Understanding Livelihood Opportunities: Bastar District, Chhattisgarh

Contents

Executive Summary

The study titled 'Livelihood mapping of Bastar district' conducted during October – December 2012 delves into the livelihood scenario in the district with a focus on three sub-sectors and two service sectors.

District livelihood profile

Bastar district has an estimated 8.3 lakh people with 85% rural population and sex ratio of 1020. It is dominantly inhabited by tribals who constitute 62%. Literacy is low at 54% with variations when disaggregated across gender, rural / urban and blocks. The physical infrastructure for education, health, electricity, communication is developed but in need of improvement in terms of services.

Economic activity participation in the district is high. Work participation rate is over 50% (51.1%). About 4/5th are engaged in primary sector and less than 1/5th in tertiary sector. Secondary sector is under developed. About 90% women are in primary sector.

There is inequitable distribution of land with 58% marginal and small farmers owning 23% land. Food crops are dominant and cultivated in 92% cultivated area – paddy being the primary crop. Key issues include low agricultural productivity, pre-dominance of traditional agricultural practices, low levels of irrigation, natural calamities like floods and droughts, indebtedness and high levels of water runoff. A major section of the population is dependent on Minor Forest Produces (MFP) such as Tamarind, Cashew, Chironji etc.,

The district has huge animal population but needs to be taken up on a commercial scale. Dairy activity is not taken up as milk consumption is considered a taboo. Dairy cooperatives have been started but are defunct. The non-descript varieties yield low production. A demand exists for goat, sheep and pig meat. But goatery, sheepery and piggery haven't developed as it is mainly practiced for self-consumption needs rather than for the market. Poultry too is largely being practiced at a low scale despite the huge demand for chicken. The scope for fisheries is mainly for freshwater capture. Veterinary services are active but inadequate.

The soil and climatic conditions are suitable for Horticulture. Vegetable, cashew and mango plantations are in existence and are further growing. There is need for processing facility which will enable farmers to derive proper income. The sector is heavily dependent on outside states for procuring planting material.

Non-farm sector activities in the district include rural artisan / craftsmen, tiny, cottage & village industries, agro industries, handlooms, ancillary units, SSI units etc., Bastar district is well known for Dhokra handicraft and Bell metal handicraft. Industry is underdeveloped in the district with existence of primarily agro based and mineral based units. Large industries are non-existent though NMDC and Tata steel are to start their plants. A range of potential service industries and MSME units have been identified by DIC which could be potentially started in the district.

In the area of financial inclusion – the district has about 16.75 thousand SHG bank accounts and 9.4 thousand credit linked to banks. The SHGs have huge potential to play an important role in spreading the Financial Inclusion programme as well as livelihood promotion of its members.

Cashew sub-sector

Cashew forms an important horticulture crop in Bastar district. It is cultivated in 7,700 hectares of land with an expected yield at 3.5 thousand metric tons. Forest department, Horticulture department and NABARD are key players promoting cashew cultivation. NABARD has been promoting the WADI model in 3,000 acres of land. Horticulture department promotes cashew cultivation through a scheme under which it provides plantation material, technical guidance and advice and a subsidy worth Rs. 12,000. The benefits have been extended to 6,412 beneficiaries. Forest department has been encouraging cashew cultivation in forest common lands and transferred the management responsibilities to forest management committees. Agriculture College in Bastar provides quality planting material and training in cashew processing skills.

The existing patterns in the sub-sector reveals that while Bastar district is largely into cashew production, the pre-production and post-production linkages are with outside states. The plantation materials are procured from Orissa, Andhra Pradesh and Goa. Production stage involves land preparation, grafting, mulching, manuring, weeding, pruning, pesticide management and harvesting. Processing takes place dominantly outside the state namely in Jeypore area of Orissa. Processing stage involves cleaning, roasting, shelling, drying and peeling. Marketing stage involves cashew grading, packing and branding and sale of the same to wholesale markets in Andhra Pradesh, Kerala and Uttar Pradesh.

The various players involved are the primary producers / collectors, the intervening agencies, Kochiyas, Haat trader, Processing units, Transporters, Wholesalers and Retailers. The value chain analysis reveals that the maximum value addition takes place at the stage of processing. For a 100 kg of raw cashew about 22 kg of kernels are produced. While the producer receives Rs. 7000 for 100 kg raw cashew, the value addition that takes place at the stage when it crosses the processors and reaches wholesalers is about Rs. 14,300 (@Rs. 650 * 22 kilos). This varies as per the various grades.

The existing patterns of value chains reveal that the cashew cultivators are placed low in the hierarchy. The existing trade channels take care of the margins of the Kuchiya, processing units, wholesalers and retailers. While there are issues related to productivity enhancement that needs to be taken care of simultaneously the losses due to existing trade channels also need to be looked into.

There are various constraints faced in different stages of the sub-sector. In pre-production stage, there is shortage of availability of planting material usually acquired through outside states and farmers are lowly motivated to take up cashew cultivation due to its long gestation period. In production stage, there is non-implementation of the recommended ‘Package of Practices’. Poor irrigation facility also does not help. Lack of fencing leads to crop raiding by animals. There are also cases of theft of crops. The constraints faced during processing stage include: lack of processing facilities within the district leading to raw cashew moving out for processing purposes, lack of direct linkages with processing units leading to low returns, non-involvement of producers

in processing, poor plucking practices among the producers, absence of skilled personnel required during processing, shortage of labor required for processing units. The constraints faced during first level of marketing stage include: distress selling and low price realization at the producer end, non-availability of credit for producers, high level of dependence on middlemen and improper weighing practices by middlemen.

The recommendations include: encouraging SHGs to get involved in procuring and marketing of raw cashew, credit linkage to ensure avoidance of distress selling, promoting storage facilities through community storages, training SHG members in crop husbandry practices, training SHG members in cashew processing skills, training SHG members in financial literacy and business skills, working closely with van suraksha samithis / farmer associations and building convergence among players.

A community based institutional structure needs to be evolved, whereby SHG members have an opportunity to get involved in various stages of the value chain. Firstly, activity based SHG groups of cashew planters need to be formed. This needs to be federated at block level. The block level federations can have three committees – plantation management committees, processing committees and marketing committees. The district level federations can go on to play a role in expanding the role of women into higher value addition processes. Convergence can also be built up with van suraksha committees and producer companies.

Poultry sub-sector

Bastar district is the third largest producer of poultry in the state. A large population practices backyard poultry. While the local community is engaged in backyard poultry, the layer and broiler varieties are met by private poultry from within the district or from the neighboring state particularly Andhra Pradesh. Poultry is a subsidiary activity for a large tribal population and primary source for families engaged with chicken meat trade. The poultry varieties available in the district are desi chicken (aseel and kadaknath varieties), improved varieties (Kalinga, Brown multi colour, Giriraja), broilers and layers.

The pre-production stage involves procurement of chicks. The country chicks are procured through households, local haats, outside district / state haats, government poultry farms. The broiler chicks are procured through private poultry farms outside the state and local poultry farms within the state and department of animal husbandry. The key constraints in pre-production stage include: a) inadequate reach out through government poultry promotion schemes as only 0.4% households have benefitted from the same, b) lack of motivation among community to take up poultry as a micro business (50 to 200 birds), c) high mortality rates of chicken due to lack of vaccination, d) community orientation of looking at the activity as a means for self-consumption, e) poor shelter practices which is not supportive in maintaining optimum temperature for healthy growth of chicken, f) improper feeding practices, g) inadequate reach out of veterinary health care services, h) high mortality rates due to seasonal illnesses and Ranikhet and foul pox, i) lack of risk mitigation practices followed by the community.

