

Nature, Profitability and Sustainability of Murta (*Schumannianthus dichotoma* (Sal.) Willd.) Based Small-Scale Enterprises in North-Eastern Bangladesh

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Abstract A study was conducted on small-scale enterprises based on murta (*Schumannianthus dichotoma* (Sal.) Willd.) in Gowainghat upazila (sub-district) to investigate their nature, profitability and sustainability. The study area was selected purposively while a general random sampling method was followed to select individual respondents. About 94% people are involved in murta-based enterprises and there is a clear division of labour between males and female. Almost 80% of the manufacturing work is done by females. The average annual income of the artisans is Tk.65733 (USD 939) and 62% of the total income comes from murta-based small enterprises. Fresh water swamp forest and homestead forest are the major sources of raw materials and cost of raw materials ranges from Tk.127 for simple dining mats to Tk.188 for coloured bed mats. Net average profit per article ranges from Tk.127 to Tk.250. However, the sustainability of these enterprises is at risk, due in particular to shortage of raw materials and lack of supportive government policy.

Keywords Artisans · Sitalpati · Supply chain · Labour division · Middlemen

Introduction

Most of the world's population live in the rural areas. Approximately 3 billion people in the developing world live in rural areas where historically poverty has been concentrated (Chen and Ravallion 2007). Rural people seek supplementary employment opportunity on a sustainable basis to support their livelihood. The forest-based industry is one of the major sources of off-farm income to rural

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population. About 97% of forest-based enterprises are located in rural areas and they account for 13% of the total manufacturing enterprises (FAO 1986). These enterprises provide goods and services to the poorer strata of the society, which the largest industries fail to accomplish. Thus forest based small-scale enterprises play the major role to the socioeconomic development of the country. Murta (*Schumannianthus dichotoma* (Sal.) Willd.) is one of the important raw materials for these enterprises.

According to Wikipedia (2010), murta (*Schumannianthus dichotoma* (Sal.) is the raw material for making shitalpati, a traditional bed mat of Bangladesh. Murta is a clump-forming rhizomatous shrub belonging to the family Marantaceae (Hooker 1892; Prain 1903). It is dichotomously branched and has green cylindrical stems attaining a height of 3–5 m and a diameter of 2.0 cm with oblong leaves of 8–15 cm length broadly rounded at the base (Mohiuddin and Rashid 1988; Wikipedia 2010). The cylindrical stems of murta plants are collected as raw materials for murta-based enterprises. Traditional artisans make strips from outer portion of the stem including the epidermal part. These split strips are processed and plaited into mats. Murta splits are also used for making prayer mats, wall mats, dining mats, baskets, bags and novelty items. (Wikipedia 2010).

Murta is distributed in Northeast India, West Bengal, the Coromandal Coast in India and the Malay Peninsula. In Bangladesh, it covers sizeable areas in the forest of Sylhet Division and is an important source of forest revenue (Choudhury 1970). However, it is cultivated in water-logged and swampy land throughout most parts of Bangladesh, including Sylhet, Sunamgonj, Barisal Tangail, Comilla, Noakhali, Feni and Chittagong. The local name varies between locations throughout the country, e.g. *papita* and *pati-jung* in Chittagong region, *mastak* in Noakhali, *pat-bat* and *murta* in Sylhet and Tangail region and *pairabon* in Barishal (Rashid et al. 1993). Swamp forest of Sylhet region is the traditional home ground for naturally grown murta. Homesteads of Gowainghat, Jainta pur, Companigonj, Jakigonj and Jaflong areas are rich in murta plant. As a result murta-based small-scale enterprises have been developed and flourished based on easily available raw materials arriving from homestead and fresh water swamp forest. Considering the socio-economic role of these enterprises the Forest Department (FD) took some initiatives to ensure sustainable raw material supply to the enterprises. Under the Bamboo, Cane, *Murta* (BCM) Development Project, the Sylhet Forest Division raised 498 ha of murta plantation at reed land areas of the region from 1980–81 to 1997–98 (FMP, 1992).

