed based on virtues that promote human flourishing, rather than self-interest alone. Drawing from Aristotle's concept of "eudaimonia," they contend that ethical consumption practices align with virtues like temperance, prudence, and justice. Temperance, for example, addresses moderation in consumption, counteracting tendencies toward overconsumption and its environmental impacts, while justice emphasizes fairness, promoting equitable practices toward workers and communities. This virtue ethics framework diverges from conventional theories that focus on utilitarian or profit-maximizing approaches, offering instead a model where consumer practices contribute to both individual and societal well-being.

The authors highlight the mutual role of consumers and businesses in fostering ethical consumption, suggesting that businesses can encourage virtuous choices by prioritizing transparency and aligning with socially responsible values. Their approach is recognized for its unique contribution to

consumer studies, shifting the focus from the external impact of consumer choices to the character and intentions guiding them. This model enriches ethical consumption literature by proposing that consumption should foster not only personal benefit but also the broader social good, integrating individual character with communal responsibility. (Ruiz P.G and Lluesma. C.R., 2014).

Water Hyacinth that is considered a menace to water bodies has been adapted as an alternative for cane and bamboo crafts in traditional handicrafts. This innovative use of a problematic plant highlights a successful environmental management strategy. The Artisan Development programme has been successful in imparting training to a large number of artisans. The rapid increase reflects how well the initiative has done in enhancing new economic prospects. The eco-friendly products have found a strong market presence, depicting both consumer interest and the project's ability to meet the growing demand of the market. The project has had a major impact on the lives of economically weaker rural people. Special emphasis has been laid on rural women in the North Eastern region. This shows how the initiatives aids empowerment and economic development.

NEDFi is considering establishing a raw material bank to ensure a steady supply of water hyacinth stems, even during the winter. This effort aims to sustain production and satisfy the ongoing demand. There are various barriers faced by the project in scaling up, such as including more participants and

creating opportunities for the unskilled. Addressing these issues is of utmost significance for broader impact and inclusivity. (Borah.N, 2018). Eco-friendly crafts have contributed to the empowerment of rural women by providing them with alternative sources of income. The act of harvesting and processing water hyacinth helps in cleaning water bodies and supports community-driven entrepreneurship. Also crafting provides rural artisans with flexibility in their hours of working and supports traditional skill preservation. (Dutta and Saikia, 2020).

The sustainability of eco-enterprises depends on access to regular markets, logistical infrastructure, and product standardization. If it lacks organised marketing channels and exposure to wider markets it will have limited scalability of water hyacinth-based craft industries in Assam. (Tripathy, 2018). The efforts of organisations like the North Eastern Development Finance Corporation (NEDFi) and Assam State Rural Livelihood Mission (ASRLM) to promote water hyacinth crafts through training and market linkages is focused on. Initiatives such as branding the craft products under the name 'Aqua Weaves' and the creation of biodegradable yoga mats showcase the utility of water hyacinth. The craft helps in waste management by transforming the menace to eco-friendly products that can be marketed in local as well as international market. Through proper training and financial support, many artisans have turned into entrepreneurs, and this have

created a significant impact in the economic condition of the entrepreneurs. (Bora. B, Baruah. N and Sahariah, B., 2019).

RESEARCH PROBLEM

Water hyacinth, considered an environmental threat in Assam, possesses untapped potential as a raw material for production eco-friendly craft products. However, the perception of consumers toward these products remains unexplored to a considerable extent, which possesses a barrier in its growth. In addition, the rural artisans who are engaged in water hyacinth craft face various challenges without understanding consumer behavior and the challenges the transformation of this invasive weed into a livelihood opportunity remains confined. This study seeks to address these gaps through proper investigation in Kamrup district of Assam.

OBJECTIVES

- To understand the process of transformation of Weed to Wealth
- To examine consumer awareness and perception regarding water hyacinth craft products in Assam.
- To assess the potential of water hyacinth crafts as a sustainable livelihood option among the local communities.