The production stage involves rearing of chickens by providing proper health care, shelter and feeding. The production stage constraints include: lack of conversion of poultry activity into a full scale enterprise due to inactivity of the development players and absence of role models within the district. Institutional arrangements in monitoring backyard poultry are not effective.

The post production stage involves the reach out of live birds to the ultimate consumers. This happens through weekly haats, primary poultry rearers, petty poultry traders, direct purchase by consumers, kochiyas, master traders and chicken shops. Primary producers of desi chicken get decent price compared to any other variety. In the case of broiler and layer varieties petty traders, small chicken shops at the villages earn the least but face high risk. The constraints include: lack of assessment of demand for country chicken despite a high demand, price determination practices based on estimated weights rather than actual weights, high level of drudgery of petty traders who need to travel for about 20-70 kilometers both ways from poultry farms to chicken marketing centers.

Infrastructural constraints include the poor sheltering practices and poor quality of roads. Poor sheltering is causing high mortality rates. The poor quality of roads results in deaths of poultry during transportation from Andhra Pradesh to Bastar region. Institutional constraints include inadequate reach out of services. Animal Husbandry department and Government poultry farm are providing the required services. The outreach of the AH department however remains low. Moreover it has not been able to provide services to deal with low cost shelter, fencing which can help in dealing with high mortality. The Government Poultry farm which exists in Jagdalpur also remains inaccessible to far away villages.

Some of the recommendations include: a) Promoting backyard poultry as an enterprise activity; b) Expand the number of viable poultry units, c) focus on infrastructure development, d) door step health care extension services for chicken, e) poultry promotion through community based institutional model.

The institutional model would include: a) individual poultry rearers in the village rearing about 250 chickens following the required package of practices, b) its federation into a cooperative at village level for aggregation at village level, c) Producer Company over and above the village cooperatives ensuring linkages with the market and extension services to farmers.

Tamarind sub-sector

Chhattisgarh produces about 4 lakh quintals of tamarind of which 50% is produced in Bastar. Tamarind business generates ample employment opportunities for the rural community round the year. Tribal communities either individually or under contractors collect or sell it. There is both organized and unorganized channel.

In the entire process of unorganized channel the middlemen play a major role everywhere. They operate at two or three levels. They come in between collectors and the traders, traders and local town businessmen, and between traders and industries, processing units, etc. They adopt all moral and immoral ways to make money as per the situation. Primary collectors from villages collect the same from farmlands or adjoining forests. They sell the same to small traders and middlemen or sometimes carry to the market. The small traders and middlemen sell it to larger intermediaries, who in turn supply it to large manufacturers. The final links are the consumers in towns and cities. Unorganized market involves presence of middlemen and kochiyas. Middlemen and Kochiyas act as agents for the traders and procure the same. They resort unfair practices. Mandi fetches a higher price. Yet majority tamarind collectors do not go for it. The reasons for not taking organized route include: long distances, lack of/ poor transport, no storage facility, no packaging materials and absence of information about price.

The primary collectors do not take up de-seeding and de-fibering though it fetches better price. They resort to distress selling due to urgent monetary requirements. This is also compounded by lack of storage facilities. Middlemen purchase the tamarind from the haats, store the same in nearby godown and again give it back to the villagers for deseeding and de –fibering once the collection period is over. Or else the tamarind is stored in the cold storage and villagers are called there for value addition work.

The organized marketing channel includes primary cooperative society and CGMFP Mart. In organized marketing channel primary processing takes place in the village itself. The primary processing involves separating tamarind fruit from shell. Deseeding and sun drying takes place in the villages itself. Traders or processing units purchase Tamarind from the Mart. Sometimes State Corporation holds auctions or call for tenders twice or thrice for clearing up the stock. Then the processors make the Tamarind Chapatti and Candies.

The organized market is un-exploitative though it constitutes only about 10% trade which happens in the district. CGNWFP taking up the role of broker and district unions of a sub-broker can play a vital role in improving the income of the collectors.

The recommendations include: a) standardization of weighing systems, b) fixation of minimum support price, c) standardization of quality grading system, d) availability of short term low interest credit, e) provision of low interest credit, f) Income generation activities through value addition, g) awareness generation on exploitative practices, h) technical training by NGOs, i) transfer of technologies on proper harvesting techniques.

Electrician

The Electrician trade in Bastar has good potential with urbanization and industrialization of the district. Bastar district at present has about 600-700 electricians who are offering their services in domestic households and commercial establishments. They are employed with electrician contractors, electric shops, construction contractors etc., Most (over 95%) of them are lowly educated i.e., from 5th to 8th standard, not trained in vocational trade of electrician. They acquire these skills by joining as helpers and working under Master electricians (who too are not vocationally trained). While the skills definitely help them in their employment with electrician contractors, construction contractors etc., they cannot think of getting into large scale public / private sector employment as they lack certification.

The existing number of electricians and their skill sets is just sufficient to take care of the existing demand for electricians. But the changes in the economy of Bastar are bound to throw up demand for a higher number of electricians with a higher level of skill sets. This situation needs to be addressed.

The increase in demand for electricians will be through 3 factors: a) Entry of large industries such as National Mineral Development Corporation (NMDC) with its steel plant in Nagarnar and Tata Steel at Lohandiguda. b) About 50% of present electricity consumers at present have single point connections. With fruits of development reaching these communities, their usage of electricity will go up creating potential demand. c) Demographic changes which lead to increased population both indigenous as well as outside population

At present two types of players are involved in vocational education. These are a) Industrial Training Institutes and b) Vocational Training Institutes. There are about 6 ITIs of which 3 are offering electrician course. There are about 4 VTIs (CAP foundation, Bosco Tech, I-CAN, I-SAPS) of which 1 is offering house wiring course. While the ITIs do not have placement facility, however electricians have been finding employment outside the state including in reputed companies like National Thermal Power Corporation (NTPC), Railways etc., Electricians trained in House wiring through VTIs are placed with Electrician Contractors as helpers. The supply factor of electrician trade is bound to increase through these factors: -a) Increase in ITIs offering Electrician trade, b) Increase in VTIs offering Electrician trade and c) Increase in some specialized institutes such as R-SETIs and 'Livelihood college' offering vocational trade.

While the ITIs are not offering placement facilities, the placement rates of VTIs is over 70% in the district. SWOT analysis reveals that there are huge opportunities emerging with entry of large scale industries, large vocational training players and also the increasing motivation levels of youth in taking up non-traditional occupations.

While NABARD need not play a direct role in Training aspects, which is taken care by ITIs / VTIs / specialized institutes, it can a) launch a loan product for the trained electricians desirous to take up self-employment, b) encourage formation of Electrician clubs, c) financial support to Electrician clubs for exposure visits to industry, d) extend support to training programs which assist in their skill advancement (both enterprise and skill related)

Masonry activity

Bastar district is bustling with construction activity. This has been facilitated through three factors. Firstly, the district has undergone divisions thrice during the last thirteen years. The present Bastar is part of the larger Bastar district which has got divided into five present day districts. Secondly, with each division there was additional need for building Jagdalpur and Bastar as administrative centers. Thirdly, the region is to witness industrialization due to coming up of proposed steel plants by NMDC and Tata Steel. These in turn are to push up need for residential colonies and areas and thus create huge demand for masonry work.