In Bangladesh, agriculture is the main source of employment. Other than agriculture, rural industrialization is most commonly recommended as having potential for absorbing increasing manpower (Ahmed and Chowdhury 1987). GOB (1992) estimated that about 8,000 people are employed in shitalpati making in the country, and the number has increased since that time.

As a forest resource, murta generates a considerable amount of revenue for the Forest Department. Over the period 1981–1991, the average annual revenue collected by the government from murta sales was Tk. 4,24,000 (Banik 2001). Only a small percentage of murta products is exported, the majority being consumed domestically. BSCIC (1992) reported that 175 sitalpati processing units manufactured products worth of Tk. 8.17 M (Tk. 70 = 1 US Dollar) at a production cost of

Tk. 4.3 M. Thus, murta production is financially attractive as an income generating activity. The monetary value and role in religious and culture activities make murta products an important component of Bangladeshi life (Banik 2001).

The export value of murta products is difficult to determine, with all the hand-made products out of cane, bamboo, murta and other materials being recorded under the single category of handicrafts. The export value of handicrafts was Tk. 51 M in 1979–80, increasing to Tk. 225 M in 1988–89 (BBS 1991). Since then the use of murta has expanded; the plant is now an important material for handicrafts and along with rattan and bamboo has become a merchantable product in the domestic and foreign markets. However, due to shortage of raw material the productivity and sustainability of the industry is uncertain (Banik 2001).

The socio-economic role of murta-based small-scale enterprises is still an unexplored field. The role of these enterprises and their problems and prospects to contribute to the national economy has received little attention. This study was designed to explore the present condition of murta-based enterprises, profitability of the various products and their role in the socioeconomic development of the country in general and of Gowainghat upazilla in Sylhet district in particular.

Research Method

The study was conducted in Gowainghat upazila (sub-district) in Sylhet district, which lies between $24^{\circ}55'$ and $25^{\circ}11'$ N latitude and between $91^{\circ}45'$ and $92^{\circ}07'$ E longitude. The upazila occupies an area of 486 km^2 and has a population of 2,17,170 (BBS 2001). Gowainghat, one of the 11 upazilas of Sylhet district (Fig. 1), was selected purposively because the people of this area are highly involved in murta-based small-scale enterprises. There are eight unions (areas) within Gowainghat upazila out of which Nandirgaon union was selected for this study. A reconnaissance survey was conducted to gain a general picture of the enterprises. Group discussions were held with key informants in the villages, including local leaders, local government officials, religious heads and forest department officials. Based on this preliminary survey a semi-structured questionnaire was developed to collect information regarding the socio-economic characteristics of the artisans, operational characteristics of enterprises (such as size of employment and capital, sources of finance, collection of raw materials), procurement of raw materials and marketing. Personal interviews were conducted during January to March 2008. A total of 225 artisans were found to be involved in murta based enterprises and 45 artisans were selected randomly for the study, a sampling intensity of 20%. The artisans responded positively to the survey because it was conducted in the afternoon leisure time. Moreover, they believed that this study would attract the attention of policy-makers and financial institutions that could provide financial support to them and create a more favourable business environment for the enterprises. A market survey was also conducted to determine the selling price of the products. The profitability of the products has been estimated in terms of net average profit by subtracting the cost of raw materials plus processing and transportation cost from the selling price of each product. The processing cost