SIGNIFICANCE OF THE STUDY

The study will help to get an idea on the transformation of a waste to a revenue generating opportunity. This will help in knowing about the perception of the

customers; understand their purchase behavior. The study throws light on how water hyacinth crafts are contributing to income generation, especially among rural population. It helps find out ways to strengthen local entrepreneurship and enhance the economic empowerment of artisans engaged in this sector. This paper will also help other researchers as a Secondary source of information

RESEARCH METHODOLOGY

Research Methodology is a way to systematically solve the research problems by carrying out a careful investigation or inquiry especially through search of new ideas, facts and figures in any branch of knowledge.

Research Design

This study is based on mixed method - qualitative and quantitative research design. The emphasis is on Primary and secondary sources. The study aims to find out the customer perception towards water hyacinth crafts and tries to find out how these crafts help in livelihood generation among the rural artisans. The Design is empirical and descriptive in nature.

Study Area

The research is conducted in the state of Assam, with special emphasis on Kamrup district.

Sampling Technique and Sampling size

- Purposive and Convenience Sampling has been used for artisans and customers.
- Sample Size- 20 Artisans and 50 Customers

Although 60 questionnaires were distributed among the customers, response could be obtained from 50.

Time period: 1 month (June-July 2025)

Data collection

Data have been collected from Primary sources as well as Secondary sources. Primary sources include Telephonic Interview for artisans and Structured Questionnaires for customers and the Secondary sources include books, thesis, dissertations, journals, news articles, conference proceedings, reports, websites, etc.

Data Analysis

Analysis and interpretation have been done through percentage method depicted in tables and represented through pie and bar diagrams.

WATER HYACINTH CRAFT IN ASSAM

The water hyacinth craft in Assam demonstrates an impressive instance of how a problem can be transformed into an opportunity. Water hyacinth, an invasive aquatic weed known for disrupting water bodies, once posed a serious environmental challenge. However, with innovative intervention from local communities, NGOs, and government bodies, this menace has been turned into a valuable eco-friendly resource. The artisans carry out the process of transforming the menace to create eco-friendly products such as Furnitures, Bags, mats, baskets, Handmade accessories, trays, hats, lamps, coasters, yoga mats. Initiatives led by the North Eastern Development Finance Corporation Ltd. (NEDFi), Assam State Rural

Livelihood Mission (ASRLM) and various other organisations played a significant role in training a large number of artisans in these craft-making techniques.

Various places in Assam have established Common Facility Centres, offering tools, raw material banks, and marketing support. It not only revives traditional weaving skills but also empowers artisans financially, mostly women. Products crafted from water hyacinth are gaining momentum nationally as well as internationally. The strong market presence reflects the growing need and awareness for sustainable goods. The crafts success lies in its overall impact—reducing environmental degradation, generating income, and promoting social empowerment. Assam though still at a developing stage of Water Hyacinth Crafts continues to expand this sector through unique creative design inputs, export opportunities, etc. The water hyacinth craft sector holds tremendous potential for becoming a pioneering model of eco-friendly entrepreneurship and innovation.

STEPS IN THE CONVERSION OF WATER HYACINTH INTO CRAFTS

- **Collection of raw materials:** Water hyacinth is collected from local water bodies or ponds—often manually—by rural workers.
- **Cleaning:** The collected plants are cleaned thoroughly to separate the stems and leaves and remove and other impurities.

- **Drying the stems:** The cleaned stalks are sun-dried for several days to reduce moisture so that they are suitable for crafting.
- **Sorting and Cutting:** After drying the stems are sorted based on thickness and quality. They are then cut into specific sizes depending on the item to be produced.
- **Flattening:** With the help of flattening machine the fibre will be made flat so that fine quality products can be made.
- **Dyeing:** Natural or eco-friendly dyes are sometimes used to color the stems though it is optional; and this adds aesthetic value to the final product.
- **Weaving and Shaping:** The trained artisans weave the flattened water hyacinth strips into various products like baskets, mats, trays, bags, furniture, etc., often combining them with bamboo, cane, or jute.
- **Finishing:** Edges are smoothed; products are polished as per requirement for durability and a refined finish.
- **Quality Check and Packaging:** Final products are checked for consistency and quality before being ready for sale or export.