Jagdalpur and 10 kilometers surrounding Jagdalpur is witnessing high level of construction activity. The opening up of steel plants in Nagarnar and Lohandiguda would also result in increased construction activities in these areas as huge settlements are going to emerge. This will throw up demand for masons in the district. However there is shortage of skilled masons in the area. The youth could also prefer to go out if they are interested. Apart from Jagdalpur, masonry is also a shortage in nearby areas namely Bacheli, Baladila, Kirandul, etc. and other urban centers in nearby states like Visakhapatnam, Bangalore, Hyderabad, Secunderabad, Chennai etc.,

The local youth who migrate presently are poorly employed. They are engaged in unskilled work earning low income. The works include stone breaking, hand pump digging, tube well digging and works at construction sites as unskilled labor. The working conditions of the migrated population continues to be poor receiving low wages, temporary employment, lack of employment welfare benefits etc.,

Skilled employment in masonry can go a long way in improving the livelihood status of youth in the area. Unskilled youth can be motivated to get skilled and take up masonry work. A number

of vocational training institutes have emerged which offer training in masonry activity. L & T's Construction Skill Training Centre (CSTC) runs a three month course in masonry activity. The objective is to train unskilled BPL candidates and also upgrade the skill level of existing construction workers engaged in the Industry. L & T pays a stipend of Rs. 1500 per month for the trainees. After the training they are placed in L & T projects. The services of such VTIs need to be taken closer to the youth. A large number of youth coming to Jagadalpur for construction work can be trained in masonry skills.

Special needs of the Community

Communities in the area largely prefer to invest in basic necessities in case of an increase in income. These include a) food, b) shelter, c) health, d) housing and e) creation of livelihood assets. Poor access to health infrastructure along with poor access to drinking water and sanitation results in poor health and frequent illnesses. Community prefers to invest towards improved health care. The staple diet of the local community is rice. They do not go in for nutritious diet such as vegetables and meat. They prefer to invest on the same. The local community presently lives in kutcha houses. They prefer to invest income in converting kutcha houses into semi-pucca houses by investment on tiles and asbestos. The communities also prefer to invest on livelihood assets such as ploughs, bullocks etc.

The District Profile
Bastar

The District Profile – Bastar

1. Brief overview of the District

Bastar district is located in south-western part of the state of Chhattisgarh, a central state in India. The district headquarters is located at Jagdalpur. The district has an area of 4,030.3 square kilometers. The district is bounded on the north by Kondagaon district, on the east by Koraput district of Orissa, in the south by Dantewada district and on the west by Narayanpur district.

Bastar was one of the 16 districts of Madhya Pradesh earlier. After the formation of the new state in 1999, the district was divided into present day districts - Bastar, Dantewada and Kanker. In January 2012 the existing Bastar district was further split. A separate Kondagaon district was formed. Bastar now comprises the seven development blocks namely Jagdalpur, Bastar, Bakawand, Lohandiguda, Tokapal, Bastanar and Darbha. There are about 618 villages, 317 Gram Panchayats and 164 patwari circles.

2. History

The ancient history of Bastar district is obscure. According to the *Puranas* Bastar is a part of the Dandakaranya region of the kingdom of "Dandak-Janpad". From the 4th century onwards there are evidences that Nala, Trikuta, Vakatakas and rulers of Sharabpuri ruled Bastar and its adjoining areas. These dynasties were engaged in intermittent battles and skirmishes for the control of the area and therefore the rulers of these dynasties ruled Bastar for short periods. From 400 AD to 700 AD Nala dynasty ruled over the area. The area, thereafter, passed into the control of the Ganga Dynasty. The Kings of Ganga Dynasty had Barsur as their capital and the antique remains at Barsur proclaim its glorious past. The Bastar region came under the reign of Naga dynasty known as Chhindaka Nagas of Chakrakot. This Kingdom subsequently formed part of the Warangal Kingdom of the Kakatiya dynasty. A number of inscriptions belonging to this ruling family have been discovered in Bastar region. As the imperial Gazetteer of India shows the eastern Chalukyas of Godavari region ruled the post Naga Chakrakot. From the 13th century onwards Raja Annam Dev and his lineage ruled Bastar. Lala Jagdalpuri, a historian, in his book "Bastar: History and Culture" mentions about 19 descendants of King Annam Dev till Pravir Chandra Bhanj Dev who was shot dead in 1966. In 1948, Bastar state was merged with the Indian Union.

3. Climate

There are three distinct seasons observed here summer (April - June), Monsoon (July – Sep.) and winter (Oct - March). In summer the temperature is very high. It soars up to 40 degrees Celsius and in winter drops to 11 degrees Celsius. The atmospheric condition is moderate and is good for agricultural and silvi-cultural practices. Average rainfall is 1359 m. (annexure – 1)

4. Rivers

The largest and the most important river in Bastar district is the Indravati which has numerous tributaries, the largest being the Pamer Chinta. The Indravati River originates from Rampur Thuamul in the Orissa state and flows through the Bastar division for about 400 Kms. and finally merges into the Godavari at Bhadrakali in Dantewada district.

5. Forest

The district has plenty of forests and can be divided into four distinct belts from the point of view of its distribution. (i) Mixed Forest of the North, (ii) Central Moist Region comprising the Sal belt, (iii) The Teak Belt, (iv) The dry region comprising mixed forest. The forest trees are Teak (*Tectona grandis*), Sal (*Shorea robusta*), Sisra (*Dalbergia latifolia*), Bijasal (*Ptetocarpus maruspium*), Kusum (*Schleichera trijuga*), Palas (*Butea monosperma*), Tendu (*Diospyros melanoxylon*), Mahua (*Bassia latifolia*), Harra (*Terminalia chebula*), Aonla (*Embilca officinalis*), Saja (*Terminalia tomentosa*), Kauha (*T. arjuna*), Salai (*Boswelia serrata*), Char (*Buchanania latifolia*) and others. The predominant tree is Sal, locally known as *Sargini.*

The forest coverage in the district has come down greatly from 33.6 per cent to 20.8 per cent following the division of Kondagaon district. Among the blocks the Bastar block has higher forest coverage at 34.2 per cent followed by Jagdalpur at 23.8 per cent and Bakawand at 22.6 per cent. Forest plays an important role in the lives of the people of the district, providing food security and livelihood through the collection of minor forest produce, and employment (as casual labour) in the Forest Department. The forests provide for people's consumption needs — fuel and firewood, medicines, food and drink, implements and housing materials.

Bastar, being a district with dense forest, is rich in Minor Forest Produces (MFP). Because of having these MFP, the district is contributing a major revenue income to the state. The important MFP available in Bastar district are Chironji, Amchur, Vaybidang, Karanji, Shikakai, Ghot pal, Mango Kernal, Tamarind, Cashew, Kosa Cocoons, Peng Seeds, Karkatiya Seeds, Nirmali Seeds, Ambadi, Amla, Charota Seeds, Chirayta,Mahua, Harra,Bamboo,Tora, Dhavai Phool, Bhilwan Seeds etc.

5. Social system

Bastar represents ethnic diversity. A variety of tribal communities exist in Bastar district. Out of the total population more than 70 per cent are tribes like Gonds, Abhuj Maria, Darda Maria, Bison Horn Maria, Muria, Doria , Dhruva, Bhatra,Halba, etc. In Bastar, people of varying culture, caste and religion are living harmoniously. People from various states like Punjab, Bengal, Andhra Pradesh, Kerala and Orissa have settled here. A variety of languages in local dialects are spoken here viz. Gondi, Halbi, Bhatri, etc. Bhatrifalls within the Oriya language group but only shares about 60 per cent lexical similarity with Oriya.