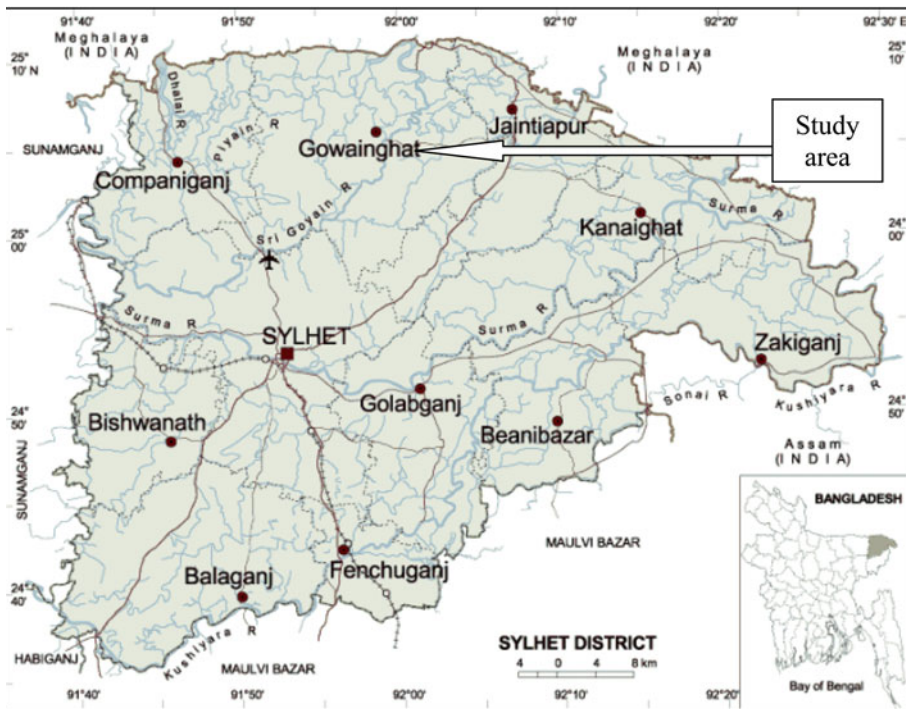


Fig. 1 Map of Sylhet district showing the study area

involves mainly labour cost. Data were also collected from secondary sources, including books, journal articles, brochures, thesis papers, research papers and websites.

Results and Discussion

Socioeconomic Condition of the Entrepreneurs

The socioeconomic condition of the study area is weak. The average family size is 6.3 while the male to female ratio is 100:107, which is similar to the gender ratio in the murta-based enterprises (100:109). About 37.7% people are aged 10 years or less, with 28.2% in the age class 11–20 years. Nearly 41.8% of the people involved in murta-based small enterprises fall in the age class 11–20 years. This indicates the young people are highly involved, perhaps because employment availability in this enterprise requires only technical knowledge rather than heavy labouring. The literacy rate of the involved people is 24.7% (27.6% for males and 22.1% for females). Most of the household heads are male (88.89%) indicating a male-dominated society. Only 17.8% of households have tube wells where 37.8% depend on ponds for drinking water and no families have sanitary latrines. This poor condition of sanitation and scarcity of clean drinking water result in various diseases

and consequently the artisans become weak degrading their potentiality of working capacity. About 94% of the households involved in murta-based enterprises, as entrepreneur or day-labourers; the remaining 6% are either service providers or agriculture day labourers. Most of the families have no land except their homesteads, the average area of which is 0.03 ha. The average annual income is Tk.65733, of which 62% comes from murta-based small enterprises; most of the remainder comes from agriculture, daily labour, and small businesses.

Collection of Raw Materials for Murta-Based Enterprises

Generally the people of the study area collect raw materials for murta-based enterprises from homesteads (most of which grow this crop) and local markets (in which small and medium businessman purchase murta in auctions conducted by the Forest Department). The Forest Department manages the fresh water swamp forest of Gowainghat upazila, in which murta is a highly important and frequently available species. The Forest Department also raises a considerable amount of plantation murta in the swamp forest. Local people also collect this raw material from the forest illegally to sell in the local market or use as raw material in murta-based enterprises.

