

Khandua Sarees & Fabrics : Tradition and Pride of Orissa

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&

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Preface

The entrepreneurial history of handloom production in the country has been traced back to even as early as Rig Veda, when the hiranya (gold cloth) existed in the society. Village industries and handlooms were well integrated into the rural economy and the whole organisation was a part and parcel of socio-cultural fabric of the society. The social traditions, ethos and values were reflected in the handloom products. The handloom products, which have survived against the competition from machine made cloth, represent the rich artistic traditions of our country.

Globalised economy has contributed to the ever-increasing competition among the developing nations. Due to this, the traditional crafts of the country are under threat from the neighboring countries by way of replication of the traditional items. Trade Related Intellectual Property Rights (TRIPS) as a part of agreement signed under the World Trade Organisation (WTO) show a way to safeguard the interest of the producers. As part of their endeavor this study has been carried out to register the Khandua Sarees and fabrics under Geographical Indications Act.

The study has been arranged in nine chapters the **Chapter-1** principally elaborates the overall handloom sector of the country and Orissa. The **Chapter-2** brings about the craft history. The **Chapter-3** identifies the geographical location wherein the craft exists at the district level. An in-depth profile of the products being produced in the centres is discussed in **Chapter-4**. **Chapter-5** discusses the production process involved in making the world famous Khandua sarees and fabrics. An attempt has been made to cover all parts of the production process and to provide the illustrations. The uniqueness of the product are detailed in **Chapter-6** along with the intricacies involved in making of motifs and preparation of the designs. The art of weaving in Khandua vis-à-vis other ikat weaving centres of the country are detailed in **Chapter-7**. The statistical overview of the cluster and socio-economic profile of the stakeholders of the craft are discussed in **Chapter-8**, while the impact of globalisation on the product is discussed in the remaining chapter.

We hope this study and documentation work will form the basis for preparing an application for protection of the intellectual Property Rights of the weavers who have woven golden art for this country.

Place : Mumbai

Date : 25.06.2008

(Dr P Nayak)

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Chapter - 1

Handloom Sector in India : An Over View

1.0 Introduction :

The adoption of a focused, yet flexible, holistic approach for the handloom sector has been long felt in an environment of free trade opportunities and growing competition from the machine woven fabric industry. A need has also been felt to empower weavers to chart out a sustainable way for growth and sustainable way for growth and diversification, in line with the emerging market trends. Orissa's rich & diverse cultural heritage is aptly reflected in it's hand-woven. Vibrant and innovative, the design elements revolve around the purity and simplicity of life of its people. Orissan hand woven is known around the world for the tie and dye technique, fine fabric and vegetable dyes. Hand weaving as practiced in different parts of the state are uniquely distinct and inspiring. But it is felt that in this advance technology era where changing takes in every moments, the designs and others have been theft by the opportunists to restrict the bread and butter of the common weavers by taking the mileage of simplicity of the weavers

1.1 Handlooms in India :

Of all the arts and crafts in India, hand-woven textiles are probably the oldest and most widely recognized. Providing direct and indirect employment to more than 30 lakh weavers, handloom industry is the second largest economic activity in India next only to agriculture. Handlooms contribute to nearly 23% of cloth production in the country. On the other hand it plays a major role in Indian economy in view of its significant contribution to GDP and foreign exchange earnings. However, with the increasing onslaught of changes in fashion, the handloom sector has been suffering significantly being relatively isolated and constrained for incapability to adopt required technology, improve productivity and access to market in an efficient manner.

Handlooms play a significant role in the Indian economy owing to their rural employment potential, next only to agriculture, and also for their contribution to exports from the country. Since 1960 and up to 95, the share of handloom production in the total textile production remained more or less constant at about 23%. However after 1995, it started declining and is pegged at 13% during 2004-05. The tradition of handlooms is so strong that the entire country is dotted with places famous for some or the other handloom product.

Handloom products have been a major part of export basket of the country. Made

ups, Dhotis and furnishing have been the major contributors to the Handloom exports basket. Furthermore, the majority of these exports have been to Europe, USA and other Asian countries.

If specifically the centers of 'ikat' are to be considered then there are only three states that can boast of this unique tradition Gujarat, Orissa and Andhra Pradesh. In Gujarat it is only the Patan area, which produces the 'Patola' sari, a wedding sari for the women of Kathiawar region. In Andhra Pradesh the main areas producing Ikats are the Chirala area and the Nalgonda district (famous for Pochampalli saris).

It is only Orissa, which has the tradition of 'ikat' across almost the entire state, mainly centre in Bolangir Sonepur Bargarh Sambalpur districts in the Western parts, Cuttack district in the eastern part and the Kalahandi Sundergarh districts in the southern parts of the state.

1.2 Handlooms in Orissa :

The distinctive feature of the Orissa handloom industry is the ikat design, which finds ancient linkages in the cross-cultural influences with the maritime activities of South East Asia. The tradition of producing hand woven textiles is one of the major activities next to agriculture in the coastal region

Orissa is the land of handloom and handicrafts. It has a special recognition in the country's textiles scenario, for its exclusive Handlooms. It is an important craft product and comprises the largest cottage industry of the state. Thousands of looms across the state are engaged in weaving cotton, silk and other natural fibbers. There is very rare village where weavers do not exist, each weaving out the traditional beauty of Orissa's own precious heritage. Handloom industry, in Orissa is cottage-based industry, whereat all the members of family are apart of the production, taking place on the looms. The handloom sector is classified as the organised group of the Primary Weavers Co-operatives and the un-organised weavers, working either independently or with the master weavers, the traders and some NGOs. Handlooms are a key element of the Orissa's economy. The Handloom Census of 1987-88 indicated Orissa's population of handloom weavers at 4,15,000. Of this, almost 30% were members of the poorer and relatively disadvantaged Scheduled Castes (SC). Amongst the population of weavers almost 40% worked on a full-time basis as weavers, and the industry provided direct employment to 244,000 persons. However, Handlooms census (1995-96) shows that Orissa's handloom sector generated employment for 208,000 persons. Further, a more recent survey undertaken by the Textiles Committee suggests a total population of just under 100,000 handloom weavers. About 55% of these weavers were found to be from Orissa's western region. About 85% of the weaver households had only a single loom, while less than 1% had more than four looms. The bulk of weaver households came from

the other backward castes (76.4% of all weaver households) and scheduled castes (17.5% of all weaver households) communities providing ample evidence of a correlation between weaving and the low incomes and asset base of weaver households.

In this dynamic era, fast changes in fashion trend have also led to the increasing demand of handloom re challenges on the other hand. Even though the situation would prevail, handlooms will survive, as it has the immense design potentiality, diversities with less cost effective according to the customer's requirement and fashion trends. The industry will have to look for competing & surviving purely on its intrinsic strength & competitive edge in a holistic & integrated manner.

Chapter - 2

Origin and History of Khandua Sarees

2.1 Evaluation of Khandua cluster :

This cluster is the single largest place in the State where there are 10000 weavers with approximately 6000 looms. The art of weaving of Nuapatna is more than 800 year old and is linked with temple of Lord Jagannath at Puri as few weavers, specifically weave fabric for Lord Jagannath for different religious occasion as per demand of Jagannath Temple Administration. Lord Jagannath, Balabhadra and Subhadra wear Khandua silk sari of special design with extra large specification, daily for different **“BESA”** as per principle of temple administration. The colour combinations of these tie - & - dye saris exhibit the ethical sense of life. Yellow coloured ikat fabric for Lord Jagannath symbolise salvation, green for Balabhadra symbolising life and red for Subhadra signifying power or shakti. The “BESA” of Lord Jagannath, Balabhadra & Subhadra is very much famous and all devotees and visitors of World see the BESA. Devotees offer Khandua silk sari to Lord Jagannath for this different BESA.

Thomas Motte visited this cluster (Nuapatna) in 1766 AD and gave an account of weavers weaving silk tie and dye fabrics including Gitagovinda saris. The tie & dye technique in Nuapatna has reached a high level of development and craftsmanship during 20th century. In weaving of silk fabrics some times cotton yarn is used in border warp Ikat and pallu weft Ikat. The technique produces motifs in their natural curve form and geometrical motifs are very rarely used.

2.2 History of Khandua :

According to “Madala Panji” of Lord Jaganath

The tie and dye technique in this area, as per history belongs to Ramchandra King of Puri in 1719 A.D. and also Jaydev the great poet. During 12th century, Jaydev desired to offer this Gitagovind to Lord Jaganath .He find the silk fabric as a medium. He decided to write the lyrics of Gita Govind using the tie and dye technique at this village Kenduli Birth place of Jaydev) and advocated them to Lord Jaganath ,Balabhadra and Devi subhadra. The art of weaving in this area is more than 800 years old and is linked with the temple of Lord Jagannath at Puri. Few weavers of Nuapatna specifically weave cloth for the Lord at the temple. This has been the practice since generations and even as on date, there are two joint families of Madan Naha and Sudam Guin, who specifically weave Silk fabric for the Lord of Puri and for consumption at various other religious purposes and at other temples.

In course of time the king issued an order to supply these fabrics to the weavers of Nuapatna and nearby area. Since then the silk fabric is supplied to the puri temple as Khandua with different designs. Khandua sarees are exclusively manufactured in Badamba and Tigiria blocks. There are 10,000 weavers out of which 80 % weavers are the manufacturers of khandua saree. Khandua saree are made with bold motifs of elephant, lions, deer's and lotus in bright acid colour in tie and dye. It is very old age and these are used by Jaganath temple, Puri for the deities of Jaganath , balabhadra and Subhadra. Some special weavers manufactured calligraphy on the fabrics with Gita Govinda and Das avtar. During production of these fabrics they observe strictly some principles like fasting and not taking non-vegetable food, as it is clearly related with spiritual activities.