The tribes of Bastar region are known for their unique and distinctive tribal culture and heritage. Each tribal group in Bastar has their own distinct culture and enjoys their own unique traditional living styles. Each tribe has developed its own dialects and differs from the others in its costume, eating habits, customs, and traditions and even worships different forms of god and goddess.

The tribes of Bastar are also known for their colour arts and crafts. The Bastar Dusara festival is the most famous in the region. The tribes of Bastar are also amongst the earliest to work with metal and have expertise in making beautiful figurines of tribal gods, votive animals, oil lamps, carts and animals.

6. Demographics

6.1 Population

The population of Bastar district in 2001 was7, 06,656. As per 2011 (estimates) censes the population of the district is 8, 32,653. The rural population is about 85 per cent and urban population about 15 per cent. This shows the highly rural nature of the Bastar economy much more in comparison to Chhattisgarh (77 per cent) and India (69 per cent).

(Source: Census 2011, Chhattisgarh)

6.2 Sex Ratio

The sex ratio of undivided Bastar district is 1024 female for every 1000 male which is similar to patterns observed in tribal dominant districts. It is to be noted that sex ratio of undivided Bastar is much higher than Chhattisgarh (991) and India (940). While the sex ratio highlight the more female population than men population, it is important to note the variations within blocks in Bastar district. As per 2001 census, Bastanar and Tokapal blocks had a high sex ratio of about 1044 and 1045 while the more urbanized Jagdalpur block has sex ratio of about 976 female for every 1000 male population. The higher sex ratio points towards a higher gender equity in Bastar society. (Annexure – 2)

6.3 Scheduled caste and Schedule Tribe

Bastar is a tribal dominant district. The estimated scheduled caste population in the district is about 16.65 thousand and the scheduled tribe population is 5.17 lakh as per 2011 census. The scheduled caste population was about 2 per cent and ST population 62 per cent in the district. The major tribal groups found in the district are Gonds, Abhuj, Darda Maria, Bison Horn Maria, Munia Doria, Dhruva, Bhatra, Halba etc.,

Scheduled caste and Schedule Tribe

2001 Census category	Bastar (2001)	Bastar (2011 est)	Chhattisgarh	India
Scheduled caste	14,374 (2.0 per cent)	16,653	2,418,722 (11.6 per cent)	166,635,700 (16.2 per cent)
Scheduled tribe	438,482 (62.1 per cent)	517,078	6,616,596 (31.8 per cent)	84,326,240 (8.2 per cent)

(Source: Census 2001 & 2011, Chhattisgarh)

6.4 Religion

In regard to distribution of the population across different religions about 96.87 per cent are the Hindus, about 0.79 per cent are Muslims and 1.33 per cent Christians. (Annexure – 3)

6.5 Literacy

As far as the literacy rate in undivided Bastar district is concerned, about 54.94 per cent are literate. Among the male the literacy rate is 65.70 per cent and among the female the literacy rate is 44.49 per cent. (Annexure – 4)

It is to be noted that the literacy rate as per 2001 census was 40.4 per cent for the divided district. Assuming a 10 per cent increase this could be around 50.4 per cent in the divided district. An important aspect to note is the variations among the blocks. There are inter district variations as per 2001 figures. While Jagdalpur block had literacy rate of about 64.2 per cent, Bastanar had a literacy rate of 11.9 per cent and Darbha a literacy rate of 24.4 per cent. Variations in literacy rates show inequitable reach of education among the blocks.

7. Land utilization

The district has a geographical area of 4.03 lakh square hectares. The land utilization pattern reveals that about 20.8 per cent i.e., an area of 83.7 thousand square hectares of the area is under forest coverage. About 46.6 per cent i.e., an area of 1.87 lakh square hectares is the net sown area. Only about 2.7 per cent area of the net sown area i.e., 5.3 thousand square hectares is under irrigation (Annexure – 5)

8. Physical Infrastructure

8.1 Electrification

Almost all the villages are electrified in Bastar district. About 98.7 per cent villages in Bastar district is electrified. However it is to be noted that the majority (just above 50 per cent) of the households have single p of just one bulb.

Total inhabited villages	Total electrified villages
618	610 (98.7 per cent)

(Source: District Statistical Handbook – 2010-11, Bastar)

8.2 Roads

Bastar district is well connected through roads to Andhra Pradesh and Orissa. It has about 955.53 kilometers of pucca road and 121.2 kilometers of kuchha road. The pucca roads in villages have been built under Prime Minister sadak yojana. The roads have been constructed and maintained by a variety of agencies including the PWD, local government, forest department and rural transport agencies. However it is only the PWD and the local government agencies that have built pucca roads. (Annexure – 6)

8.3 Education

Through the Sarva Shiksha Abhiyan (SSA) program, the educational infrastructure has spread to the villages. There are about 1839 primary schools, 648 middle schools, 36 high schools, 72 higher secondary schools, 5 colleges and 3 professional colleges. There are about 1.02 lakh enrolled in primary school, 44.2 thousand in middle school, 21.8 thousand in high school, 9.6 thousand in higher secondary school, 4.8 thousand in colleges eight hundred in professional colleges. A larger number of schools in the district are run by the tribal department which in turn is overlooked by the education department. The infrastructure for education is even poorerwhere higher education is concerned and also the variety in terms of courses. The students have to opt for Raipur to pursue courses and the majority end up dropping out.

The number of teachers at the primary level is 4510, middle 2374, high 508, Higher Secondary School 761, Colleges 55 and 39 teachers in Vocational institutes. The availability of teachers is very low, especially at the primary level where a large number of children are attended by one teacher.

Particulars	Number	Boys	Girls	Total	Teachers
Primary School	1,839	52,078	50,142	102,170	4,510
Middle School	648	22,553	21,834	44,287	2,374
High School	36	1,136	10,480	21,846	508
Higher secondary School	72	5,401	4,287	9,688	761
Colleges	5	2,814	2,016	4,830	55
Professional colleges	3	446	380	826	39

(Source: District Statistical Handbook – 2010-11, Bastar)

8.4 Health

Medical services are inadequate. The district has about eight community health centers, 41 primary health centers and 240 sub-health centers. There are about 450 beds in community health centers, 187 beds in primary health centers. There are also about 23 ayurvedic health centers, one homeopathic center and one Unani center. However, these facilities are not accessible in

the interior areas. Majority rely on local herbs. In urban areas such as Jagdalpur there are a few private clinics and hospitals.

Health Infrastructure in Bastar

Community health centers		Primary health centers		Sub health centers		Ayurvedic health centers		Homeopathic centers		Unani centers	
Total	**Beds**	**Total**	**Beds**	**Total**	**Beds**	**Total**	**Beds**	**Total**	**Beds**	**Total**	**Beds**
8	450	41	187	240		23		1		1	

(Source: District Statistical Handbook – 2010-11, Bastar)

The number of medical staff is also inadequate. There are only 260 nurses, 49 compounders and 318 other health workers serving a population exceeding 8.32 lakhs. There are only 21 registered medical practitioners.

8.5 Drinking water

All the villages have the drinking water facility. While 514 villages have hand pump facility, about 96 have tap water facility.

