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Prospects of Developing Rural Economy through Production and Marketing of Sabai Grass (*Eulaliopsis binata*) and Rope in Paschim Medinipur District, West Bengal

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Abstract: Sabai Grass (Eulaliopsis binata) is a tufted perennial natural fibre grown in wasteland areas and rolling tracts of Paschim Medinipur, Bankura, and Purulia districts of West Bengal. In Paschim Medinipur it is abundantly grown in the western Blocks of Nayagram, Gopiballavpur-I, Binpur-II, Jamboni, Jhargram Blocks and in limited areas of few other adjacent Blocks. The indigenous and backward class communities living in these Blocks depend on this grass for their livelihood through cultivation and conversion of this grass into ropes of various grades. Sabai rope is popular for its strength, durability and flexibility and is used largely in construction industries as well as for craft making. The major part of the grass is however used in paper mills for pulp making. Sabai cultivation and rope making are considered today to be important components of the economy and culture of this region. The rope is traditionally prepared by hand twisting technique

and treated as a handicraft of importance in this area. Problems associated with Sabai cultivation and processing are: i) none of these activities in its present form is able to generate adequate earnings and hence lack of sustainable livelihood to the cultivators and artisans of rope making; ii) craft making, though indicates a prospective venture in this direction, has not been developed to that extent due to lack of entrepreneurship and technological innovation in proper forms and direction. This paper analyses the problems of Sabai cultivation and rope processing and attempts to forward development direction on raising productivity and production of quality Sabai grass and rope.

Keywords: Paschim Medinipur, household enterprise, livelihood, Sabai grass.

1. Introduction:

Eulaliopsis binata syn. Ischaemun augustfolium is a tufted perennial natural fibre belonging to family Gramineae (Sarkar & Chattopadhyay 2001). This grass fibre is commonly known as 'Sabai' or 'Babui' in West Bengal and Odisha, 'Baib' or 'Babiyo' in Uttar Pradesh (Porwal 2009, p.217) and also popular in folk language as 'Bhaabar'(Khare 2007, p.256). Sabai Grass is found to grow extensively on marginal and sub marginal rain fed uplands as a commercial crop (Basu, Bhadoria & Mahapatra 2007). The environmental tolerance rate of Sabai plant is high and it is mostly grown in tropical region. It prefers hot and dry climate and can also grow in the frost affected weather in the mid-Himalayas (Trivedi 2002, p.22). It is grown in the poor and degraded soil areas but does not survive in water logged condition. In fact Sabai grass is a draught resistant dry-land crop.

Sabai is grown in the states of West Bengal, Odisha, Madhya Pradesh, Uttar Pradesh and Jammu & Kashmir in India. In West Bengal it is cultivated in waste land areas and is naturally grown in hilly and rolling tracts of Paschim Medinipur, Bankura and Purulia Districts. Sabai is cultivated both in private lands and vested lands and is also grown in encroached forest lands inside coppice forests and plantation areas. In Paschim Medinipur, it is grown extensively in the Blocks of

Nayagram, Gopiballavpur-I, Binpur-II, Jamboni, Jhargram and in limited areas of a few other adjacent Blocks.