The Rath yatra of puri is a world famous religious practice, during which the idols of Lord Jagannath, Balbadra and Subadra are taken out on a procession on three different raths from the main temple to the Gundicha temple, (i.e. the In laws place of the lord) for a period of a week and then they are taken back to the premises of the main temple. The Raths on which the procession is performed are building afresh from specific wood every year. The Raths are covered and decorated with colourful plain silk cloth, which is mainly, weaved from the Nuapatna and nearby area.

Chapter - 3

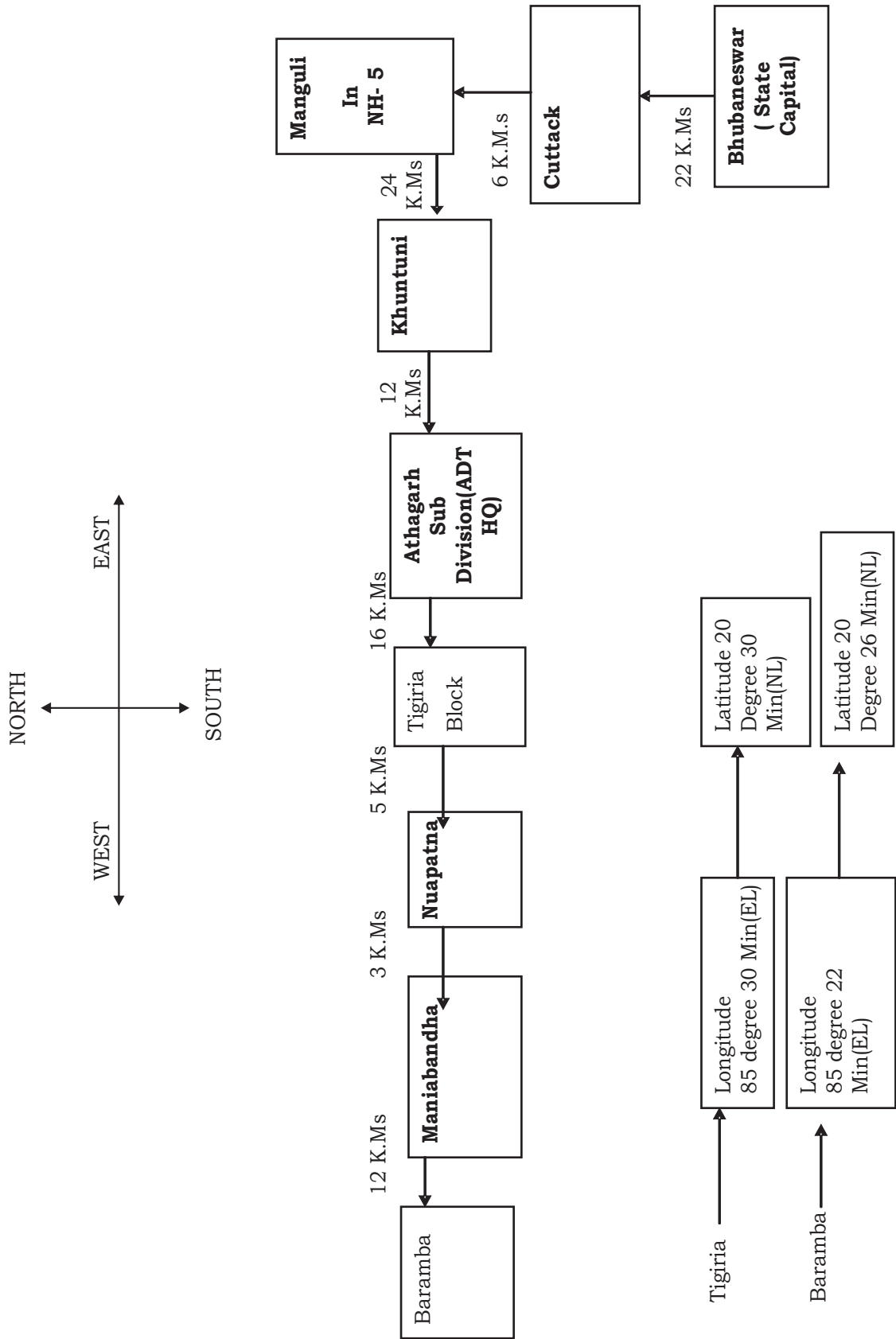
Geographical Location

3.1 Location of the Khandua cluster :

The art of weaving of Nuapatna Cluster is linked with Lord Jagannath since inception. Few weavers of this area weave special fabrics for the Lord Jagannath for different occasions. Khandua silk saris of Nuapatna village are very famous in all over India for its excellent workmanship, design and colour combination. The hand woven silk, cotton and Tussar Tie & Dye Fabrics are one of the major activities in the NUAPATANA area of TIGIRIA cluster of Athagarh Sub-Division in Cuttack District, Orissa. The Tigiria Cluster is about 70KMs away from District Head Quarter i.e. Cuttack and 100KMs away from State Capital i.e. Bhubaneswar. Always Bus facilities are available at Cuttack & Bhubaneswar to reach Nuapatna, Tigiria on road. Raj Athagarh & Ghantikhala are the nearest Railway stations of the cluster. Nuapatna is a Panchayat having 5000 weavers with more than 3000 looms, which is the main village of Tigiria Cluster.

3.2 Significance of this product :

Nuapatna cluster comprises of Nuapatna G.P., Gadadharpur G.P., Bindhanima G.P. and Jemadeipur G.P. within 3 kms radius of Nuapatna village. Nuapatna Cluster had prominence in the Indian Silk Industry, as it was one of the 3 potential places of the Tussar Producing areas of the Country. Five exporters had established their organization at Nuapatna during the period from 1965 to 1995 for production and exports of Tussar and Tussar blended fabric like TGN to European Country, Japan. Due to change of policy and market trend at National and International Market, the production of Tussar product gradually reduced and the weaver of this area shifted to weaving of cotton & silk Tie & Dye sari for local & outside State Market. The antiquity of the hand woven textile craft of Orissa can be traced back to 15th century from the beauty of saris described in the works of famous poets such as Sarala Das and Upendra Bhanja. In his poem 'Labanyabati'. Upendra Bhanj described the sari worn by Labanyabati as "a fine blue saree with a red flower border"- so soft and light that are folded and it could fit into the palm. Poet Jaydev of famous 'Geeta Govinda', an adorn devote of Lord Jaganath, in order to be with the close proximity of the deity had the verses of Geeta Govinda woven in tie and dye method on the cloth and offered to Lord. The ritual is still continuing at Jagannath temple, Puri and also interesting to note that Orissa sarees have a close relation with the Jaganath cult. Originally the four basic colours, which are found on black, white, red and yellow and the motifs such as temple border, lotus, conch, wheel, signify the affinity with the reigning deity.



Chapter - 4

Product Profile

4.1 Products :

A range of products is being churned out of these weaving hamlets. They vary from Khandua saree, Mercerised cotton saree, Tasser Ikat saree, Chadors, stoles, Dupatta, Bed sheet, Pillow cover, Cushion cover, Door screen, wall hanging, Dress materials, Table cloth and handkerchief including the ritual dresses of three deities Jaganath, Balabhadra and Subhadra in different occasion are being wearied to them.

PRODUCT PARTICULARS (SILK VARIETIES)
Details/ Specifications of pattern

Brand	Body	Anchal	Border	Warp	Weft	Reed	Pick	Scale of production	Average cost range
Body Bandha	Buta, Star, Stripes, Animals by tie and dye on weft	Tie & dye M.C Yarn	Tie & Dye cotton small weave National Border, Flower Buta	2 ply 18-20 Danner Bangal ore silk yarns	3-4 ply 40-50 Danner Malda silk yarn	80	80	Mass	Rs. 1200/-to Rs. 1850/-
Plain	Buta (non-tie dye)	Tie Dye M.C Yarn	Small flower, buta and other design non tie & dye	2 ply 18-20 Danner Bangal ore silk yarns	3-4 ply 40-50 Danner Malda silk yarn	80	80	Mass	Rs. 950/-to Rs. 1250/-
Jala	Plain or buta (non-tie dye)	Weave design of single colour	Weave design (non-tie dye, konark wheel)	3 ply 18-20 Danner Bangal ore silk yarns	4 ply 40-50 Danner Malda silk yarn	80	80	Occasional	Rs. 1600/-to Rs. 2250/-
Bomkai	Plain or buta (non-tie & Dye)	Weave design of multi colour, multi idols flowers followed by bird or dancer etc.	Weave design (non-tie & dye, konark wheel)	3 ply 18-20 Danner Bangal ore silk yarns	4 ply 40-50 Danner Malda silk yarn	80	80	Occasional	Rs. 1800/-to Rs. 2500/-

PRODUCT PARTICULARS (COTTON VARIETIES SAREE):