Drinking water facilities in Bastar

Villages free from pay water facility	Villages with hand pumps	Villages with tap water	Total
610	514	96	610

(Source: District Statistical Handbook – 2010-11, Bastar)

8.6 Banks

The district has about 52 banks. 31 of these are scheduled commercial banks, 7 are cooperative banks and 14 are regional rural banks.

Scheduled commercial Bank	Cooperative Bank	Regional Rural Bank	Foreign Banks	Total
31	7	14	0	52

(Source: District Statistical Handbook – 2010-11, Bastar)

8.7 Cooperatives – Agricultural

The district has about 37 cooperatives with a membership of 1.02 lakh.

Total	Membership	Capital
37	102,241	4,311.89

(Source: District Statistical Handbook – 2010-11, Bastar)

9. Occupational break up

9.1 Work participation rate

The data reveals a high work participation rate in the district at 51.1 per cent. This stands at 57.5 per cent for male and 44.9 per cent for female. The higher availability of labor for work participation points towards high potential to attain economic growth with directed efforts in building human resources. (Annexure – 7)

9.2 Occupational distribution

Occupational distribution pattern reveals that about 81.1 per cent of the population is involved in primary sector, 1.4 per cent in household industry and 17.5 per cent in tertiary sector. Gender wise 73.6 per cent male and 90.6 per cent female are engaged in primary sector. The number of agricultural laborers is higher in proportion 57.0 per cent among female than the male at 23.2 per cent. Male are more predominant in service sector at 24.8 per cent than female at 8.2 per cent. (Annexure – 8)

10. Livelihoods

The rural economy in Bastar has been almost entirely confined to agriculture and NTFP. Livelihood opportunities allied to agriculture or in Non-farming sector offer substantial potential for growth. These include horticulture, forestry, poultry, piggery etc. Tribal handicrafts of Bastar are increasingly winning market attention at the national and international levels. However, volume and consistent quality in production are seen as barriers to growth.

10.1 Economic activity groups in Bastar

An estimated forty per cent of livelihoods are forest based, thirty per cent are agriculture based and fifteen per cent are dependent on animal husbandry. Another 15 per cent income of people comes from wage labor. The following are the key economic activity groups: -

Agriculturalists

People with land, who depend almost entirely on cultivation, either on their own holdings or on the holdings of others, they supplement their income and consumption with animal husbandry, and sundry labor at times. Some of them have also diversified into small services or small manufacturing activities.

Laborers

People without land or with little land survive by working as farm and casual labor. They also work in the non-farm sector in mines, small shops, on construction sites and as part of the urban workforce.

Agriculturalists and Forest gatherers

Agriculturalists and forest gatherers are the ones living with some landin the vicinity of forests. In areas adjacent to the forests, most people (including those who own some land) gather minor forest produce. A major part of the household consumption and income is based on forest gathering, with agricultural activities providing supplementary income.

Forest gatherers and Labourers

Forest gathers and laborers are the people living close to the forests with very little land or without their own land. They are primarily dependent on forest produce, which they gather and sell or directly consume. Occasional labor on fields or in the forest supplements their income. Sometimes they migrate to other places to sell their labor.

Manufacturers

Manufacturers are traditional occupation based producers. These include the weavers, the blacksmiths, carpenters, chattai (woven mats of bamboo or other grasses) weavers and tailors, bamboo craftsmen and the potters. They operate in the cottage or household sectors, in tiny units, which may be family-owned and worked, or may even have some contracted workers. Some people have taken to modern manufacturing, operating electrical repair or lathe shops. These are located in the big villages or along main roads.

Service persons

Service persons include traditional as well as modern service providers. This group is bridging traditional livelihoods and new opportunities, sometimes replacing but often merging with each other. It is a growing segment and its expansion is fuelled by the need for manufacturers and users to establish common ground. It tends to be based on simple and easily understood transactions. Entry barriers are requirements are few. Even as the demand for some services is declining – for those offered by cobblers, for example, there are newer trades that are springing up – car and tractor mechanics, for instance, based on apprenticeship and ‘on the job training ‘systems. The processes of skill acquisition tend to break social and cultural barriers, as people work together at dhabas (food stalls) workshops and construction sites.

Organized sector

People in the organized sector with jobs in public / private organized sector require formal education, this segment includes public sector service, and employment in offices, industries, and educational institutions and in development related services.

Handicrafts

An area where handicraft is most widely practiced in Bastar is Kondagaon (kondagaon is now a separate district). Many products are made from such art such as vessels, jewelry and the images of the local deities and some decorative. The methods of preparation of the products are quite simple and also called as the lost wax technique that happens to be perfect for the tribal settings.

10.2 Sector based livelihoods

Agriculture, Horticulture, Animal Husbandry, Industry and Non-farm sector offer opportunities for livelihood promotion in the district.

10.2.1 Primary sector

Primary sector including agriculture is the dominant sector of the economy and contributes to large scale livelihoods in the district and about 81 per cent of the people are dependent on this sector.

Land distribution pattern

The average land size is about 2.7 hectares. The land distribution pattern shows that 35 per cent marginal farmers hold 10 per cent of the agricultural area; 23 per cent of the small farmers hold 13 per cent of the agricultural area; 42 per cent of semi-medium, medium and large farmers hold 77 per cent of the agricultural area.

Cropping pattern

The cropping pattern shows that while food crops are cultivated in 92.7 per cent of the cultivated area, non-food crops are cultivated in 7.3 per cent cultivated area. Paddy cultivation exists in 73.2 per cent of the total cultivated area. Paddy cultivation is more prevalent in Jagdalpur, Bastar, Bakawand and Tokapal with over 80 per cent area under the same and less prevalent in Lohandiguda, Darbha with less than 70 per cent and Bastanar at less than 50 per cent. Maize cultivation exists in 4.5 per cent of the cultivated area. (Annexure – 9)

The yield of various crops is generally low in the district due to very low replacement rate of seed, lack of irrigation facilities, less use of fertilizers and use of primitive methods of agriculture. SRI paddy cultivation is being adopted in over hundred demonstration plots. There has also been a shift towards maize cultivation during the past decade.

The pattern of livelihood in Bastar continues to be dictated by tradition. Even today, agricultural practices are traditional. Use of wooden ploughs is overwhelming while the number of iron ploughs is negligible. The same is true of bullock carts. The number of tractors is negligible while the bullock carts are all pervasive.

The use of traditional agricultural implements has lowered the production of agriculture. The kharif crops grown here are paddy, urad, arhar, jowar and maize. The rabi crops include til, alsi, moong, mustard and gram. Collection and sale of forest produce and other forest-related work supplements meager agricultural incomes.

Most people do not find employment all year round. The cycle of floods and droughts makes livelihoods extremely vulnerable. The people are often forced to resort to money lender in times of crisis, which usually means a life of continued indebtedness. The absence of alternate employment opportunities is responsible for the high incidence of poverty in the area. In the Bastar plateau, irrigation coverage is only 2.7 per cent. The irrigation sources include primarily tube wells and wells providing irrigation coverage to 1,743 hectares.

Source	Canal	Tube wells	Wells	Pond
Members	75	1,156	2,847	90
Area (in ha)	457	1,509	234	705

(Source: District Statistical Handbook – 2010-11, Bastar)

Exceptionally fortunate is its water resources, in general the region receives good amount of rainfall but also has rapid run off due to undulating terrain. There is potential for water harvesting.