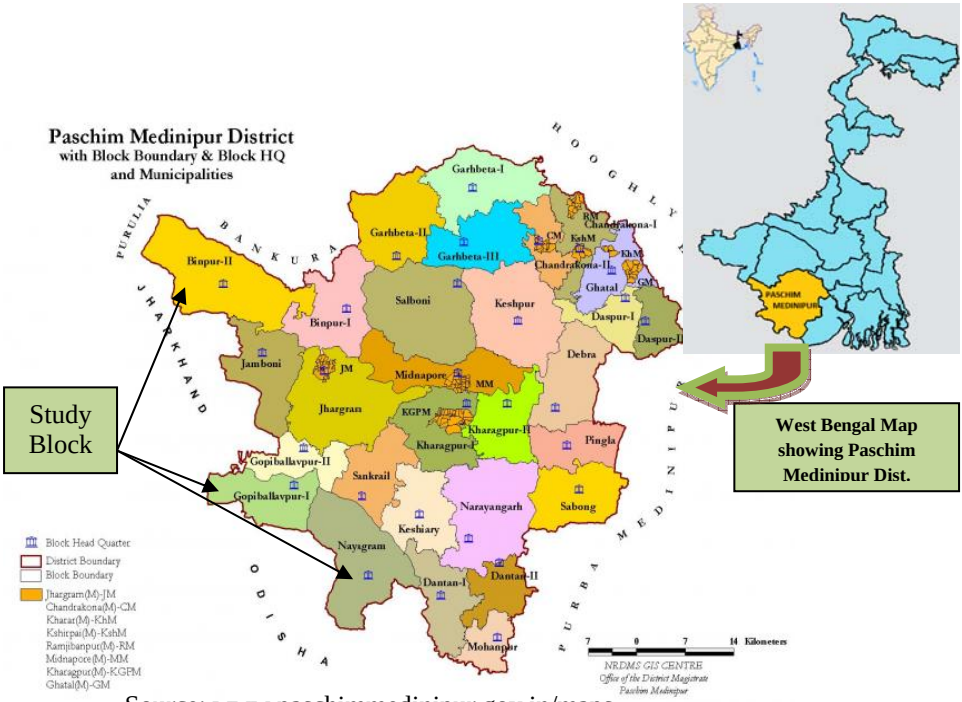
The principal use of raw grass is for making paper pulp in paper mills while other important use involves rope making for various purpose of construction including thatching and home furnishing (Singh, Mathur, & Mehta 1968, pp.11-13; Gupta, Agarwal, & Nirmal 1995, pp.1124-1129).The indigenous and backward caste community groups of these areas who form the lowest economic strata depend on this grass for their livelihood by converting the grass into ropes of various grades. Sabai rope is popular for its strength, durability and flexibility and is used as principal raw-material for making baskets, mats, stools and traditional cots or 'Charpoy' or 'Manja' etc. Rope is made by hand twisting techniques by the villagers and thereby Sabai rope is treated as a handicraft. This hand crafted rope is known to be used for decades for tying of bamboo and wood in construction industry. Rural households use this rope for tying of cattle and other domestic animals too. Cultivation of Sabai grass and appropriate marketing facility help to get remunerative price and hence improve the socio-economic condition of the people living in the wastelands and degraded forest fringe areas**.** Thus, raising production and productivity of grass and rope, and efficient marketing of raw grass and processed rope, besides organisation building and institutionalisation of the entire system can assure increased income and improved livelihood to thousands of rural families involved with Sabai based activities.

2. Areas of Concentration of Sabai Based Activities.

The Blocks of Paschim Medinipur where Sabai cultivation, rope twisting and crafts making are concentrated are Nayagram, Gopiballavpur-I and Binpur-II. Though Jamboni, Jhargram and few other adjacent Blocks grow grass on smaller areas, their share in rope and crafts making is limited (Map-1). The three Blocks of Nayagram, Gopiballavpur-I and Binpur-II share 85% of the total Sabai growing area and involve 81% of the working families in its cultivation and processing. In the said three Blocks about 42% of total families depend on Sabai based activities totally or partially for their livelihood. The above information clearly indicates that Sabai cultivation and

processing are concentrated in the said three Blocks and hence studies on Sabai production, processing and marketing have been principally focused through analysis and interpretation of primary and secondary information that are collected from these three Blocks.

Map 1: Showing Study Blocks under Paschim Medinipur District, West Bengal State



Source: www.paschimmedinipur.gov.in/maps

Today, in view of the agro-climatic factors and cultural compatibilities of Western Blocks of Paschim Medinipur, Sabai cultivation and rope making have taken a sound foot-step in the economy and culture of people particularly in the above Blocks vis-a-vis Paschim Medinipur District in general. The situation has now taken a shape that in these areas the culture and cultivation of Sabai cannot be avoided, neither the livelihood of the people involved could be improved with the operation and management as are in practice today. Alternative opportunities of sustainable livelihood generation of the people in these areas with their existing capabilities and constraints are

not so promising. This calls for a thorough study on the pros and cons of Sabai cultivation, rope making and marketing for growth and development of Sabai industry in general and improvement of livelihood of the Sabai growers and rope makers in particular. From literature survey and preliminary field investigation it becomes clear that there are opportunities for extension of land under Sabai cultivation and intensification through productivity rise with application of improved agronomic methods. It has also been observed that rope making as first hand processing could be further extended and increasing number of villagers could be involved. But neither extension of Sabai area nor increasing participation in rope making could assure sustainable livelihood to the people involved. Rope making however indicated improved livelihood through productivity rise and quality improvement by means of application of new innovative technologies.

3. Information Base & Methodology:

The population of the study area includes stakeholders associated with production and marketing of Sabai grass and rope as well as their end customers. Household and market level field surveys were conducted to collect the relevant data from the artisan-producers and market functionaries. Relevant data have been obtained from 330 artisans and 25 traders. Telephonic interview was also done with the distant wholesalers and retailers from different states like Uttar Pradesh, Jharkhand, Bihar, Rajasthan, Haryana, etc. Artisans are selected from the target villages in the study area through simple random sampling technique. Intermediaries and traders are selected from different levels in the marketing chain. Two different Interview schedules, containing a set of predetermined questions are used to collect the primary data from artisans and traders. Apart from this, one to one in depth interaction and a semi-structured focused group discussion were made in different village centres and periodic markets to record the responses and views of the artisans and traders.