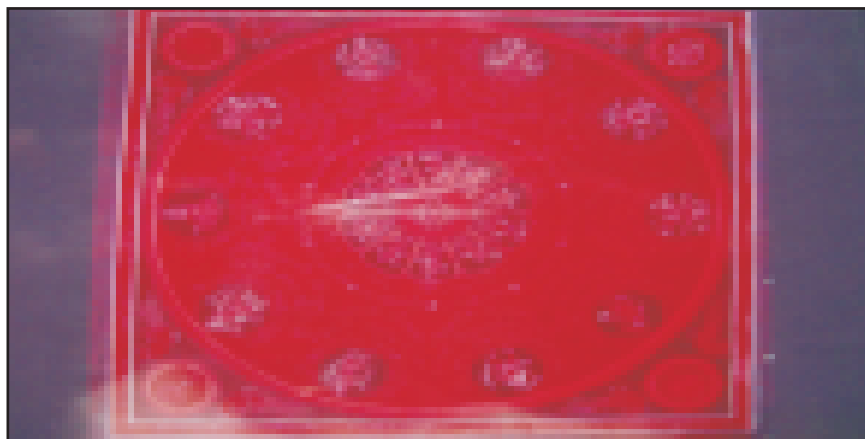
Details/ Specifications of pattern

Brand	Body	Anchal	Border	Warp	Weft	Reed	Pick	Scale of production	Average cost range
Body Bandha	Tie & Dye	Tie & Dye	Dobby design with Tie& Dye	2/120 ^S	2/100 ^S	72	70	Mass	420/-
Pasapali	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/100 ^S	72	70	Mass	360/-
Jharana	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/100 ^S	72	70	Mass	310/-
Rekha Buti	Buta	Tie & Dye	Tie& Dye	2/120 ^S	2/100 ^S	72	70	Mass	300/-
Kumbha	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/100 ^S	72	70	Mass	280/-
Scot	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/100 ^S	72	70	Mass	333/-
Computer	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/120 ^S	72	72	Mass	520/-
Border Computer	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/120 ^S	72	72	Mass	450/-
Hycoco	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/120 ^S	72	70	Mass	440/-
Discover	Check and Both Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/120 ^S	72	72	Mass	600/-
Thaka	Tie & Dye	Tie & Dye	Tie& Dye	2/120 ^S	2/100 ^S	72	70	Mass	400/-

4.2 Specific Potential Products : Some unique products are very potential from these clusters which is not manufactured not only any part of the state but also of the country. The photographs and particulars with specialization, which related to the culture and heritage of the oriya community are given below.

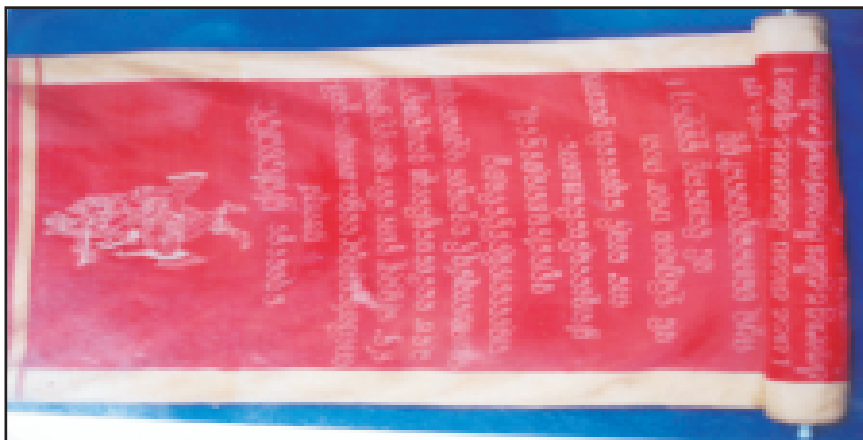


Woven with 2 ply x 3 ply silk with predetermined color and design. The fine curvilinear IKAT designs reflecting the floral and animal motifs on the body of the fabric. The designs spouth on the body of the fabric in due course of weaving through adjustment of weft IKAT in warp. The border and anchol design woven with extra threads in a geometrical curvilinear pattern to have the extra prominency of the fabric. This Khandua saree has been nominated for the national award for this year. it has been made by Mr. Subala Karan, master weaver from Maniabandh of Baramba block. All the description of four categories of woman are explained through this silk saree and it's design.

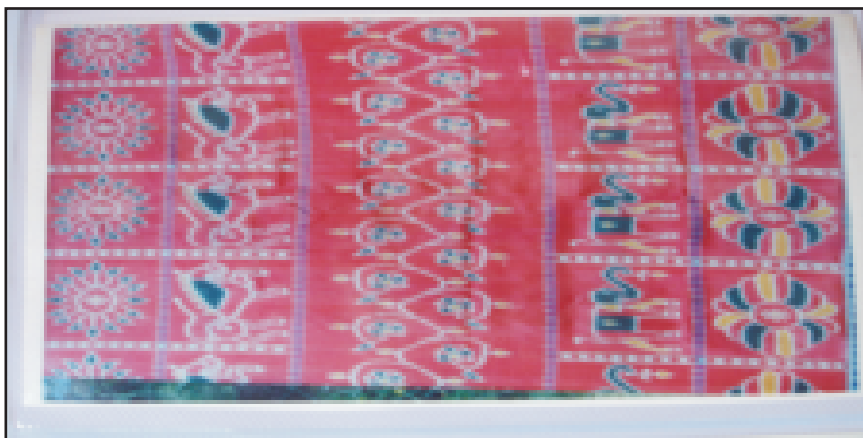


Wall hanging of “DASSABATARA” with sloka of “GEETA GOVINDA” written by poet Jayadev. The ten different incarnation of God has been reflected in this wall hanging through tie and dye process.

Speciality; The fabric is dyed with natural colour.



Entire sloka of GEETA GOVINDA has been written in tie and dye process using natural dyes by two national awardees from the Nuapatna area. It has taken more than two years to weave it.



This KHANDUA saree is about 20 years back.

“Padmini padmagandhasca payagandhascha Chitrini.

Sankhini minagandhascha Madyagandhascha Hastini ”.

All the descriptions of four categories of woman are explained in this sloke are designed through this silk saree.

LIST OF KHANDUA DIVERSIFIED PRODUCTS

Sl. No.	Name of the product	Product particulars	Price in Rs.
1.	Chadors	2/60s, 32s, 26s, both cotton and M.C. cotton (Tie and dye)	100-500
2.	Stoles	2/100s and 2/80s cotton and silk	100-400
3.	Bed sheet	2/60s, 40s, 32s, 26s cotton	80-200
4.	Napkin	2/80s M.C. cotton	100-120
5.	Table cloth	26s, 40s cotton	100-150
6.	Door screen	32s, 20s cotton	150-250
7.	Wall Hangings	2/80s, 40s, M.C. cotton	70-350
8.	Cushion cover	2/80s, 40s, 32s cotton	40-50 per mtr.
9.	Dress materials	2/80s M.C cotton and cotton	75-100 per mtr.
10.	Pillow cover	2/60s, 40s, 32s cotton	30-40 per pieces
11.	Handkerchief	2/80s M.C. cotton	10-20 per pieces

4.3 Organisational Intervention & Diversification:

Though weaving activities are continuing at Nuapatna and nearby area since 12th century, after independent the 1st Primary WCS was established in the year 1948 after introduction of Co-operative Movement in the State. Nuapatna Primary WCS was registered by the D.R.C.S., Cuttack vide No.6 CU dt.9.9.1948. Subsequently Nuapatna No.2 WCS was registered by the D.R.C.S., Cuttack in the year 1954 vide No.61 CU dt. 2.6.1954 and 3rd and 4th Primary WCS were registered by the A.D.T., Cuttack in the year 1975 and 1976.

After establishment of Directorate of Textiles, Orissa at Bhubaneswar, massive steps was taken to organize cooperative societies by enrolling weavers as a member of the societies through the field staff of ADT, Cuttack and Athgarh. For fulfillment of required yarn of individual weaver of Athgarh Zone and other Zone, one Cooperative Spinning Mill i.e. Sree Jagannath Co-operative Spinning Mill was set up during the year 1980.

But due to change of Govt. Policy and market trend of overseas the export market

was gradually closed for those furnishing product. Main reasons are as follows:

- ❖ Change in the forest department policies for the Tussar cultivation by which it was decided to collect revenue towards production of Tussar cocoons as forest products.
- ❖ Shift/change in the trends of consumption
- ❖ The market of coarser count product like TGTN was gradually come down and demand for finer count product was increased.
- ❖ Ban of Indian Textiles Export to Germany on Eco-friendly grounds.
- ❖ Germany and other European Countries announced ban on the Indian Textiles Export during 1995-97 stating that they are not eco-friendly and some specific dyes used in our Country are creating skin cancer to some of its user.

Chapter - 5

Production Process

5.1 IKAT Weaving Process of Orissa :

Orissa at one time called “UTKAL”, the land of excellence of art and craft. It possesses numerous and glorious traditional arts and crafts like woven textiles, pattachitra, applique, silver filigree, and wood craft etc., which no doubt have gained distinction of its own, nationally and internationally. Of all these, history of woven textile craft is stretched long back to the past. Much has been spoken and still more has been written about the hand woven textile craft of Orissa.

The art of IKAT weaving is practiced, over centuries, and the skill is being inherited, through generations. The Orissa IKAT weaving is a much older tradition than Andhra Pradesh or Gujarat, and their more popular motifs as such are a stylised fish and the rudraksh bead. Here the colour is built up thread by thread. The 'Ikats' of Orissa stand apart from the rest other 'ikat' traditions due to the unique design range that they possess, derived from nature and religious themes. Thus while Ikats of Orissa have a wide range of flowers, trellis patterns, animals, gods and goddesses and images from day to day life as their motifs, most other ikat patterns have either geometric or diffused abstract forms as their motifs. The fine nature of these difficult-to-weave motifs is possible due to the fine tying and dyeing skills and thereafter weaving skills of the weavers of Orissa who do not allow any distortions in these motifs during the course of weaving.