PERCEPTION OF WATER HYACINTH PRODUCTS IN ASSAM

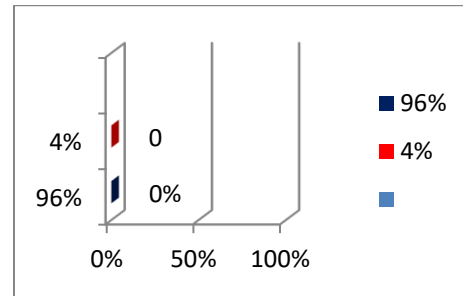
In Assam, the water hyacinth products are going through a positive transformation, especially as environmental consciousness and sustainable livelihood methods gain

importance. Originally viewed as a disruptive aquatic weed, water hyacinth is now being transformed into eco-friendly commercial craft products. This significant change in perception is driven by various organisations like NEDFi, some NGOs, and the local artisans who have recognised the possibilities of this problematic plant. In districts like Kamrup, Morigaon, Tinsukia, Darrang, Nagaon, Dhubri, etc local artisans have started producing a varied range of aesthetically designed sustainable water hyacinth products which have gained popularity. Today’s customers have become environmental conscious and responsible and they prefer green products. For the artisans who are involved in the manufacturing process, water hyacinth crafts offer a platform for artistic expression and a stable source of income. The products are showcased in showrooms, retail outlets, exhibitions, craft fairs, and online platforms. However, full-scale market acceptance still faces certain obstacles.

With enhanced design innovation, organizational initiative, skill development, and better market access, the perception of water hyacinth products in Assam is gradually moving from that of a problematic plant into magical crafts, showcasing meaningful symbol of sustainable entrepreneurship and rural empowerment. The development is small yet encouraging.

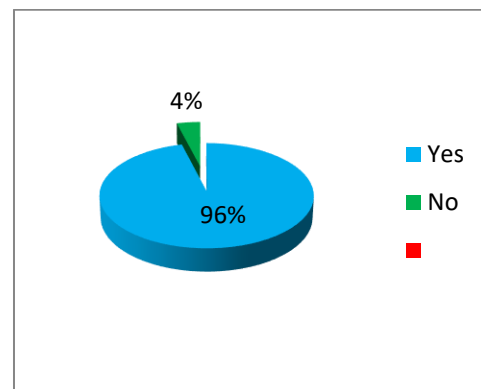
DATA ANALYSIS AND INTERPRETATION:

Figure 1 showing Artisan’s view on employment from craft



Interpretation: Figure 1 shows that 100% of the artisans engaged in water hyacinth crafts say that it provides regular part-time or full-time employment.

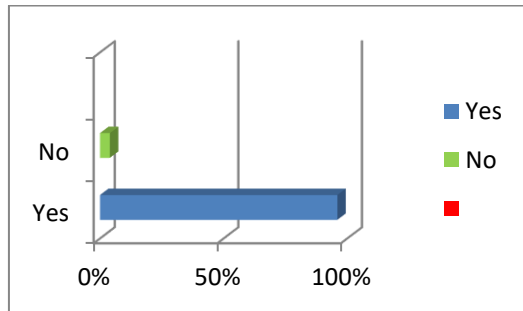
Figure 2: Showing contribution towards Household earnings



Interpretation: Figure 2 shows that 70% of the respondents have responded that income from water hyacinth craft contributes to above 50% of their total household earnings, showing its increasing significance in supporting livelihoods. Another 10% are of the view that they contribute above 95%, mostly saying that they are the sole earners, as a result of which the contribution towards household

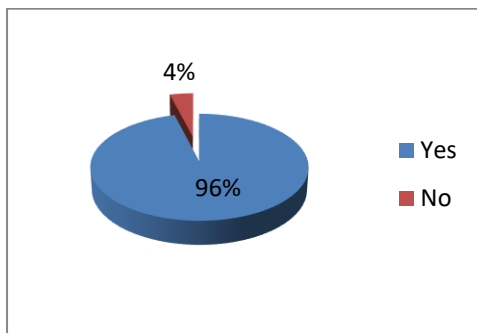
earnings is 100%. The other 20% responds that the water hyacinth contribution is below 50% in their household earnings.

Figure 3: Showing Contribution of Artisans towards Household Earnings



Interpretation: Figure 3 shows that 20% of artisans involved in water hyacinth product-making earn an average of above ₹.10, 000 per month, 50% responds that they earn above ₹ 5,000 but below ₹ 10,000 per month, 30% responds that their earnings are below ₹ 5000. These earnings are depended on demand, market access, and seasonal orders.