4. Socio-Economic Status of Sabai Growers and Artisans:

The structure, process and function of Sabai industry are influenced by several demographic, social, economic, cultural and psychological factors of the participants and stakeholders of Sabai based households

industry. Among the surveyed households, 66.67% belong to Schedule Tribe, 16.97% belong to Schedule Caste categories and the rest 16.36% belong to other social groups. In the present study, it is observed that Sabai cultivation and related craft processing is more concentrated among the disadvantaged social groups of the society. The high level of dependency of Schedule Tribe (ST) community on Sabai based activities is widely noticed. Both females and males in the age group of 36 to 50 seem to be dominating the Sabai craft industry in the villages.

Only 36 percent respondents are either literate or presently continuing with their education, but rest of them, i.e. 64 percent are illiterate. It indicates that more illiterate people are engaged in Sabai based activity. Educational status depicts that among 120 literate respondents 43% completed or studied up to primary level, 42% finished middle school and 12% reach or completed high school level. Very few, only 2% percent respondents could reach or completed higher secondary or higher level of education. Higher unemployment rate is found among middle and high school educated members of the sample households.

Around 63% households possess either agricultural land for food crop farming or Sabai growing land; the rest (37%) of households do not possess any type of land, means they are entirely landless. Around 42% households possess Sabai growing land with an average area of operation around 0.16 ha. Out of 42% Sabai landholding households around 83% belong to ST community, 7% belong to SC community and 10% belong to other social groups. It is evident from this study that more tribal respondents are involved in Sabai farming. About 15% respondents of Nayagram and Binpur-II Blocks grow Sabai grass in the encroached forest areas. The average land holding size of this type of farm is around 0.14 ha. Cultivation and collection of Sabai grass and twisting of rope and selling it to local market is the primary occupation of the 66.97% sample respondents and the rest (31%) considered this activity as secondary occupation. In response to the question on the reasons for adoption of Sabai based activities as their main source of livelihood, it is revealed that they preferred and ranked Sabai based livelihood as their first option or choice due to limited or non-

availability of regular employment in any other economic activities in the local or adjoining areas. Availability of raw material i.e. Sabai grass from local areas or markets is the second important reason for adoption of Sabai based livelihood options.

Almost all the survey households are engaged in Sabai based activities and their average gross income per family per year is Rs. 10,340. Around 38% of the total gross family income is generated from Sabai related economic activities. The mean gross annual earnings of the ST households is found to be Rs. 25,555 followed by SC households with Rs.24,936 while that for other category households stands at Rs. 36,411. The analysis clearly shows that the annual earning levels of all categories of households are low and inadequate for livelihood maintenance.

5. Economics of Sabai Cultivation, Value Addition and its Feasibility:

Sabai is a long term crop and so the cost of cultivation, yield and post harvest expenses etc. vary over different crop years. To assess the economic viability of cultivation of Sabai, the cost calculation has been done for 12 (twelve) years since its plantation. The cost of establishment of crop in the first year includes different input costs like root slips, manure (FYM), fertilisers, manpower, tillage operation and tools and tackles etc. In 1 hectare of Sabai cultivation, around 400 man days are generated in 12 years i.e. 33 man days per year for plantation, maintenance, harvesting, and transportation job.

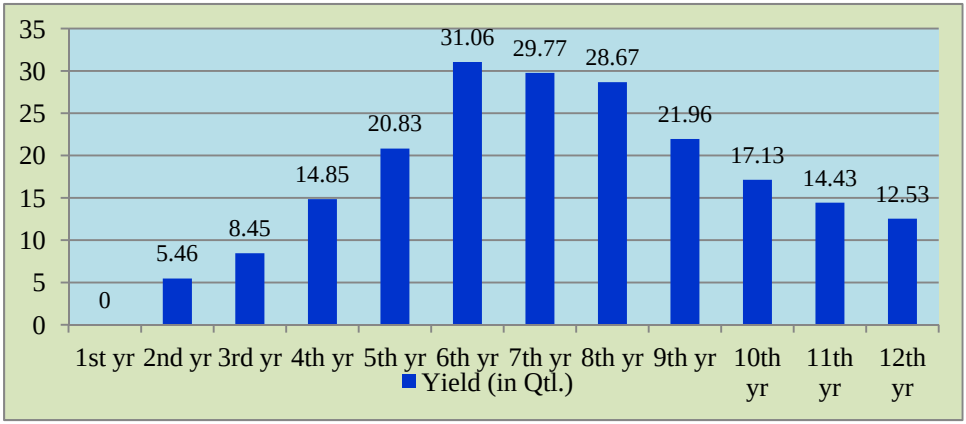
Table1: Cost of Sabai Cultivation in three Different Blocks