5.2 Ikat Process in Khandua weaving Area:

Tie and dye technique on silk was in existence at this area in the 18th century. The developed technique and other evidences suggest that the techniques were existing in the area even a few centuries earlier, may be in the 12th or the 13th century, though its specific mention is found only in 1719 A.D. which shows its presence earlier to that date at the village Kenduli from where the Gaudia Patra weavers of Nuapatna seem to have come to this present centre.

Tie and Dye technique on cotton is in existence in Nuapatna (Tigiria) area started in the 20th century. The technique in Nuapatna has reached a high level of development and Craftsmanship. In weaving of silk fabrics sometimes cotton yarn is used in border warp Ikat and in Pallav, weft ikat. The technique produces motifs in their natural curve form and geometrical motifs are very rarely used.

The present practice of the tie & dye technique at Tigiria and Badamba is the outcome of the efforts of one popular personality named Shri Arjun Subudi and his son

Shri Banchani Das who, generously taught the art to every person who approached him and helped the weavers without expecting any return from them. Shri Arjun subudi is no more and that the local have named a local school on his name.

5.3 Raw-material used for Production :

The age-old tradition of Ikat weaving is being survived today at the skilled hands of the interior rural handloom weavers and that Ikat process of weaving in the different parts of Cuttack district is called in the name of “KHANDUA”. The different stages involved in the process of production of Khandua Saree and fabrics can be summarised as follow:

Yarn		
Description Gsm	Price pr Kg	Place of Procurement
Cotton Grey2/120's	Rs 2000/- to 2200/- per 4.54 kgs	Cuttack, Athagarh
Cotton Grey. 2/100's	Rs 1600/- to 1700/- per 4.54 kgs.	Cuttack, Athagarh, Tigiria
Cotton Grey2/80's	Rs 1100/- to 1200/- per 4.54 kgs.	Cuttack, Athagarh, Dhenkanal, Tigiria
Bangalore silk yarn 18-20 Dannier-2 Ply	Rs. 1400/- to 1700/- per Kg	Cuttack, Bangalore, Dhenkanal,
Malda silk yarn 40-50 Dannier-3Ply	Rs. 950/- to 1100/- per Kg	Cuttack, Kolkata, Kharghpur, Dhenkanal, Tigiria, Athgarh,
Dyes and Chemical		
Vat dye	Rs. 1400-3500/kg	Cuttack, Kolkata, Kharghpur, Dhenkanal, Tigiria, Athgarh,
Azoic dye	Rs. 300-500/kg	Cuttack, Kolkata, Kharghpur, Dhenkanal, Tigiria, Athgarh
Acid dye	Rs.350-550/kg	Cuttack, Kolkata, Kharghpur, Dhenkanal,

		Tigiria, Athgarh,
NaOH	Rs. 40-50/kg	Cuttack, Kolkata Kharghpur, Dhenkanal, Tigiria, Athgarh,
Na ₂ CO ₃	Rs. 15-20/kg	Cuttack, Kolkata, Kharghpur, Dhenkanal, Tigiria, Athgarh,
Na ₂ SO ₄	Rs. 60-80/- kg	Cuttack, Kolkata, Kharghpur, Dhenkanal, Tigiria, Athgarh,
CH ₃ COOH	Rs. 60-80 /-ltr	Cuttack, Kolkata, Kharghpur, Dhenkanal, Tigiria, Athgarh
Cost of Dyeing		
Dyeing per bundle Vat	Rs 350/- to 500/- per 4.54 kgs	
Dyeing per bdl Napthol	Rs 250/- to 350/- per 4.54 kgs	

5.4 Dissolution of dyestuffs :

As per the desired shade percentage and material weight to be dyed, weight of dyestuff is calculated and dissolves in warm water to form a paste and then diluted with poured boiling water up to a measured quantity.

5.5 Dye Bath :

Dye bath (still vessel) is set at 40°C approximately with M: L (material to liquor ratio) of 1: 20. The volume of dye solution is deducted after calculation of liquor ratio. Chemicals like 10% of Glauber's salt, 1 2 % glacial acetic acids are added separately.

5.6 Preparation of material :

The tied silk yarn is wetted in water for 4 6 hours with 0.5 1% of TR oil and squeezed gently before entry to dye bath. This is very important because uneven shade will be developed if the material is not properly wetted.

5.7 Dyeing Process :

The material in hank form entered into the dye bath with desired liquor, dye

solution, Glauber's salt and acetic acid at 40°C. The temperature is gradually increased to 90-95°C within 45 minutes. The material is run continuously by steel rod for further 45 minutes. For effective exhaustion 1% of formic acid is added and worked for 15 minutes. After complete exhaustion, the material is withdrawn, squeezed mildly, washed in warm water followed by cold water then squeezed dried in open air. However for better fastness properties winch dyeing machines of 10kg capacity should be introduced here. Here the skill of the dyer/weaver is very much essential to get the desired design which woven in the fabric

5.8 Winding :

The process of weaving involves a number of activities like winding, warping design setting drafting, denting and weaving.

The artisans used traditional charakha for winding the yarn in notai or bobbin. There is no winding M/C. for this process mostly done by the ladies. They get Rs. 3.00 for winding a hank.

5.9 Warp Preparation :

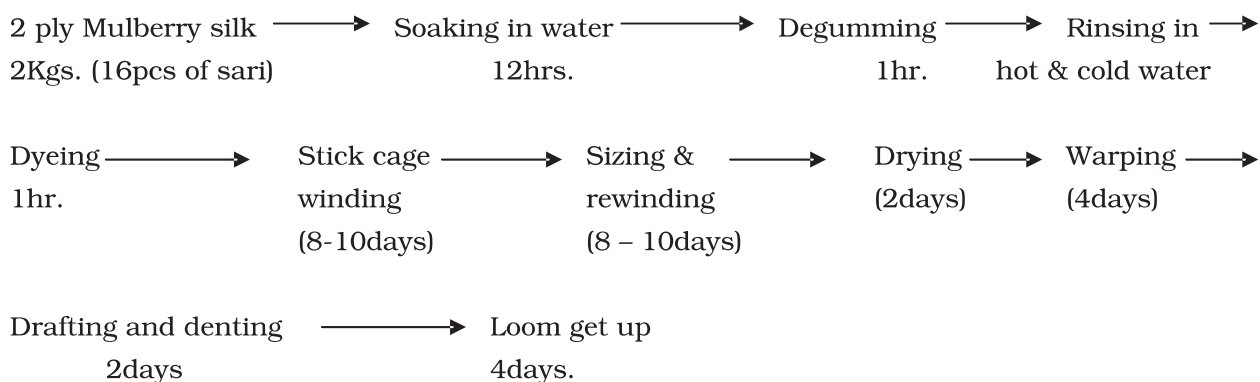
After getting silk yarn (2 ply mulberry silk) by the weavers the yarn is soaked in cold water for at least 12 hours before degumming. Generally, for production of 16 pieces of sari, 2 Kgs of silk yarn is required. Then Degumming is carried out for 1 hr. After rinsing the yarn in hot water and then in cold water, the yarn is dyed with desired shade. Then stick cage winding (Hank stand or shift and stick cage or Natai) of dyed yarn is carried out which takes 8-10 days. The hanks so



obtained are passed through sizing process (using, fried rice) and wound to a stick cage, which takes further 8-10 days. The yarn on the stick cage is dried. This stick cage process is too laborious, it adds a lot to the cost price of the product. Automatic winders can be introduced to do this job, first in experimental basis and then in commercial basis till sub-grouping of ikat process.

Using horizontal warping Drum carried out the warping process:

This process takes about 4 days. After getting the warp and the warp beam, the Drafting & denting processes are taken up which takes 2 days. Then the warp is taken to the loom and other arrangements such as heald tie-up, Harnessing of coloured yarn for border using, dobby/jacquard are carried out on the loom which take 4 days.



5.10 Weft preparation :



Mulberry charkha silk (filament Malda) are used for weft. For 16pcs. Of sari, the weaver get yarn about 5Kgs. but the processes are carried out in phased manner. In the cluster, for designing the sari, Tie & Dye is the traditional process. For getting design prominently & exact to the desired motif, the weft yarn is processed in phased manner, i.e. for 2 pcs. 600 gms and for 4pcs-1200 gms). The weft yarn is available in single form in the market. So, yarn is first plied to 3-4 threads by winding onto a stick cage in two stages, which takes 5-8 days. Then

the yarn twisted in a local process, which takes one day. The process followed here is purely traditional, manual and laborious also. It is interesting that though the plied weft yarn at present is available in the open market, these weavers do not use it in order to

avoid duplication in quality of raw material. Plying or blending process has ample scope for adulteration in the quality of silk yarn, which is not noticed in the naked eye. If low quality silk yarn is mixed in this plying process, protrudes in the resultant yarn develop pilling effect during end use. Therefore it is better to procure single yarn in pure form. But automatic plying machine here also can be experimentally introduced to reduce the too much add on labour cost. The yarn is soaked in water for 8-10hrs before degumming. The degumming is carried out for 1 hr. followed by rinsing with hot water and then cold water. Then yarn is left for drying within one two days.

The yarn is again made to 2 ply by winding on to a stick cage which takes two days and after that the yarn treated with sizing material (fried rice-lia) in a day and again plied by rewinding on to a stick cage which also takes one day and then left for drying.