10.2.2 Animal Husbandry

The district has huge animal population which includes 3.12 lakh cattle, 74 thousand buffalo, 19 thousand sheep, 95 thousand goat, 43 thousand pigs and 4.14 lakh poultry. (Annexure – 10)

Veterinary services are also inadequate. However these services have been active and treated/ vaccinated many animals. The veterinary infrastructure includes nine hospitals and 38 dispensaries. About 1.34 lakh animals were treated and about 9.51 lakh birds vaccinated.

Hospitals	Dispensaries	Animals treated	Badiya Animals	Vaccinated Birds	Artificial inseminations done
9	38	134,314	9,818	951,362	6,283

(Source: District Statistical Handbook – 2010-11, Bastar)

10.2.2.1 Dairy

Dairy as an activity is underdeveloped in the district. This is due to cultural factors – whereby milk consumption among tribes is considered a taboo. Per capita milk consumption remains at a mere 113 ml per person per day as compared to national figure at 232 ml and ICMR prescription of 250 ml. The animal population is non-descript and are purchased from Andhra Pradesh and Madhya Pradesh with involvement of traders / middlemen. They provide very low yields leaving

very little or no marketable surplus. Private dairies are meeting the major part of the demand of milk. Milk cooperatives were started but are now defunct. Processing unit started at Jagdalpur could not function as a result.

10.2.2.2 Sheep, goat and pig rearing

Sheep, goat and pig rearing are subsidiary occupations of the people in the district. The villagers rear a few animals to meet family consumption and the surplus is marketed locally. The activity is not being taken up on a commercial scale. However, there is a growing demand for meat and pork.

10.2.2.3 Poultry farming

The district has favorable climatic conditions for poultry farming. There is increasing consumption of poultry meat and eggs. Per capita consumption of meat and eggs is only 1.35 kg and 105 per annum as against the requirement of 15 kg and 180 eggs per annum respectively. Production of meat and eggs during 2010-11 was 2.3 lakh MT and 1482 lakhs respectively. Poultry manure has high organic value and can be used for increasing the yield for all crops which are at low levels. There was about 11 lakh bird population as per 18th livestock census. Due to increasing demand, at least two truckloads of birds and one to two truck load of eggs arrive daily from neighboring state of Andhra Pradesh.

10.2.3 Fisheries

The district being land locked, the scope for fisheries is restricted only to freshwater capture and culture fisheries. So far the activity has not gained importance and the farmer / fishermen, in general, are not well aware of the benefits that would accrue from commercial / scientific culture. There more than 6000 families that depend on fisheries for their livelihood. The fish production is only 3306.92 MT which is well below the demand. Freshwater prawn farming is gaining momentum in the district. There are about 15 fisheries cooperatives with a membership of 616.

Fishery cooperatives	Total members	Trained fishermen	Insured fishermen	Ponds allotted	Fish production (in metric tons)	Total water area (in ha)
15	616	605	605	12	3,306.92	3,028.350

(Source: District Statistical Handbook – 2010-11, Bastar)

10.2.4 Horticulture

The soil and climatic conditions of the district are suitable for growing a variety of horticulture crops and medicinal and aromatic plants. Presently cashew and mango plantation is in existence in the district. The area under horticulture crop during 2010-11 is as follows: -

	Fruits	**Vegetables**	**Spices**	**Medicinal & Aromatic**	**Floriculture**
Area (ha)	14,400	9,115	4,350	1,705	87

Production(mt)	58,470	105,525	27,325	11,091	289

(Source: PLP, NABARD, Bastar – 2010-11)

The area under mango, cashew and vegetables has been increasing over the past few years. In the absence of processing units, the farmers are not getting proper remuneration for the produce and therefore, not showing much interest in growing such crops. There is scope for growing vegetables and floriculture crops. The NHM being implemented is expected to give the desired boost to the sector. Farmers are hesitant towards Jatropha plantation as infrastructure for seed collection and processing is yet to be set up.

The sector is also subject to heavy dependence on agencies outside the state for procuring planting materials. Lack of assured irrigation facilities, excessive dependence of farmers on paddy cultivation, inadequate extension support, long gestation period of various crops and inadequate support from formal credit system are the impeding factors.

10.2.5 Non-Farm sector

Non-farm sector (NFS) plays an important role in the rural economy as it promotes employment / income generating activities with the locally available resources and prevents migration of rural people to the urban areas. NFS activities can be broadly grouped into rural artisans / craftsmen, tiny, cottage & village industries, agro industries, handlooms, ancillary units, SSI etc.

10.2.5.1 Handicraft

The Bastar district specializes in the preparation of items from the Dhokra Handicraft. This process calls for a great of precision and skill. The artifacts prepared from Dhokra technique of this art use cow dung, paddy husk and red soil in the preparation, beeswax being the most important one. Apart from contouring, wax wires are also used for decoration purpose and for giving a finishing touch to artifacts. From the Bell Metal Handicraft of Chhattisgarh in India, the real genius and creative faculty of the artisans come into picture and thus make for some of the most wonderful pieces of art.

The Dhokra and Bell Metal Handicraft can be found all over the world but the way in which the artisans of Chhattisgarh carve the things by the impression of their sheer dexterity is worth watching. Some of the handicraft items are so appealing that the tourists take them back as souvenirs.

10.2.5.2 Industry

The economy of Bastar district is based mainly on agriculture and forest produce. Lack of irrigation facilities, negligible exploitation of ground water resources, delay in rural electrification due to forest area demarcations and delay in energisation of pump sets, poor public transport system, negligible processing of MFPs poor marketing arrangements leading to exploitation by middlemen / private Traders, non-implementation of some programmes in some areas on account of naxal problems are some of the issues which are impeding the growth of agriculture and forest produce. The district is endowed with abundant natural resources. However, there are no major industries. The district is categorized as industrially backward and various incentives are being provided by the State Govt. to attract investments. Low literacy level, lack

of awareness, inadequate public / private initiatives have also contributed to its backwardness. With the proposed setting up of steel plants in the district and adjoining Dantewada district, industrialization is expected to get a big boost in near future.

Bastar district is industrially underdeveloped. Agro-based and mineral-based industries are the main industries of the district. There are about 163 agro based units and 72 mineral based units.

Registered industrial units (No)	436
Registered Medium and Large unit	2
Employment in large and medium industries (No)	150
Estimated average number of daily workers employed in small scale industries	06
No of Industrial areas	04
Turnover of small scale industries (in Lakhs)	10,251.24
Turnover of medium and large industries (in Lakhs)	4,920.00

(Source: Brief Industrial profile of Bastar District, MSME, Raipur)

There are no large scale industries in Bastar district. NMDC is setting up an Iron & Steel plant in Nagarnar area. Tata steel will also be setting up a plant in the district. These together are expected to create huge employment.

The potential service industries that can be started in the district include: (a) photocopying, (b) desktop publication,(c) internet café, (d) auto repair & service, (e) tailoring, (f) photo studios, (g) cable TV networking, (h) advertising agency, (i) marketing consultancy and (j) typing center.