Types of Inputs	Costs in Different Blocks (in Rs.)			Average
	Nayagram	Gopiballavpur-I	Binpur-II	
Crop Plantation (1st year)	9,650	9,650	8,435	9,245
Crop Maintenance (1st to11th year)	2,255	2,255	1,956	2,155
Crop Harvesting (2nd to12th year)	29,693	27,954	19,622	25,756
Transportation (2nd to12th year)	2,037	2,037	2,037	2,037
Total	43,635	41,896	32,050	39,193

Source: Field Survey

On calculation of costs of all inputs for 12 years, the average cost of cultivation per hectare comes to Rs. 39,193 and the total yield becomes 205 qtls/ha. (Chart-1) and thus the cost per quintal of product is estimated to be Rs. 191.19. In 12 years of crop tenure, the grower invests Rs. 9,245/ha for crop plantation, Rs. 2155/ha for crop maintenance, Rs. 25,756/ha for harvesting and finally Rs. 2,037 for transportation. As such harvesting cost is accounted to be the highest component of total cost. This is because the Sabai cultivation is highly labour intensive and hence growers have to spend maximum expenses towards manpower. However, except plantation, for all other operations the growers majorly employ home labour which makes their actual cash investment to be tolerable and low.

Chart 1: Yield of Sabai Grass in 12 yrs. Crop Tenure



Source: Field Survey

It is reported by the farmers that the plants give yield till sixteen to seventeen years, but for better economic viability, new planting is preferred after twelfth crop year. From the 13th crop year onwards extraction is not economically viable because yield of grass significantly decrease. The average net returns per year on the basis of 12 years cultivation has been found to be Rs.11,189/ha. It may be noted that in the 5th crop year, the return exceeds the accumulated cost up to that year. A discounting rate of interest 10% have been taken for accounting of time value for money. The discounted cost of plantation is found to be Rs.25070 and discounted benefits realised in 12 years is

Rs.87230 with a discounted net benefit of Rs.62160. To test the profitability and economic viability of Sabai cultivation, the input-output ratio or benefit-cost ratio have been worked out. The ratio indicates that in one rupee investment over the whole crop tenure, farmers get return of Rs. 3.48 Sabai cultivation and it is found to be profitable and economically viable in 12 years tenure.

Table 2: Cost and Revenue per hectare of Sabai cultivation in 12 years Tenure

Particulars	Amount (in Rs.)
1. Undiscounted Cost	39,193
2. Undiscounted Benefit	1,73,667
3. Undiscounted Net Benefit	1,34,273
4. Discounted Cost	25,070
5. Discounted Benefit	87,230
6. Discounted Net Benefit	62,160

Source: Computed from Survey Data
Benefit-Cost Ratio (B/C) = 3.48

It is observed that value added from Sabai cultivation remains in the range of Rs.12000 to Rs.15000 per year per hectare approximately (including home labour) which indicates that all the cultivators are living below poverty level as cultivators. Some of them might attain the APL category with their additional labour in rope making and craft making for raising their income at least to the extent of Rs.30000 per family per year. Productivity analysis of Sabai cultivation confirms that the above level of value addition could be reached when the holding size of the farm is above 2.5 ha. which is never attainable. Thus, it is clear that cultivation alone as a separate activity cannot help sustain the livelihood of the Sabai dependent families as is the situation now. It is also indicative that Sabai culture with its multi-directional activities like cultivation, rope making, processing, craft making and fabricating other utility items including marketing, organisation building and institutionalisation of the entire effort can only bring a bright future in this venture.

6. Sabai Rope Making as Primary Processing Activity

Rope production remains as the most important processing activity based on Sabai. Workers of this home based processing unit are household members and the average strength of the workers is around

3.44 persons per unit or per family including minors. This activity remains located in the house premises or in the places of congregations of villagers. It involves entirely physical labour which is most commonly contributed by family members. It also needs initial treatment of grass like drying, screening, grading, etc. Initially the rope is made by hand twisting and thus it is treated as handcrafted products and for that the producers are called artisans. It is usually a hereditary practice and skills of the workers are transferred from parents to son or daughter or from the master to new learner.