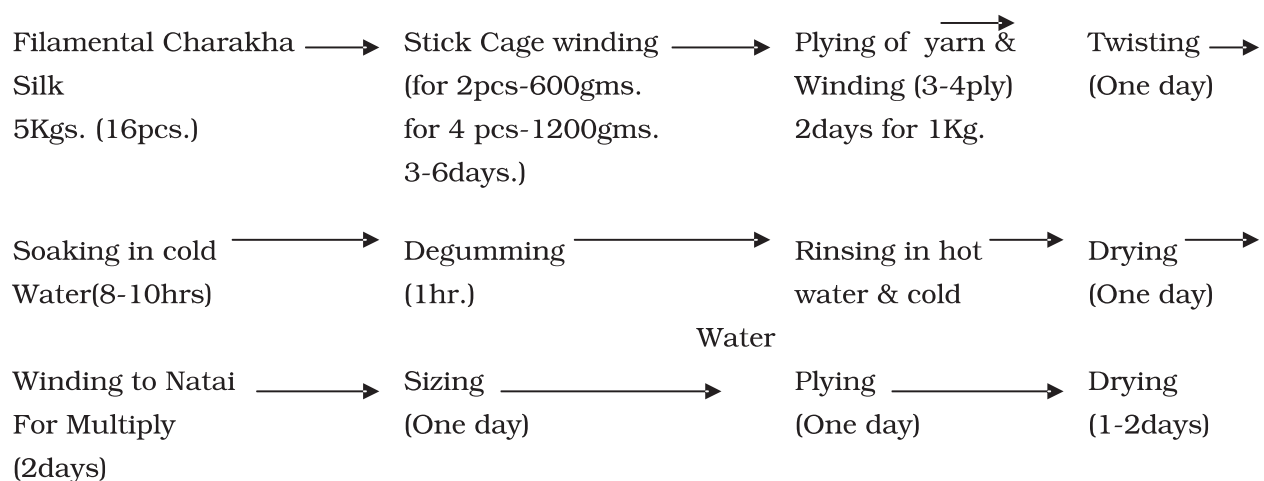
5.11 Manual Tying Process :

The yarn is then taken for preparation of tie & dye with the help of these patta (for ensuring the width & length of the desired fabric) and wooden frame. The yarn is arranged



in kera form in the wooden frame and tied with twisted yarn the portions, which need to be left white in the design. This process is repeated depending upon the number of colours required in the design. Then dyeing of yarn is carried out. Mostly Direct, Acid and Metal complex dyestuffs are used in the cluster during tie and dye process. However Metal complex dyes are now widely used for its good fastness properties and wide range of sales. All

dyestuffs are water-soluble. As the name indicates, metal component is incorporated into Acid dyes to form Metal complex dyes. Dyeing is carried out in acidic bath.



In Nuapatna the weavers have a practice of doing the tie-dyeing on the Weft i.e Bharani in their local language. The Warp beam yarn is generally a single colour plain dyed one, which is done independently at each and every household. But the main art and skill is in generating a good tie-dye design on the weft. The Tie & Dye activity for some of the routine normal traditional motifs are being practiced by almost all the weaver households but the activity of tie & dye for some specific designs has been taken up by persons as a full time work on cost basis. There are 20 different exclusive Warp dyers and 20 Different Weft Dyers. The charges for dyeing activities changes as per the Colour, Season and the tie-dye pattern. The other details are as under:

The material in hank form (degummed silk yarn) entered into the dye bath with desired liquor, dye solution. The temperature is gradually increased to 40° c within 5 minutes. Then Glauber salt is added and the material is stirred continuously by steel rod for further 45 minutes at a 90°-95° C. For effective exhaustion 2% of acetic acid is added and worked for 15 minutes. After complete exhaustion, the material is withdrawn, squeezed mildly, washed in warm water followed by cold water then squeezed dried in open air. However for better fastness properties dyeing machines should be introduced here. Here the skill of the dyer/weaver is very much essential to get the desired design which woven in the fabric. They also use Vat & Azoic dyeing process for cotton dyeing.

5.12 Design Setting :

According to the design made in the graph paper, which is reflected on the selvedge of the saree the doobby pegging done by the designer. The doobbies are making by the local carpenter. There is no modern doobby used here.

5.13 Drafting and Denting :

Drawing the yarn through the heald and reed is carried out manually. Mostly Nylon heald and wooden reed (made up in bamboo) are used. So after a long use reed mark is reflected on the surface of saree. (Not equally spacing of the warp yarn in the saree).

5.14 Weaving :

The process is very much significant in the chain. 70% weavers are using flying shuttle frame looms and 30% pit looms are used. On an average cost of these loom ranges from Rs.2500Rs. 4000/-. During weaving process of tie-dye fabrics the weft yarns usually set on the fall of the fabric after each beating. So, it is slow process around 25 30 picks/mnts. Few outside traders have tried to improve the local product by changing reed and pick and by increasing the ply. The weavers did not accept this and a result the product quality remains low and hence its marketability in other places is very poor.

Chapter - 6

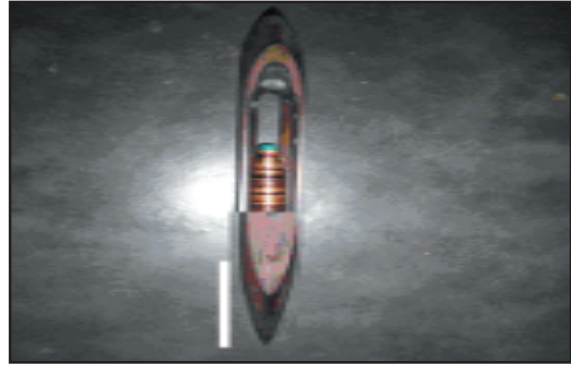
Uniqueness of Khandua Saree & Fabrics

- (1) Khandua Fabrics are distinguished and characterized by its design with fine lay out and harmony of colour schemes which gives out rainbow brilliancy.
- (2) Motifs like star temple conch, rudrakhya, fish, chakra, lotus, swan, peacock, parrot, deer, elephant, horse, lion, dance of devadasi, Gitagovinda on fabric, different types of scenery.
- (3) Khadua in basically a weft IKAT. Khandua design basically weave on (cotton silk & tassar) sarees, dress material & wall hanging.
- (4) Tying of weft for Khandua design in done for 4,8,24 sarees at time.
- (5) Khadua warping is done by cylindrical warping drum for 24 to 32 pieces of sarees at a time For warping bobbins notais are used.
- (6) Dying (Red, black, yellow, green, blue, maroon and white colours are prominent colours which used for Khandua.
- (7) Weaving is done in a fly shuttle frame loom having auto take up motion and doobby attachment(usually 8 to12 levers doobby are used for selvedge design)
- (8) After warp beam was prepared drafting and denting are done.
- (9) After weaving calendaring (Basani) is done.
 - ❖ Boarder portion is warp tie and dyed where as Anchol (Pallu) is weft tie and dyed.
 - ❖ The motifs give bold and natural curve effect instead of geometrical shape.
 - ❖ Normally use dark blue, green, red, violet colours for tie and dye technique.
 - ❖ They adopt a hand made wooden vertical frame for tying full length of weft yarn only.
 - ❖ Very small and high weight through shuttle pit loom is used for weaving “KHANDUA”.
 - ❖ Natural flower and animal motifs with colour bleed effect are main rythem of “ Khandua”.



❖ Reflection of two-tone colour for use of separate colour warp and weft yarn.

❖ Adopt cotton threads to wound on the weft and warp yarn meant tie and dye method and some times they use “kiya” leaf for tieing to protect the dyeability of yarn instead of rubber band.



❖ Use of brush to dye a small portion “the pallu” of warp when required instead of tieing the whole warp at that portion.



❖ Use of 2 to 4 ply silk, not twisted silk threads is used.

❖ Use of clay pot for dyeing.

❖ Only men do the tie and dye method, not by women.

❖ Orissa “Khandua worn by lord Jagannath, Balabhadra and Devi Subhadra only due to the sacred and holy method during

tie and dye method and also the whole process adopted during weaving.

Chapter - 7

Comparative Analyses with Contemporary Products

7.1 Orissa:

1. Orissa Ikat fabrics are distinguished and characterized by its design with fine lay out, sharp out line of figures and harmony of colour schemes.
 - ❖ Decorative and delicate designs.
 - ❖ Smooth, Curved outline as desired in the motif.
 - ❖ Red, Black, Maroon, Green, Blue, Yellow, White etc. are prominent colours. Techniques of Warp Ikat, Weft Ikat, Double Ikat & Com.
2. Productivity is less due to more delicacy of hand skills hence costlier.
3. Around 1 lakh weaver families with 60,000 looms are engaged in the trade.
4. Motifs like star temple conch, rudrakhya, fish, chakra, lotus, swan, peacock, parrot, deer, elephant, horse, lion etc. are very popular in natural form in Orissa Ikat.
5. Design patterns like Lahari, Lata, Ghagra, Deuli etc. are the special and typical sub-motifs used in Orissa Ikat.
6. Covers huge range of products like hanky, napkin, lungi, dhoti, saree, bed spreads, dress materials and furnishings on cotton/tassar/silk.

7.2 Andhra Pradesh :

1. Andhra Pradesh Ikat fabrics are distinguished and characterized by its design with fussy lay out, steppe out line of figures and limited colour schemes as mentioned below :
 - ❖ Structural designs.
 - ❖ Steppy nature of the out line of the figures in the square base.
 - ❖ Red, Black, Chocolate, and White etc. are the prominent colours.
2. Warp & Weft Ikat only are used.
3. Productivity is higher due to adoption of some mechanized methods in pre-weaving and weaving process resulting low costing.
4. Around 10,000 weaver families are engaged in the trade.