Financial Analysis of Murta-Based Enterprises

A wide range of articles are manufactured in small-scale murta-based enterprises, including bed mats, prayer mats, dining mats, show pieces and wall mats. A mat manufactured from murta popularly known, as ‘Sylheter Sital Pati’ is also an important product of murta-based enterprises. Entrepreneurs manufacture articles considering the seasonal requirements, local market demands and availability of raw materials. The raw materials used in making murta products include murta, plastic, cane and colouring materials. The cost of manufacturing a product varies with its size and colour, ranging from Tk.127 for simple dining mat (of size 1.2 m × 0.9 m) to Tk.188 for colored bed mat (size 2.3 m × 1.8 m) (Table 1). Net average profit per article ranges from Tk.127 to Tk.250. As a percentage of input costs the net average profit ranges from 100% for simple dining mats to 133% for colored bed mats.

As indicated in Table 1, the articles manufactured in the murta-based enterprises are highly profitable. Profitability of colour prayer mats and colour bed mats is relatively high due to the high market prices of these products.

Simple bed mats are in demand in the local market as an essential article for the rural poor and their production is higher than any other articles. Colored bed mats are demanded in city market throughout the country. An average of 124 simple bed mats, 23 color prayer mats, 19 color bed mat and 39 other articles are made per household per year (Table 2) and the average annual expected income from selling those articles is Tk.40,617 which is 61.8% of average annual income of producer households.

Considering the other income sources of the artisans it is evident that murta-based enterprises strongly affect their livelihoods. These enterprises contribute 62% of artisan households income, much more than agriculture (15%), laboring (11%), small business (5%) or service employment (5%). Moreover, the average annual income

Table 1 Net average cost and profit per article (Tk^a)

Product type	Net average cost per articles (Tk.)	Average selling price per article (Tk.)	Net average profit per articles (Tk.)	Net average profit per input cost (%)
Simple bed mat (2.3 m × 1.8 m)	167	377	210	126
Color bed mat (2.3 m × 1.8 m)	188	438	250	133
Simple prayer mat (1.2 m × 0.9 m)	129	262	133	103
Color prayer mat(1.2 m × 0.9 m)	158	262	204	130
Simple dining mat (1.2 m × 0.9 m)	127	254	127	100
Color dining mat(1.2 m × 0.9 m)	133	270	137	103

a Tk. 70 = \$1 US

Table 2 Average number of articles sold annually and expected income

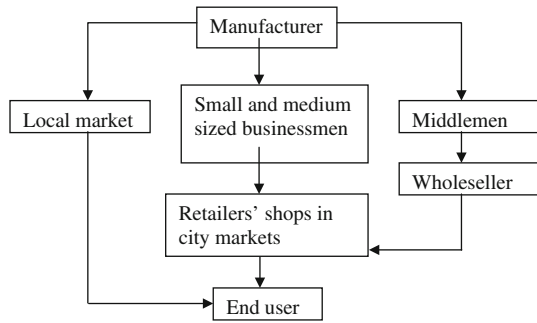
Article	Average sales (articles/household/yr)	Net average profit per articles (Tk.)	Expected income/year (Tk.)
Simple bed mat	124	210	26040
Color bed mat	19	250	4750
Simple prayer mat	12	133	1596
Color prayer mat	23	204	4692
Simple dining mat	16	127	2032
Color dining mat	11	137	1507
Total	205		40617

from murta-based enterprises is close to the national per capita income i.e., Tk.41930 (BBS 2008). Therefore as a supplementary income source murta-based enterprises play the substantial role in the artisans' livelihood. There is potential for the production system to be taken as the single most important income source in the region provided that the uninterrupted and adequate supply of raw materials is available.

Marketing of Murta Products

Marketing is often considered a major constraint to development of cottage industries (Bakht 1984). Smallness of the enterprises, poor financial position of the artisans along with scattered distribution of the enterprises poses serious problems for murta product marketing and raw material procurement. The artisans directly sell their product in the local market. Sometimes the entrepreneurs sell their product to small and medium businessmen who make purchases from many artisans and transport products to city markets to sell in retail shops (Fig. 2).