Quite a small amount of capital is required in this type of Sabai rope making units at domestic level. Some other simple hand tools like knife, scissors, knitting hooks and pins, etc. are used in the production unit. Besides, 'Ghurru' or locally fabricated twister is used by processors, which is usually available with a cluster of villagers used at each other's convenience. The rope which remains moisturised for favour of twisting is usually sun-dried on open roads or premises and after that, before bundling, it is rubbed against tree trunks for smoothening. Majority of the units arrange their nominal fixed and working capitals from their own sources. Though traditionally such capitals are used to be taken often from moneylenders or advance purchasers, the practice is gradually fading out due to interventions by Panchayats, NGOs, local leaders, etc. However, a few cases of debt-traps are believed to be found where money taken for craft making was known to be used for other purposes. It is surprising to see that till now the system of 'Bhatua' is ongoing as a consequence of such debt trap cases.

Raw material for rope making units is usually sourced locally or from neighbouring areas. In this district the average production of rope per household unit is 3.75 qtls/per year. Rope making units generate subsidiary or part-time employment and provide supplementary income to the family workers. Women constitute the main workforce in these manufacturing units. Around 52% female workers devote on an average 2 to 4 hours, 39% devote 5 to 7 hours and 9% devote less than 2 hours in a day. The average workforce participation is 3.44 numbers per family including all full time and part-time workers.

March to mid-June is the peak season and July to mid-September is the lean season for Sabai rope making activity. Weekly each family unit produces on an average 10 to 12 kg of rope in the lean season and 20 to 25 kg in the peak season. Each high skilled and experienced worker produces on an average 3 to 4 kg while low skilled worker produces 2 to 3 kg of finished rope in 6 to 7 hours of work a day. On an average 94 man days of 8 hours duration have been generated by each manufacturing unit (household) per year since most of them also remain involved as cultivator of marginal holdings or as agricultural labourer for wage earning. Productivity of the units and participation of workers are linked with the location and distance of the market. It has been observed that majority of the artisans of Binpur-II Block spend a full working day per week for collection of input materials and marketing of outputs whereas artisans of Nayagram and Gopiballavpur-I spend more or less half working day for the said purposes. The reasons for such constraints at Binpur-II may be due to location of very few market centres, inconvenient communication network and unfavourable terrain conditions.

The rope making household units are linked with forward and backward marketing channels in an unorganised way for input supply, distribution of outputs, information source, monetary exchange, etc. LAMP under West Bengal Tribal Development Cooperative Corporation was earlier the only marketing and promotion organisation but today no other organised institution is found functioning to provide forward and backward linking channels in Sabai economy. Middlemen, wholesalers, village assemblers or peddlers are the main disposal channel functionaries found working in supply chain network. In most cases they also play the role of informal financial institution with the motive of higher margins in their favour.

7. Economics of Rope Production

In terms of production cost, a very negligible amount of fixed cost has been identified in all the rope production units. Working capital includes raw-material cost and marketing expenses only. On an average one family produces around 10 to 12 kg of rope per week in favourable seasons. Table 3 shows that total cost of production for 10 kg rope is

around Rs. 315.00, which includes fixed cost of Rs. 2, raw-material cost of Rs.308 and meagre marketing cost of Rs. 5.

Table 3: Cost of Production of 10kg Rope by Two Different Categories of Production Units

Particulars	Unit-I (Non Sabai growing families)		Unit-II (Sabai growing families)	
	Rate	Amount (in Rs.)	Rate	Amount (in Rs.)
a) Fixed cost	@Rs.0.20/kg	2.00	@ Rs.0.20/kg	2.00
b) Raw-material cost	11 kg @ Rs.28/kg	308.00	11kg @ Rs.22/kg	242.00
c) Marketing cost	@ Rs.0.50/kg	5.00	@ Rs.0.50/kg	5.00
d) Labour cost	*	0.00	*	0.00
e) Total (a+b+c+d)		315		249
f) Sale value	10 kg @ Rs.52/kg	520	10 kg @ Rs.52/kg	520
g) Value Addition (Actual Labour Earning) (v-iv)		205		271

Source: Field Survey

*Labour cost is not included in total cost since home labour earning is taken as a component of value addition.

From the table it is clear that the material cost accounts for 98% of total cost. Due to scarcity or non-availability of alternative job opportunity in other sectors the artisans are compelled to depend on home labour. Thus the labour input in rope manufacturing unit may be treated here as non-cash implicit cost. In fact the value addition from such a household level rope making venture should be taken as Rs. 205 which in another sense is the existing wage earning for the family unit per week. For Sabai growing families the aggregate value addition from rope making will be Rs. 271.

8. Marketing and Market Centres:

Sabai grass and rope are primarily disposed of through rural periodic market centres, locally known as 'Hat'. Baligeria 'Hat', Kaharikamathanai 'Hat', Bara-Negui 'Hat' and Dhumsai 'Hat' and Keshorrekha 'Hat' of Nayagram Block, Gopiballavpur 'Hat' of Gopiballavpur-I Block, Belpahari 'Hat' and Chakadoba 'Hat'of Binpur-II Block and Fekoghat Hat of Gopiballvpur-II Block are the nine major market centres in the study region (Table- 4).