5. Flowers, stars, lion, elephant, parrot, geometric shape etc. in square bases are common motifs.
6. Few of such types of design patterns used in Andhra Ikat but all are in large or small square base.

Covers products like hanky (rumal), lungi, saree, bedspreads, mats, dress materials and furnishing on cotton/silk.

7.3 Gujarat :

1. Gujarat Ikat fabrics are distinguished and characterized by its design with fussy and square lay out, steppe out line of figures and limited colour schemes as mentioned below :
 - ❖ Structural designs.
 - ❖ Steppy nature of the out line of the figures in the square base.
 - ❖ Red, Blue, Green, Yellow, white etc. are the prominent colours. Only double Ikat is used.
2. Rate of productivity is very slowing hence more costly.
3. Hardly 100 weavers are in the trade.
4. Naari Kunjara, Chokadaa, Chanda (Moon), Chhaudi (plate), Raas, Ratanmok etc. are common motifs.
5. Such type of designs is produced on square base only. Covers only sarees (patalo) on silk.

7.4. Khandua in Ikat process Vs Tie dye of Gujrat & Andhra Pradesh:

<p>Orissa</p> <p>1. Orissa Ikat fabrics are distinguished and characterized by its design with fine lay out, sharp out line of figures and harmony of colour schemes as mentioned below.</p> <p>a. Decorative and delicate designs.</p> <p>b. Smooth, Curved outline as desired in the motif.</p> <p>c. Red, Black, Maroon, Green, Blue, Yellow, White etc. are prominent colours.</p> <p>2. Techniques of Warp Ikat, Weft Ikat, Double Ikat & Combined Ikat</p>	<p>Andhra Pradesh</p> <p>1 Andhra Pradesh Ikat fabrics are distinguished and characterized by its design with fussy lay out, steppe out line of figures and limited colour schemes as mentioned below.</p> <p>a. Structural designs.</p> <p>b. Steppy nature of the out line of the figures in the square base</p> <p>c. Red, Black, Chocolate, White etc. are the prominent colours.</p> <p>2 Warp & Weft Ikat only are used.</p>	<p>Gujarat</p> <p>1) Gujarat Ikat fabrics are distinguished and characterized by its design with fussy and square lay out, steppe out line of figures and limited colour schemes as mentioned below.</p> <p>a. Structural designs.</p> <p>b. Steppy nature of the out line of the figures in the square base</p> <p>c. Red, Blue, Green, Yellow etc. are the prominent colours.</p> <p>2) Only double Ikat is used.</p>
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<p>3. Productivity is less due to more delicacy of hand skills hence costlier.</p> <p>4. Around 1 lakh weaver families with 60,000 looms are engaged in the trade.</p> <p>5. Motifs like star temple conch, rudrakhya, fish, chakra, lotus, swan, peacock, parrot, deer, elephant, horse, lion etc. are very popular in natural form in Orissa Ikat.</p> <p>6. Design patterns like Lahari, Lata, Ghagra, Deuli etc. are the special and typical sub-motifs used in Orissa Ikat.</p> <p>7. Covers huge range of products like hanky, napkin, lungi, dhoti, saree, bed spreads, dress materials and furnishings on cotton/tassar/silk</p>	<p>Productivity is higher due to adoption of some mechanized methods in pre-weaving and weaving process resulting low costing.</p> <p>3. Around 10,000 weaver families are engaged in the trade.</p> <p>4. Flowers, stars, lion, elephant, parrot, geometric shape etc. in square bases are common motifs.</p> <p>5. Few of such types of design patterns used in Andhra Ikat but all are in large or small square base.</p> <p>6. Covers products like hanky (rumal), lungi, saree, bed spreads, mats, dress materials and furnishing on cotton/silk.</p>	<p>2 Rate of productivity is very slow hence more costlier.</p> <p>2. Hardly 100 weavers are in the trade.</p> <p>3. Naari Kunjara, Chokadaa, Chanda (Moon), Chhaudi (plate), Raas, Ratanmok etc. are common motifs.</p> <p>4. Such type of designs are produced on square base only.</p> <p>5. Covers only sarees (patalo) on silk.</p>
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7.5 Comparison of Ikat in Khandua Area and rest

IKAT PROCESS OF KHANDUA AREA	IKAT PROCESS IN OTHER PART OF ORISSA
1. Pit and frame looms are used.	1. Pit looms are used
2. Auto take- up and let off motion attached.	2. Manual take up motion and let off also used.
3. Flying shuttle picking.	3. Through shuttle picking.
4. Sizing the warp before bobbin winding with maize starch and rice.	4. Sizing the warp at the time of street warping with sagu starch and rice.
5. Cylindrical warping, Warp beam was prepared.	5. Street warping. The warp yarn winded with steaks.
6. Drafting and denting process carried out before loom setting.	6. Tying of warp threads with the old warps on the loom.
7. Tie and dye for weft yarn carried out for 8 to 32 pcs. Of sarees at a time.	7. Tie and dye for weft yarn carried out for 2 pcs. of sarees at a time.
8. A wooden cylinder is used for winding the tie-dye yarn according to the repeat of the design and number of pieces of sarees, And then transfers the yarn into a frame for tying.	8. Directly yarn wind into a frame according to the design.
9. Dyeing process carried out in a vat by squeezing the material in side the dye liquor and chemicals.	9. With the help of a steak dye solution enter into the tied yarn.
10. Usually Anchol portion dyed at the time pf weaving.	10. Anchol portion dyed at the time of warping.
11. Calendering was done after weaving.	11. There is no calendaring.
12. Khandua saree woven with both cotton and silk (weft ikat)	12. Basically cotton (Both warp and weft ikat)

Chapter - 8

Statistical Overview and Socio-Economic Profile of the Stakeholders

8.1 Statistics :

As per the estimation there are about 15500 weavers and 5860 looms in both the blocks. The prominent Gram panchayats like Nuapatna, Jemadeipur, Bindhanimaa and Gadadharpur Grama Panchayats of Tigiria block and Maniabandha, Abhimanapur, Kankadajodi, Ragadipada, Banamalipur of Badamba block. In addition there are number of traders, Master weavers & ancillary support providers are working actively in these blocks. The Annual turnover of both blocks of KHANDUA estimated of Rs. 34 Crores approximately. Most of the weavers are job workers who receive Yarn and design from the Master Weavers and handed over a woven product to them and receiving wages.

CURRENT STATUS

Sl. No	Village	No. of weavers family	No of weavers	No of running looms	BANKS	No of SHGs	No of Master Weavers	No of WCS Running	No of Traders
Baramba Block									
1.	Abhimanpur G.P (Abhimanpur, Birabarpur, Muktanagar & Jaripatna)	705	2720	980	1	28	10	6	4
2.	Kuarapal G.P (Kuarpal & Tangichandpur)	45	475	140	0	3	1	0	0
3.	Maniabandha G.P (Santrabali, Mania sahi, Nuasahi,	735	2490	815	5	17	19	2	5

	Suniasahi, Aswinsahi, Nahak sahi, Pradhan sahi, Kamar sahi, Sarak sahi & Matiapada)								
4.	Kankadajodi G.P (Kankadajodi & Manpur)	100	950	350	2	5	3	3	2
5.	Ragadipada G.P	55	270	100	0	3	3	0	1
6.	Banamalipur G.P	65	315	132	1	3	2	1	0
7.	Mahulia/kasikiari and Khuntukata G.P	100	1280	433	0	8	6	0	0
	TOTAL	1800	8500	2950	9	67	44	12	12
	Tigiria Block								
1.	Nuapatana G.P	1560	5400	2340	4		42	20	6
	1.Nalikan Sahi	70	265	105	-	2	-	-	-
	2.Surendrapatana	450	1700	800	-	5	6	-	-
	3.Bali Sahi	100	300	150	-	2	-	-	-
	4.Bada Sahi	150	465	200	-	3	4	-	-
	5. Gahamara Sahi	80	250	100	-	1	10	-	-
	6. Tala Sahi	65	220	70	-	1	4	-	-
	7. Guin Sahi	75	300	115	-	2	-	-	-
	8. Kansari Sahi	50	225	85	-	-	-	-	-
	9. Majhi Sahi	120	380	160	-	3	8	-	-
	10. Nua Sahi	100	335	120	-	2	3	-	-

	11. Teli Sahi	50	180	65	-	-	-	-	-
	12. Baunsapatna	20	50	15	-	-	-	-	-
	13. Hata Sahi	80	350	120	-	3	1	-	-
	14. Hariballava Sahi	150	380	225	-	3	6	-	-
2.	Jemadeipur G.P	365	1110	440			10	2	-
	Goutampur	120	390	150	-	2	7	-	-
	Budhajayantipur	50	150	60	-	-	-	-	-
	Godi Sahi	90	280	110	-	-	3	--	-
	Sadak Sahi	35	100	40	-	-	-	-	-
	Sana Sahi	50	140	65	-	-	-	-	-
	Bania Sahi	20	50	15	-	-	-	-	-
3.	Bindanima G.P	85	240	60			1	2	-
	Rangoni Sahi	50	160	40	-	1	-	-	-
	Tanti Sahi	35	60	20	-	-	-	-	-
4.	Gadadharpur G.P	80	250	70	-	-	-	2	-
	Total Of Tigiria	2090	7000	2910	4	30	53	26	6
	Total of Badamba	1800	8500	2950	9	67	44	12	12
	GRAND TOTAL	3890	15,500	5860	13	97	97	38	18