The potential MSME units which can be started in the district include: agricultural Implements, Engineering Workshop, Steel Almirah, Automobile Service Station, Cutleries, Aluminum Utensils, SS Water Filter, Computer Furniture, Hair Brushes, Measuring Tapes, Mosaic Tiles, Roofing Tiles, Pre-fabricated Building Material, Screen Printing, Synthetic Gem Cutting, Lime, Building Bricks (semi-mechanized), Granite Tiles and Slabs, Saw Mill, Wooden Accessories, Wooden Toys, Wooden Carts, Carom Boards, Coins, Strikers Chess Boards, Coins Wooden Furniture Black Board Packing Cases Building Materials Wooden Agricultural Implements Ready Made Ladies Wear Cotton Thread Gents Ready Made Garments Cotton School Bags Textile Screen Printing Wind CheaterSoft Toys Infant Garments Interlock Knitted Fabrics Knitted Socks (Cotton / Nylon) Manufacture of Shirt (Top) and Skirts Mosquito Net School Uniforms Fruit Canning Mango R.T.S. and Soft Drinks Pickles,Jam,Jelly and Squashes Instant Noodles Mango Pulp Fruit Juice Concentrates Dehydrated Tomato and Tomato Sauce Pomegranate – Ayurvedic Medicine Ginger & Garlic dehydrated powder, oleoresin Cashew Nut Shell Liquid(CNSL) Papaya Based Products Tuti Fuiti Tamarind Powder Mushroom Cultivation / Processing Cold Storage Bakery / Baking Products Chilly Powder / Turmeric Powder Flour Mill Tamarind Powder Instant Food Herbal Extraction Protein-rich Biscuits Mango Bar, Mango Jelly Dehydrated Vegetables Vegetable Pickle Spices and Curry Powder, Pappad Making, Maize Flakes, Potato Wafers / Chips, Fruit Jam and Jellies Tomato Ketchup and Sauce, Instant Pickles,

Rice Flakes, Puffed Rice, Mini Modern Flour Mill, Namkin Mixture or Bhujiya etc.

11. Women

Bastar is one among the few districts in the country where the female population is more than the male and as per the 2011 census; the female-male ratio is at 1024. The female population has in fact shown an increase of 18.60 per cent as against 16.95 per cent in respect of male during the period 2001=2011. The total women population in the district is an estimated 4.21 lakh. About 71.5 thousand i.e. 17 per cent of the women are gainfully engaged either in agriculture, allied activities or in small/cottage industries.

Women play a major role in the social and economic life in the rural areas. The women in tribal communities are the main bread-winnersin the family. Owing to traditional/cultural beliefs and also due to poor literacy, they do not adopt family planning. Child marriage is a common feature among tribes. A typical tribal woman looks after the family, children, goes for labour-work, procures forest produce, prepares M*ahuwa, Landa, Salfi* drinks from the available forest products and sells them in the local markets. Weekly shandies/*haat/ bazaars* are held every week in the nearby areas. The women in many areas of the district walk as far as 15 - 20 km to reach a *haat/ bazaar* with loads of forest products carried on their heads.

There is good scope for encouraging women to come together as SHGs. They can be involved in making/processing forest products, viz., broom sticks, honey-making, rope making, bamboo-products, deseeding/packing tamarind**,** etc. Majority of the Public Distribution System PDS stores and mid-day meals/ ready to eat centers in the district are being managed by women SHGs.

There are very few programmes specially designed for lending to women. However, under most of the programmes, sub-quotas are fixed for coverage of women. Further, in the absence of accurate data on coverage of women under various programmes, the monitoring of the lending actually made to the women is not being properly made in the district / block level fora. As per the figures reported to the LDM office, the loans to women at 4527.28 lakh constituted about 6 per cent of the total loans outstanding of all the banks as on 31 March 2011.

13. Financial inclusion

The banking services in the districts are being provided by 52 bank branches and LAMPS. The average population per branch is about 16000 and the average number of villages and staff per branch is 16 and fourrespectively. Only a little over 50 per cent agricultural families have received Kisan credit cards (KCC) in the former united Bastar. As against 1.66 lakh agricultural families in the district, only about 0.93 lakh KCCs were issued. In addition to the banks, there are about 226 post offices providing deposit facilities to the people. The banking outreach is observed to be satisfactory in Jagdalpur, Kondagaon and Pharasgaon blocks and very less in Bastanar, Darbha, Keshkal, Makdi and Vishrampuri block. The implementation of various government sponsored programmes and routing of pension, scholarships, NREGP payments etc. through the banks are bringing more people into the financial inclusion fold.

All the branches of commercial banks and RRB are computerized, whereas the Cooperatives lag behind. The LAMPS are provided with computers mainly to facilitate work of paddy procurement. Lack of computerization coupled with less manpower is one of the main reasons for the slow progress of the banks in expanding their reach. Making available hardware/ software

and personnel to handle computers, adoption of technology, implementation of common MIS and taking care of the backup and security arrangements would go a long way in bridging the gap.

In the united Bastar district there are about 16.75 thousand SHG bank accounts. About 9.4 thousand have been credit linked through banks.

As on 31 March 2010		During 2010-11		Cumulative as on 31 March 2011	
No of Saving Bank A/C opened	No of SHGs credit linked	No of Saving Bank A/C opened	No. of SHGs credit linked	No of Saving Bank A/C opened	No. of SHGs credit linked
15,952	8,475	801	961	16,753	9,436

(Source: PLP 2010-11, Bastar)

The SHGs can play an important role in spreading the Financial Inclusion programme as they are the grass root level micro organisation.

The players involved in promoting Self Help Groups (SHGs) in the district include the NGOs and the DRDA. The NGOs include Pradhan, BAIF, Bastar Seva Mandal etc., The SHG penetration under the NRLM program is limited presently and restricted primarily to Jagdalpur block. The SHGs are primarily involved in savings and credit activities. There are very few cases of micro-enterprise activities taken by individual SHG women. The SHG women are primarily engaged in primary sector activities such as cultivators, agriculture labor, goat and poultry rearing, minor forest produce collection (tamarind, cashew, mahua, chironji, sal etc.,), construction labor, basket weaving etc.,

Youth are mostly engaged in primary sector activities as cultivators, agriculture labor, minor forest produce collection (tamarind, cashew, mahua, chironji, sal etc.,) and construction labor. Engagement in non-traditional activities is primarily as unskilled labor within the district or in surrounding districts and states. A major dropout takes place by the time they complete education up to middle level. In the absence of lack of access to vocational skills education, they end up as unskilled labor. Instances of self-employed enterprises are limited due to lack of access to credit, absence of linkages to government schemes for promoting micro-enterprises etc.,

Methodology

Methodology

Objectives

The broad objective of the livelihood mapping exercise is to

(i) Provide an end-to-end to solution with respect to financial and non-financial service for Self-Help Groups (SHGs) and

(ii) Identify vocational skill building opportunities to create employment to the unemployed youth by studying three major livelihood subsectors and two services sector activities in Bastar district of Chhattisgarh.

Specific objectives

- to analyse the role of different stakeholders in the cashew, tamarind and poultry sub-sectors.
- to identify key gaps in the subsectors at different stages of production
- to recommend practical and implementable end-to-end solutions to address the gaps come up with appropriate institution models to organise the community
- appreciate the current scenario of masonry and electrician services in the district and to understand the potential for employment in near future
- Identify the skill gaps in masonry and electrician service sectors and to reflect on demand and supply side issues to bridge the same.
- Understand the special needs of the community with regard to improvement of quality of life.

Shortlisting of sub-sectors and services sector activities

Shortlisting of subsectors has been done on the basis of

(i) Subsectors in which the community is interested to play active role to strengthen their own livelihood portfolio

(ii) Subsectors that contribute substantial income to a large number of people in the district

(iii) Subsectors which are traditionally and culturally part of lives of local communities and have better scope for upgrading and also potential for large scale expansion

(iv) Subsectors which have untapped high market potential to enhance household incomes

(v) Subsectors which cut across major livelihood sectors like agriculture, agri-allied and forestry, and

(vi) Subsectors and enterprises those are easily acceptable to the communities in question.