Table 4: Primary Sabai Market Centres in the Study Region

Sl no	Name of the Market Centres (Hat)	Name of the Blocks	Days of Seating	Name of the Sub-Division	Name of the District
1.	Baligeria	Nayagram	Friday	Jhargram	Paschim Medinipur
2.	Kharikamathani	Nayagram	Wednesday	Jhargram	Paschim Medinipur
3.	Bara-Negui	Nayagram	Tuesday	Jhargram	Paschim Medinipur
4.	Dhumsai	Nayagram	Tuesday/ Saturday	Jhargram	Paschim Medinipur
5.	Kesherrekha	Nayagram	Thursday	Jhargram	Paschim Medinipur
6.	Gopiballavpur	Gopiballavpur-I	Sunday	Jhargram	Paschim Medinipur
7.	Belpahari	Binpur-II	Wednesday	Jhargram	Paschim Medinipur
8.	Chakadoba	Binpur-II	Sunday	Jhargram	Paschim Medinipur
9.	Fekoghat	Gopiballvpur-II	Tuesday	Jhargram	Paschim Medinipur

The main processed product, Sabai rope is sold and sent to different markets of states like Orissa, Bihar, Jharkhand, Uttar Pradesh, Rajasthan etc. from these local 'Hats' through '*Mahajans*' or wholesalers. Sabai grass is sold through identified major disposing channels whereas Sabai rope is sold through several sets of marketing channels. An important feature of Sabai rope marketing channels is that this commodity moves to selected towns and market centres of Northern, Eastern and Central region of India and subsequently are distributed to rural retailers through medium size semi-urban or district level market centres. The district level wholesale market centres of distribution work as transit point and thus play an important role in the entire marketing network. Some of the state-wise district level market centres of Sabai rope are mentioned in Table 5.

To understand the volume of operation, profitability, network of flow, extent of market coverage and characteristics of marketing channels a Traders Level Survey was conducted through questionnaire schedule and interview method. Sabai growers as well as rope and crafts producers make available their products to the end consumers through various distribution channels. Channel actors or intermediaries

play crucial roles for creating multi-nodal links between producers and end-users. Producers of Sabai industry depend on conventional distribution system which forms a fragmented marketing network in which the channel functionaries are connected with each other in an unorganised way.

Table 5: Important Transit Market Centers of Sabai Ropes in Different States

Sl no	Name of the Places	Name of the State	Sl no	Name of the Places	Name of the State
i	Balia	Uttar Pradesh	vi	Allahabd	Uttar Pradesh
ii	Gajipur	Uttar Pradesh	vii	Lucknow	Uttar Pradesh
iii	Yousufpur	Uttar Pradesh	viii	Daltongunge	Jharkhand
iv	Kanpur	Uttar Pradesh	ix	Chapra	Bihar
v	Agra	Uttar Pradesh	x	Muzzafarpur	Bihar
xi	Darbhanga	Bihar	xv	Baripada	Orissa
xii	Patna	Bihar	xvi	Raigarh	Madhya Pradesh
xiii	Gopalgunge	Bihar	xvii	Biharsarif	Bihar
xiv	Jaipur	Rajasthan			

9. Operational Characteristics of Grass and Rope Markets:

Marketing of Sabai grass and rope is carried out mainly by informal agents or intermediaries who bring these products from village level to primary periodic markets (Hat). These intermediaries are locally known as *'Paikars'* and *'Phorias'*. They are familiar in other names such as village level paddlers, collectors, assemblers, fellow producer cum traders etc. In every village or for a cluster of villages these types of channel intermediaries are found involved in distribution network. Village level assemblers are mainly independent informal business owners who collect grass and ropes from different village households. These types of intermediaries have an important role in linking the remote villages in spite of existence of very poor transport, road and communication facilities in the total network. Such villages are usually located in the hinterland, mainly in the forested or hilly and other difficult terrain areas. The average lifting of rope by this type of intermediaries varies from 2-8 quintals per week. There are around 225 to 250 village level assemblers who are engaged with Sabai marketing chain in the study region.