8.2 List of Co-operative Societies doing Khandua work

Block : Badamba

Sr. No.	Name of WCS & Address	Name of Contact person	Rematks*
1	Abhimanpur WCS, At-Abhimanpur, Po-Badamba,Cuttack	Sri Braja Bandhu Das Secretary	
2	Anant Kumari Mahila WCS		
3	Banamalipur WSC	Sri Nityananda Sahoo Secretary	10 Lakhs in 2006-07 Total members : 120
4	Birabarpur WSC		34 Lakhs in 2006-07 Total members : 200
5	Dalailama Budhist WSC	Sri Purna Chandra Sahu Secretary	Sales Value : 45 Lakhs in 2006-07 Total members : 200
6	Gayatri WSC		
7	Jayalaxmi Mahila WSC		Rs. 30.34 Lakh in 2004-05
8	Kakadijodi WSC		
9	Maniabandha WSC		60 Lakhs in 2006-07 Total members : 200
10	Maa Mangala WSC		
11	Maa Tarini Mahila Kalyan WSC		
12	Mukta Nagar WSC		
13	Rahashvihar WSC		
14	Sree sri Viswasaraya WSC		
	BLOCK-Tigiria		
1	Akhandalmani WSC		
2	Vighnaraj WSC		
3	Jemadeipur WSC		
4	Kalyanimai WSC		
5	Laxmi Narayan WSC		

6	Maa Annapurna Mahila WSC		
7	Maa Bhabani WSC		
8	Maa Dakshineswari WSC	Sri Arjun Subudhi Secretary	34 Lakhs in 2006-07 No. Of members : 100
9	Maa Sarala Mahila WSC		
10	Maa Tarini Mahila WSC(ECP)		
11	Nuapatna No. 1 WSC	Hsri Hemant Kumar Das Secretary	Rs. 88 Lakhs in 2006-07 Total No. Of members : 400
12	Nuapatna WSC No.2		Rs.30 Lakh in 2006-07 No. Of members : 320
13	Nuapatna Tie & Dye WCS		
14	Patitapaban WCS		
15	Sri Aurobinda WCS Nuaptna , Cuttack		
16	Ramchandi WCS Bindhanimaa, Nuaptna, Cuttack		
17	Sree Raghunath WCS Gadadhara Pur, Cuttack		
18	Gadadharapur WCS Gadadharpur, Cuttack		
19	Sree Jaganath WCS Nuapatna, Cuttack		
20	Budhadeb WCS Jemadeipur, Cuttack		
21	Patitapaban WCS Nuaptna, Cuttack		
22	Satyabhama WCS Nuaptna, Cuttack		
23	Ananta Kumari mahila WCS Nuaptna, Cuttack		
24	Sree Durga Mahila WCS Nuaptna, Cuttack	Smt. Basanti Behera President	90 Lakhs in 2006.07 No. of members : 400

8.3 Socio Economic Profile :

- ❖ The average working day of a weaver is 280 to 300 days per annum.
- ❖ The Weavers earning vary from Rs. 1400 to 2000 per month an average wages per day is Rs. 50 to 60 per loom.
- ❖ Majority of the population are illiterate and semi literate.
- ❖ Most of the families among weavers have more than five members.
- ❖ 50% of the weavers belong to BPL category.
- ❖ 30% of the weavers cover by Health Insurance Scheme and 20% cover under MGBBY.
- ❖ There is no water supply to the cluster, and the water available is hard water that affect on dyeing.
- ❖ Most of them leaving in Katchha house. The measure problem in rainy season that there are some leakage on the roof so that they can't work.
- ❖ 60% of the weavers are well connected in electricity and rests are depending upon Sun for their work.
- ❖ 25% are connected by telephone.
- ❖ Due to continuous weaving and chemical dyeing most of them suffered in eye diseases.
- ❖ Some of them have landed property they get themselves engaged for agriculture and partly weaving during rainy season.
- ❖ Maximum weavers are belong to OBC category, approximately 98 percentage.
- ❖ It is found that more than 42 percentage male are working in the in this area in weaving, pre-weaving and post weaving activities.
- ❖ More than 36 percentage female are also helping in the above three mentioned categories of activities.
- ❖ Out of the total children 22 percentages of children are helping to their parents in the pre loom activities.

Chapter - 9

Impact of Globalisation

9.1 Changes due to globalisation :

Orissa have earned national and international reputation since a few centuries for their exquisite and unique style of weaving and designing. The state has rich tradition in handlooms and it's products especially "IKAT" are all well recognized all over the country and also abroad for their artistic designs, colour combinations and durability. But due to the fast change in consumer taste , demand of eco-friendly and quality fabric with zero defect , fashionable fabric etc. our handloom industry have entered into a crucial stage to compete not only in the domestic market , but also in domestic market. On the other hand new technological improvements constantly take place in handloom weaving in the 19th century especially after phase out of quota system . Now a days fly shuttle looms has been introduced replacing the traditional throw shuttle which increases the productivity, but it is very much rare in the state like Orissa. New technologies should serve the interests of the producer as well as the user of the product and that is also cost effect to implement it in the handloom sector of this state.

In the era of globalisation, implying both transparency and participation, the policy making exercise of Government relating to handloom sector should involve responsible producer ,organization and be based on detailed studies to save the handloom sector from the problems of globalisation The impact of globalisation on handloom sector particularly for this state in many cases it is trouble shooting. The impacts are can be discussed precisely as weakness of Orissa handloom sector:

- ❖ Orissa handloom designs are not branded /patented, ethic is very much essential in this globalisation competitive market.
- ❖ Craft of tie and dye needs high skill.
- ❖ No sufficient literature' publications area available to reach it to new weavers even if to technologist.
- ❖ Process is with very low productivity.
- ❖ Process is less scientific, having less or no control on the quality of product with no assurance on fastness properties like colour, rubbing, washing and light fastness.
- ❖ Bleeding of one colour over other is a common problem.
- ❖ Production with matching colour is impossible which limits the bulk production and also exportability.

- ❖ No after treatments are done to improve the fastness properties of Ikat fabrics.
- ❖ Handlooms are placed in decent realized manner in different remote areas of Orissa.
- ❖ Closure of most of spinning mills provides hindrances on availability of raw material as it is bound to purchase yarn at higher price from Madurai, Coimbatore, Kolakat etc.
- ❖ No. Information technology system and design package are applied in the industry till date.
- ❖ Dormancy of most of handlooms & PWCS due to dearth of working capital.
- ❖ Not a single garment/ apparel house is established to make the products garment oriented.
- ❖ Uniform quality control system for the products of the state and awareness of ISO-9000 is not established.

9.2 Threats :

- ❖ Duplication of design patterns by the printing industries influences harshly to Ikaat designs.
- ❖ The present product level does not satisfy the quality norms to compete in international market during quota free post WTO period.
- ❖ The continuance of Ikat textiles production without after treatments and use of banned dye-stuffs having carcinogenic effects will be more fatal to foreign market.
- ❖ Production of handloom fabrics in Orissa is with less scope in absence of textile policy by Govt. of Orissa including financial assistance for
 - (i) Liberalization of raw materials (in absence of spinning mills)
 - (ii) Price competitiveness
 - (iii) Compensation to state export business.
 - (iv) Setting of Apparel park
 - (v) Research & development cell for handloom industry.

To sum up it may be said that there is scope for the growth of handloom sector in the state especially in the cotton production, yarn production and processing units. Only steps are to be taken to overcome certain hurdles. Also efforts need to be given to educate human resources through various training programme, workshop and meeting, publication local language journals, magazines etc. to motivate them regarding the present needs, upgradation of technology, management of financial resources required to set up industries.

ANNEXURE

1. Market Position of Khandua Products:

Variety produced	No. of Looms	Production / Month	Average cost	Turn over Annum	%
Silk saree	3500	3 pc	Rs. 1000-3000	Rs 19,90,00,000	58
M.C. saree	2000	12 pc	Rs. 280-1800	Rs. 11,52,00,000	33
Dress material	200	25 pc	Rs. 300-450	Rs 2,10,00,000	6
Others	160	–	Rs. 50-500	Rs. 57,60,000	3
Total	5860			Rs. 34,09,60,000	100

2. Wage Earning Structure:

Variety	Cost (Rs.)	Monthly Production (Piece)	Wages paid to weaver (Rs.)	Monthly earning (Rs.)
M.C. sarees Lower quality	280-360	18-15	80-100	1,440-1,500
M.C. higher quality	400-650	10-8	140-200	1,400-1,600
Silk saree (Khandua)	1,000-1,350	5-4	350-450	1,750-1,800
Silk Bomkai saree	1,800-2,500	3-2	550-900	1,650-1,800

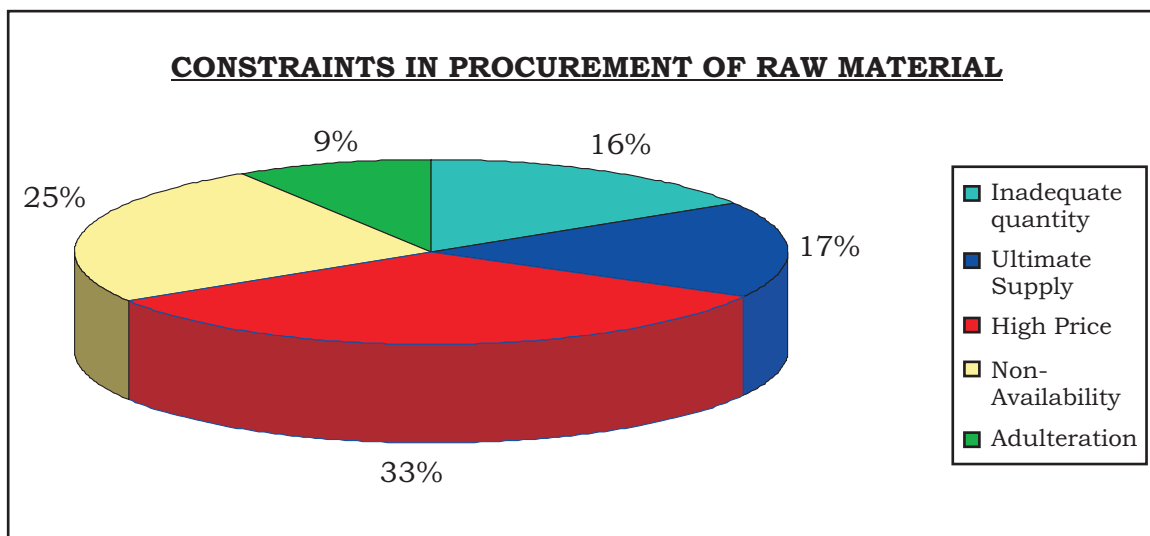
3. Analysis of Production Cycle & Statistics:

In the cluster normally 24-48 numbers of sarees are woven in a single production cycle. The following table illustrates duration of the individual intermediary process and persons engaged for the same.