Fig. 2 Marketing channel of murta products



Poor communications and transport facilities often force small enterprises to sell their products through middlemen. Highly segregated markets and unequal bargaining power between buyers and sellers make trading profitable for middlemen (FAO 1995). When the artisans sell directly in the local market they carry the products as shoulder loads, this being a traditional practice in the study area. In rare cases they use rickshaws or vans to carry products to local markets.

Gender Role in Murta Based Enterprises

Both males and females are involved in murta-based enterprises. Males mostly takes part in raw materials collection. As murta-based enterprises are household-based, females are mainly responsible for the processing of raw materials, carrying out about 80% of the manufacturing work. Figure 3 illustrates mat making. Marketing is mainly performed by males.

Sustainability of Murta-Based Enterprises

Sustainability of the enterprises depends on a continuous supply of suitable raw materials, financial support, skilled artisans, effective marketing channels, an efficient pricing system and reliable demand.

A variety of factors pose threats to the sustainability of murta-based enterprises. Over-harvesting of murta from swamp forest managed by the Forest Department and from homesteads has been allowed to occur and the artisans have experienced an acute scarcity of raw material. In consequence, the output of many enterprises has decreased and in extreme cases the artisans have ceased production. Financial support is also an important factor for the sustainability of the enterprises. The artisans in the study area do not receive any financial support from government, NGOs or financial institutions. Lack of capital constrains artisans from increasing (and sometimes even continuing) production. Illiteracy of the artisans is another problem restricting their capabilities; they are not aware of their rights or even the problems they are facing. The rate of production depends to a great extent on the efficiency of the labour force. The artisans are not provided with any training by government or NGOs to develop their skills. Further, the entrepreneurs often receive low product prices due to exploitation by middlemen. Another threat for the

Fig. 3 A women is weaving sitalpati from murta



sustainability of the enterprises is substitute products with high decorative value. Sometimes synthetics or other products compete with murta-based products and ultimately the demand of these hand-made products may decrease. The sustainability of murta-based small-scale enterprises is under threat and can be ensured only by taking steps regarding all the sustainability factors, both by government and NGOs.

Conclusion and Policy Implications

Murta can play a vital role in the economy and environment of a country (Rashid et al. 1993). Murta can be readily cultivated on land that remains under water for long periods during the rainy season and remain wet even in the dry season and hence is not suitable for cultivation of other cash crops. Cultivation of murta is less expensive than for jute or rice, leading to a favourable economic return (Mohiuddin and Rashid 1988). Cultivation of murta along the roads, canals, ponds, lowlands, fallow lands and around homesteads can control soil erosion as well as having economic development benefits. Nowadays murta-based small-scale enterprises are under threat mainly due to the acute shortage of raw materials, but also lack of financial support for producers and weak marketing and pricing systems.

It is possible to develop these enterprises to a profitable international standard through increased cultivation of murta on private land as well as on government forest land. Increased training and awareness are needed to encourage people in

murta cultivation and murta-based small-scale enterprises. Based in the above analysis, some suggestions can be made:

1. Measures are needed to ensure a continuous supply of raw materials. These could include ensuring access of entrepreneurs to fresh water swamp forest managed by the Forest Department. For example, the murta growing area could be divided into a number of small compartments over which murta users could make individual bids.
2. In that local artisans sometimes collect raw materials from government forest illegally, a participatory management approaches may be adopted by involving them in the management of murta plantation. This will assist entrepreneur's access to raw materials while at the same time discouraging illegal felling and encroachment of forest land.
3. Development of an improved pricing mechanism for artisans which reduces the need for middlemen in the marketing of murta products would increase revenue of murta-based enterprises ensuring maximum profit.
4. The transport and communication system could be improved to facilitate marketing of murta products and reduce exploitation by middlemen.
5. Financial support measures are required by entrepreneurs, the government and NGOs, with credit access from financial institutions under simple arrangements.
6. Training programs are needed for the artisans regarding product specialization and development.

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