These middlemen are linked to each other with informal contacts and they carry or exchange the market information from one market to

another. Most of them use by-cycle; very few of them use motorbike or small motor van as mode of transport of Sabai products. Sometimes rope makers bring their product to such middlemen's houses as well. The first line Sabai grass and rope producers are exploited by these primary traders in the remote areas of the study blocks. The grass growers or rope makers have to rely on these middlemen to sell their products. Middlemen spread their monopoly in remote villages and exploit the craftsmen by paying low prices. Sometimes craftsmen are compelled to take loan or credit from these middlemen by way of advance purchase at lower prices to maintain their daily need. Taking this opportunity, the middlemen force the producers to sell their products in a bare minimum price. Under the above circumstances and facts the producers are inhumanly exploited due to the following reasons:

i. long distance of periodic market (weakly Hat) from the house,
ii. low self confidence and fear to communicate with outside traders or wholesalers in the village market,
iii. unavailability of own means of transport mode like bicycle, tricycle, trolley van etc.,
iv. motive to save hired transport cost,
v. availability of loan/credit facility at times of distress in the family,
vi. creation of linkage with urban doctors or hospitals for health services,
vii. development of contact with other middleman for livestock and NTFP marketing etc,
viii. reluctance due to laziness, low level of empowerment and alcoholic instincts,
ix. motive of instant cash income after sell.

It has been realised from the market survey that many producers follow selective type of distribution to sell Sabai based products. The producers follow such type of distribution because they want to sell their product to the previously known persons who may be commission agents, village assemblers, wholesalers or any other known intermediary. Under this distribution strategy the producer selects specific market centres and chooses selective intermediaries within a

geographical setting. Most of the grass and rope producers sell on an average 20-30 kg grass or/and 10-15 kg of rope per week from their doorstep or from the rural periodic market place. Large growers of Sabai grass with yearly production of 20 to 25 quintals sell their crop to fellow producer cum traders or pre-harvest contractors or wholesalers in bulk volumes. It has been found from the survey that different producers show their preference in choosing different first line traders. On the basis of their response, an attempt has been made to understand their preference level on trader selection. Among the intermediaries the '*Phorias'* or commission agents are the most preferred first line traders (Table-6).

Table 6: Most Preferred First Line Intermediaries

Sl no	Types of first line intermediary	No of Respondents (%)
1.	'Phoria'/ Commission agents	159 (48.18)
2.	Wholesalers/Aratdar	62 (18.79)
3.	Village assemblers/Paikar	86 (26.06)
4.	Village shop	23 (6.97)
	Total	330 (100)

The total production of rope by 330 surveyed households is around 1236.85 tons/year. Rope producers initially sell their produce to the grass root level intermediaries who are technically termed as first line buyers. Out of the total rope production only 626.15 tons i.e. 50.63% rope is primarily sold through commission agents or '*Phorias'* followed by 344.89 tons i.e. 27.88% and 39.58 tons i.e. 3.20% through village assemblers and village shops respectively. Producers directly sell 214.23 tons i.e. 17.32% of the total production to the primary level wholesalers or '*Mahajans'* in village hat while only 12 tons i.e. 0.97% to the local end consumers. It has been observed from the field survey that the price which is offered to the rope producers by the village assemblers is lower than that of local market rate and the price range differ from Rs.4 per kg to Rs.8 per kg. The craftsmen get little benefit when the price of the product seasonally increases in the peak season or when the demand of product is high in the market. The middlemen traders prevent the flow of price information from local market to producer's level. Wholesale traders or 'Mahajans' are the independent business owners. These traders are the main market linking actors who

connect the local market with the urban external market. This type of traders has good contact with the regional and national level traders. It has been realised from the survey that 'Mahajans' or big traders dominate the entire local level market chain and control the demand-supply condition through unauthorised holding and financial power.

10. Price Spread Analysis:

From a simple price spread analysis it is observed that at the starting point the growers get a normal price of Rs.18 to Rs.22 per kg when traded at local periodic market (at 2013-14 prices). Often drastic shifts in prices with 50% to 60% downward drifts are noted when distress sell through advance purchase is made. This happens due to advance receipt of money to meet some unavoidable difficult odds faced by the family or self. Sometimes due to inconveniences in marketing the grower sells the commodity from door step to opportunist village assemblers who pay 30% to 40% lower price than current market rate. Landless local rope producers or craft makers procure this raw-material from nearby periodic market at the rate of Rs.25 to Rs.28 per kg sold by the local traders or 'Phorias' who earn nearly 50% profit margin. In case of rope makers the sale price per kg of rope in the same periodic market goes from Rs.43 to Rs.45 per kg, thus fetching a labour earning of Rs.16 per kg which also assumes the production loss to the extent of 10% of the raw-material. The local level wholesaler or 'Mahajans' on the other hand dispose of their stock at the price rate of Rs.46 to Rs.49 per kg thus making an approximate weekly earnings of Rs.1.50 to Rs.2.50 per kg excluding marketing cost. On an average such market actors transacts about 15000 to 20000 kg of rope per week thus gaining a total earning of Rs.30000 to Rs.40000 per week. It is learnt from the dealers that the regional and national level big traders who transact with external retailers or industries usually sale the rope at price rate varying from Rs.50 to Rs.53 excluding marketing cost. Thus the margin per kg becomes Rs.2 to Rs.3 with which they approximately transact about 50000 to 60000 kg per week. The external retailers fix the final consumer price at Rs.55 to Rs.60 including about Rs.1 per kg as marketing cost. However they usually dispose of rope to the extent of only 50 to 100 kg per week.