Figure 4 showing awareness of Water Hyacinth Craft Products



Interpretation: Figure 4 shows that 96% of the respondents are aware of water hyacinth craft products showing the increasing acceptance.

FINDINGS OF THE STUDY

From Artisans' point of view

- The study shows that water hyacinth being readily available raw material, makes it easily accessible and cost effective for the craft production. This has emerged as a viable source of income for the artisans especially women.
- It has also enhanced entrepreneurial skills, leadership, and financial independence among rural women, thus making them self-reliant.
- 100% of the artisans engaged in water hyacinth crafts are of the view that it provides regular part-time or full-time employment.
- 70% of the respondents have responded that income from water hyacinth craft contributes to above 50% of their total household earnings, showing its increasing significance in supporting livelihoods. Another 10% are of the view that they contribute above 95%, mostly saying that they are the sole earners, as a result of which the contribution towards household earnings is 100%. The other 20% responds that the water hyacinth contribution is below 50% in their household earnings.
- 20% of artisans involved in water hyacinth product-making earn an average of above ₹.10,000 per month, 50% responds that they earn above ₹ 5,000 but below ₹ 10,000 per month,

30% responds that their earnings are below ₹ 5000. These earnings are depended on demand, market access, and seasonal orders.

- Nearly 70% of the surveyed respondents believed that water hyacinth crafts have long-term potential as a sustainable livelihood source. However they are also of the opinion that it will have a more profound impact provided it is supported through training, infrastructure, market linkages and financial aid.
- Despite its potential, as per majority of the respondents the craft faces obstacles such as lack of market access, inadequate infrastructure, problem in transportation, lack of awareness among the people, financial support, etc. These issues need to be attended to ensure the long-term viability and scalability of the livelihood model.

From Customers' point of view

- Majority i.e. 96% of the respondents are aware of water hyacinth craft products showing the increasing acceptance.
- 83% of consumers perceived water hyacinth products as eco-friendly and considers them to be sustainable alternative.
- About 79% of consumers appreciated the aesthetic appeal and unique

quality of the water hyacinth products,

- Nearly 52% of consumers expressed a willingness to purchase more water hyacinth craft items in the future if the price is made reasonable. However 48% find the price reasonable considering the eco-friendly nature of the products.
- Around 40% of the respondents that there needs to be more market campaigns and advertisements so that more people will become aware about such products.
- Majority of the customers says that there is moderate awareness regarding such products. Many people are not totally familiar with the benefits, the material's versatility and its change from an invasive weed into eco-friendly commercial products.
- Majority i.e. around 90% consumers who were aware of the products generally had a positive perception, appreciating the eco-friendly nature. Consumers also appreciated the unique design and artistry involved, which increased the value perception of the products to a great extent.
- However, some consumers were a bit hesitant expressing concerns about the durability, resistance to water and finishing of water hyacinth items. This indicated a need for more product standardization and control in

the quality and manufacturing process.

LIMITATIONS OF THE STUDY

- Time was a major limitation for which the researchers could not give the study its due.
- The outcome of the study cannot be universally taken into consideration as the as the respondents lie within the periphery of a limited area. The sampling size may be inappropriate to draw true inferences for the entire population.
- In certain case, the respondents were reluctant or hesitant to provide few information and some of them found it difficult to transcript their experience.

CONCLUSION

This study highlights the incredible journey of water hyacinth—from an invasive aquatic plant to a valuable eco-friendly resource. Emphasis have been made on exploration of the process of transformation where the research focuses on the ingenuity and skill involved in transforming an invasive weed into a source of income and innovation.

Findings shows that an increasing awareness and positive perception among the consumers regarding eco-friendly water hyacinth crafts, driven by growing awareness of environmental aspects and appreciation for sustainable, handmade products. However, there are obstacles that remain in increasing awareness and optimising market reach. The study also

underscores the growing potential of water hyacinth crafts as a sustainable means of livelihood or local communities in Assam. The initiative not only contributes towards management of the environment by controlling the abundant growth of the invasive weed but also empowers the local artisans—especially women—with opportunities for income. With appropriate policy support, market linkages, skill development, awareness generation this ‘Weed to Wealth’ transformation initiative can serve as a viable blueprint for inclusive and green development across the region.

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