PRODUCTION CYCLE

	Total Process	Weaving of Fine Cotton Saree 32 pc.	Weaving of silk saree 24 pc.
(1)	Scouring / dyeing for cotton & degumming / dyeing for silk	2 days	2 days
(2)	Winding of warp (by females & children)	4 days	4 days
(3)	Warping (Tani pura by males)	3 says	3 days
(4)	Preparation of Tie and Dye weft	20 days	30 days
(5)	Drafting, denting, doobby setting & Preparation of looms	2 days	2 days
(6)	Winding (By females & children) of weft yarn	4 days	4 days
(7)	Weaving	60 days	150 days
(8)	Total man days	95 days	195 days

4. Constraint of Procuring Raw materials :



5. Some Glimpses of Khandua Saree in Calico Museum :

Plate 12	Calico Museum of Textiles No. 2260
	<p>Silk Tarabali Saree, Nuapatna area, Ca. 1900 A.D. Ends per cm. : 24 Length : 6.36 mts. Picks per cm. : 23 Width : 99 cms. Count of warp & weft : 16/ 18 Den. 6 fold (estimated)</p> <p>The layout of the body is formed of tie and dye rectangular spots arranged in rows forming diamond figures with tie and dye floral figure at the centre of each diamond figure. Even then the stripe base is not altogether lost. The border is composed of extra warp woven design combined with stripe of weft tie and dye spots and temple figures projecting towards the body. In between the diamonds at the border are placed figures of parrots. The pallav is in transverse stripes of extra weft figures.</p> <p>The colour of the body is red. The rectangular spots in rows are in natural silk colour and green colour. The flowers are of natural colour outline and petals alternately filled with colour. The kumbha is in natural colour.</p> <p>The tie and dye is in weft.</p>

<p>Plate 13</p>	<p>Calico Museum of Textiles No. 2281</p> <p>Silk Mukтажhari Khadua pattern sample, Nuapatna area Late 19th Century. Ends per cm. : 25 Length : 93 cms. (Sample) Picks per cm. : 21 Width : 99 cms. Count of warp & weft : 16/ 18 Den 6 fold (estimated)</p>
<p>Plate 14</p>	<p>Calico Museum of Textiles No. 2277</p> <p>Silk Mukтажhari Khadua pattern sample, Nuapatna area, Ca. 1900 A.D. Ends per cm. : 23 Length : 1.25 mts. (Sample) Picks per cm. : 26 Width : 1.15 mts. Count of warp & weft : 16/ 18 Den 6 fold (estimated)</p> <p>Plates 13 and 14 are sample designs of Khandua (odni) used by brides in wedding. The fabric is of silk composed of stripes of tie and dye creeper, flower and bird in the centre flanked by stripes of bold animal and bold floral tie and dye figures in squares. The central creeper and flower pattern is called Mukтажhari. The colour scheme is bright. In Plate 14 the colour scheme is sober with natural silk colour figures on greenish yellow ground, while in Plate 13 the figures are in natural silk colour outline having bright maroon colour in the body. The head of the elephant is in deep chocolate colour, legs are in blue and natural colour, ear of the horse is in blue colour, spots on the deer are in blue colour and flowers have blue and red.</p> <p>It is important to note the animal forms. The magarmuha shape of the head of the elephant is artistic. The shape of the mayamriga is remarkable. The peculiar shape of the third figure nabagunjara is composed of as the weavers report, limbs of nine living things namely legs of elephant, paws of tiger, hand of man, head of the cock, neck of peacock, body of snake as tail, parrot like face, Lion's mane and body of Ox. The figure is very clear in Plate 17. The brilliantly sharp and bold flowers are also note worthy. The design is harmonious and rhythmic. The tie and dye is in weft.</p>

<p>Plate 15</p>	<p>Calico Museum of Textiles No. 2279</p> <p>Silk Khandua pattern sample, Nuapatna area Ca. 1900 A.D. Ends per cm. : 25 Length : 49 cms. (Sample) Picks per cm. : 27 Width : 1.26 metres Count of warp & weft : 16/18 Den 6 fold (estimated)</p> <p>This is a sample design of Khandua where the central stripe is formed of tie and dye diamond made out of rectangular spots as in Plate 12. The tie and dye figures are in natural colour. The border is in extra warp floral figures. The tie and dye is in the weft.</p>
<p>Plate 16</p>	<p>Calico Museum of Textiles No. 2278</p> <p>Tassar Khandua pattern sample, Nuapatna area Ca. 1850 A.D. Ends per cm. : 18 Length : 1.19 mts. (Sample) Picks per cm. : 17 Width : 1.56 metres Count of warp : 16/18 Den 4 fold (estimated) Count of weft : 20/22 Den. (estimated)</p> <p>This is the sample design of Tassar Khandua with slight modification in border in which one stripe of tie and dye is included. The tie and dye is in weft. Colours used are deep chocolate for the body and blue, green and natural colour for the figures. The plain middle stripe is yellow.</p>
<p>Plate 17</p>	<p>Calico Museum of Textiles No. 2275</p> <p>Silk sample of motifs, Nuapatna area Ca. 1900 A.D. Ends per cm. : 32 Length : 78 cms. (Sample) Picks per cm. : 21 Width : 1.29 metres Count of warp & weft : 16/18 Den 6 fold (estimated)</p> <p>This is a sample design piece of some of the motifs used with different colour in tie and dye in weft. Colours used are deep chocolate for the body and blue, green and natural colour for the figures. The woven designs in the border are in natural colour.</p>

<p>Plate 18</p>	<p>Calico Museum of Textiles No. 2270</p> <p>Tassar Sadha Kumbha Saree, Nuapatna area Late 19th Century Ends per cm. : 24 Length : 5.37 mts. Picks per cm. : 22 Width : 97 cms. Count of warp & weft : 16/ 18 Den 4 fold (estimated)</p> <p>This is a tassar saree of plain body with extra warp flower border combined with weft tie and dye rectangular spots and kumbha. The pallav is of transverse stripes of extra weft figures. The tie and dye is in weft. Colours used are maroon for the body and natural colour for the kumbhas.</p>
<p>Plate 19</p>	<p>Calico Museum of Textiles No. 2274</p> <p>Silk Gitagobinda Pheta sample, Nuapatna area Early 20th Century Ends per cm. : 25 Length : 41 cms. Picks per cm. : 21 Width : 1.59 metres Count of warp & weft : 16/ 18 Den 4 fold (estimated)</p> <p>As already mentioned a remarkable silk fabric was found in the area with sloka of Gitagobinda written in tie and dye in Oriya in the main part of the fabric. Plate 19 shows sample piece of such fabric. Such fabrics were offered to three deities in the temple of Lord Jagannath at Puri, which is continuing even at present. These fabrics are now woven without the figures in the border (Plate 19a). The tie and dye is in weft. Colours used are maroon for the body and yellow, green, blue and maroon for the figures.</p>
<p>Plate 19a</p>	<p>Calico Museum of Textiles No. 2418</p> <p>Silk Gitagobinda Pheta (Puri Woven in) Nuapatna area Mid. 20th Century Ends per cm. : 33 Length : 5.12 mts. Picks per cm. : 26 Width : 91 cms. Count of warp : 16/ 18 Den 6 fold Count of weft : 20/ 22 Den 6 fold</p> <p>Colours used are red for the body, green for the central stripe and natural colour for the script.</p>

Plate 20	Calico Museum of Textiles No. 2280
	<p>Silk Souvenir sample woven on the occasion of coronation of George VI, Nuapatna area 1937</p> <p>Ends per cm. : 16</p> <p>Length : 51 cms.</p> <p>Picks per cm. : 26</p> <p>Width : 76 cms.</p> <p>Count of warp & weft : 16/18 Den. 4 fold (estimated)</p> <p>Plate 20 shows a sample of a silk fabric specially woven for the coronation of King George VI. The script is in English, tie and dye is in weft. Colours used are maroon for the body, natural colour for the script and green for the border.</p> <p>There is another old design, an old sample of which could not be obtained. It is called a kothari saree. However this design is still in vogue and is included under contemporary fabrics.</p>

Source : Ikat Fabrics of Andhra Pradesh & Orissa by Shri Bijay Chandra Mohanty and Kalyan Krish (1974).

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