11. Some Suggestions on Grass Cultivation and Marketing

In Sabai grass cultivation the holding size of the farmers has been found to be small and marginal. For farming operation mostly home labours are engaged and labour payment is not done as cash payment. The major suggestions put forward for this activity are:

i. Cluster farming approach with use of home labour offered by a small group of households should be considered as ideal for marginal and small land holders.
ii. Productivity rise should be attempted through yield increase and price sensitive marketing. In the initial years inter-cropping with agronomically suitable crops may be taken up for aggregate productivity rise.
iii. Advance grass sale at low prices from producer's door steps, distress sale for relief against different adverse and difficult odds in the family should be totally stopped for raising net earnings of the cultivators.
iv. Quality improvement of grass for fetching higher prices should be attempted through timely field maintenance and manuring besides application of relevant agro-technological operations.

12. Recommendations on Rope Making and Marketing

i. Productivity rise could be made a reality with technological intervention in one hand and skill training on the other.
ii. Higher production target could be attained by poor rope makers by making available adequate institutional finance and other inputs to them.
iii. In the said effort, Artisan's organisation at cluster level will be quite effective.
iv. Quality improvement of rope with drying, screening and machine twisting is necessary.
v. Innovative rope making machines should be made available to rope makers SHGs for productivity rise, higher net earning and reduction of ergonomic adverses.
vi. Grade specific price fixation and setting floor price (support price) by cultivators and rope makers are important steps for Sabai rope marketing.

13. Conclusion

The foregoing analysis of production, productivity and marketing of Sabai grass and Sabai rope indicates that cultivation of Sabai grass in the background of existing pattern of holding size distribution cannot offer a sustainable livelihood to Sabai farmers. For sustainability, a farmer has to possess at least 2 hectares for Sabai growing which is never attainable to the owners of existing farmers. However, it is possible to attain a targeted sustainability if additional earning is accrued through value addition from rope making by the family members. Depending on number of family members (males and females), composite skill available with the family members, their capacity to afford time per week and also their capacity to invest from family or institutional sources, some competent household level enterprises could be promoted for Sabai cultivation and rope making. Alternatively such efforts may further be strengthened through rope making only by using locally purchased grass as raw material and application of updated technological inputs like introduction of innovative rope making machine, improved rope twister, etc besides quality improvement of rope through bleaching, dying, deodorising, etc. Analysis of marketability and market demand of the product remains to be another important action in this effort of productivity rise vis-a-vis sustainable livelihood generation. Another step forward in this direction of sustainable livelihood is obviously craft making from Sabai which calls for several other advanced steps for entrepreneurship building.

References:

Basu, M., P.B.S. Bhadoria, & S.C. Mahapatra. 2007. "Growth and Yield of Sabai Grass (Eulaliopsis binata) Under Two Cropping Patterns with Horticultural Crops in Lateritic Fallow Lands of India." *Journal of Plant Sciences, 2.1*: 118-122

Gupta, R. K., M.C. Agarwal, & K. Nirmal. 1995. "Statistical Evaluation of Grass Yield from Sabai [Eulaliopsis binata (Retz.) Rubb.] on Bouldery Riverbed of Doon Valley." *The Indian Forester, 121.12*: 1124-1129.

Khare, C.P. 2007. *Indian medicinal plants an illustrated dictionary.* New York, USA: Springer Science + Business Media.

Porwal, M. C. 2009. *Remote sensing analysis of environmental resources for planning and development.* New Delhi: APH Publishing Corporation.

Sarkar, S. K. & R. N. Chattopadhyay. 2001. "Role of Sabai Grass (Eulaliopsis binata) for Sustenance of Forest protection Committee Members." *The Indian Forester*, 127.7: 737-742.

Singh, B., H.N. Mathur, & S.S. Mehta. 1968. "Bhabar Plantation on Wastelands in the Sub-Himalayan Tract for Paper and Rope Making Industry is a paying and Protective Landuse." Proceedings of the Symposium on *Forests and Forest-based Industries (*Abs No.28: p. 97) conducted by Society of Indian Foresters, Dehra Dun at Forest Research Institute, Dehra Dun, on November 11, 1968.

Trivedi, B. K. 2002. *Grasses and legumes for tropical pastures.* Jhansi, India: Indian Grassland and Fodder Research Institute.