Shortlisting of services sector activities/ skilled services have been done on the basis of

(i) Skilled services which have good demand in current as well as in future and fairly remunerative especially to the youth

(ii) Skilled services potential for creating wage employment and self-employment

(iii) Skilled services which have limited entry and exit barriers also feasible for the least and little educated

Following the set criteria the subsectors and skilled services shortlisted to study as part of the livelihood mapping exercise is

Subsectors and service sector activities studied and rationale for shortlisting

Subsector/ Service sector shortlisted		Rationale for shortlisting
Subsectors	Cashew cultivation	Cashew cultivation is emerging livelihood activity in the district especially for the small and marginal farming communities. Climate and soil conditions are favorable for the cashew cultivation. Forest and Horticulture departments, NABARD (WADI project - 3300 acres) are currently engaged in this intervention and also planning to intensify the cashew cultivation in the district. While there is huge potential for SHG women to engage in productivity enhancement, procurement and processing so far it is untapped. As the successful models already exist in the adjacent states (Orissa and Andhra Pradesh), that successful model has not been attempted to replicate in the district to impact large number of livelihoods especially the small and marginal farming communities.
	Backyard Poultry	Backyard poultry activity is traditional livelihood among the tribal and non-tribal communities and especially actively managed by the women. Backyard poultry play a vital role in arranging the 20 per cent of the household income of the rural and tribal communities in the district. Despite huge potential to increase the production and to launch the aggregation initiatives, 90 per cent of the chicken market is captured by the neighboring state Andhra Pradesh. There is a greater chance to promote (i) individual and (ii) collective based Livelihood activities around the poultry subsector. Intervening in this sector will contribute to enhance the household income at one hand and also to make the district self-sufficient in meeting the chicken demand.
	Tamarind collection and Marketing	The tamarind market at Bastar is said to be Asia's largest. Tamarind collection from the forest has been found to be the most important traditional livelihood activity among tribal communities especially the SHG women. It is noticed that more than 95 per cent of the tribal families in the district engaged in this activity. The district is known for tamarind production and the produce supplied to southern Indian states. While there are few successful models with in the district, they have not been spread across the district and that made the community to limit with low income. Due to several gaps in the subsector the opportunities are effectively utilized by the local community. Studying this subsector can help to address such gaps and can contribute for strengthening the subsector in the district ultimately to impact large scale livelihoods in the district especially women.

Service sector activities	Electrician	Chhattisgarh as an electricity rich state, most of the villages are electrified even in the remotes. On the other hand the industrial development is also in taking off stage along with huge construction work. These conditions highlight the demand for large number of trained electricians in the district. Further very little number of training institutions is not able to produce enough number of trained electricians and that's why most of the rural electricians are "learned practitioners" rather than trained electricians. Studying this service sector intervention and the recommendations will help out the institutions to create livelihood opportunities for rural youth (Semi literates) to start up (i) self-enterprises and wage employment.
	Masonry	While huge construction work taking place in the cities, suburbs and even in rural areas, most of the illiterate youth from the villages engaged in the masonry activity as unskilled labour and earning meager amounts. Lack of short term courses to enhance their skills in the masonry work limiting them to low income. The District Industries Center highlighted that there is a huge scarcity of trained mason people to work for the upcoming industries like TATA and NMDC along with many other small scale industries. With breakup of the former Bastar district into smaller districts has resulted in need for setting up new infrastructure - new government departmental offices, new settlements etc., creating growth in demand for masonry. Understanding this scenario, the Masonry has been shortlisted to study and to make recommendations to enhance the skills of the rural youth in the district.

Sampling Strategy

To understand the subsectors in a comprehensive way, the study locations are identified based the following parameters

- Representation of villages from different blocks as well as different social communities
- Representation of least accessible/remote and highly accessible (to market, communication, support services)
- Intensity and prevalence of the subsector activities
- Representation of villages where different players engaged in the subsector activities (Intervention villages of forest department, horticulture department, NABARD, CSOs etc)
- Representation of forest and non-forest villages
- Across the three subsectors 20 villages include tribal and non-tribal villages are visited and interactions held with the community. Subsector wise study villages made available in Annexure -11

Methodology

Subsector analysis: The subsectors were studied using standard sub-sector analysis methodology as follows:

1. Selection of subsector
2. Introduction to the subsector
3. Draw preliminary subsector map
4. Specify environment affecting the key players
5. Refine subsector map

6. Quantify 'overlays' of particular interest
7. Analysis of dynamics
8. Identify sources of leverage
9. Explore opportunities for leveraged intervention/ Choosing intervention point

Service sector analysis: The services sector activities are studied by following six important steps

1. Understanding the broad industry/ service sector growth in the given district
2. Shortlisting of the service sector activities for study
3. Assessment of industry requirement (Demand conditions)
4. Assessment of availability of skilled human resources (Supply conditions)
5. Assessment of enabling environment
6. Drawing conclusions and recommendations

While adopting different approaches for subsector analysis and service sector analysis, the data collection has been done by using the following tools for both subsector and service sector analysis.

Data collection methods

Subsector analysis	Service sector analysis
▪ Focus Group Discussions ▪ Individual interactions with the progressive people of the subsector (eg: farmers, best practitioners, etc.) ▪ Drawing and refinement of subsector map ▪ Stakeholder consultations, interviews and discussions ▪ Transect walk to subsector locations (primary production, processing and packing etc)	▪ Focus Group Discussions with youth and their parents ▪ Stakeholder consultations with industrialists, heads of Industrial Training Institutes (ITIs) ▪ Consultations with the Industries department officials ▪ Visits to individual enterprises

Significant people interviewed

While studying the subsectors and service sector activities, diversified stakeholders are consulted including community. More than 15 FGDs were conducted in different villages for the livelihood mapping and subsector and service sector wise significant people interacted are

Significant people interviewed

Cashew	Tamarind	Backyard poultry
▪ Horticulture department ▪ Forest Department ▪ NABARD ▪ Processing unit manager ▪ WADI implementing NGOs	▪ Agriculture Department ▪ Krishi Upaj Mandi ▪ TRIFED ▪ Forest Department ▪ CGNWFP Mart ▪ Prathmic Vanopaj	▪ Animal Husbandry department ▪ Veterinary Assistant surgeon ▪ Veterinary field officers ▪ Government poultry form ▪ Private poultry form ▪ Kochias

▪ Farmers associations ▪ Forest protection groups ▪ Retail shops	Samithis ▪ SHG ▪ Tamarind Processing Unit managers ▪ Primary Collectors ▪ Kochiyas ▪ Middleman ▪ Exporter ▪ Traders ▪ Shopkeepers	▪ Poultry agents (Vyapari) ▪ Chicken vendors(Basket) ▪ Chicken vendors (Shops)

The Cashew sub-sector in Bastar District

Subsector study report – 1
Cashew in Bastar

1.0 Macro scenario: Cashew cultivation

The cashew is a tree in the family *Anacardiaceae*. Its English name is derived from the Portuguese name for the fruit of the cashew tree, caju, which in turn is derived from the indigenous Tupi name, acadu. Originally native to Northeast Brazil, it is now widely grown in tropical climates for its cashew seeds and cashew apples. Beginning in Brazil the plant has expanded to other parts of the globe.

1.1 International scenario

Initially, cashew grew wild in Brazil. The Portuguese spotted this when they invaded Brazil in the year 1500 AD. The seeds were brought by Portuguese sailors and planted in east coast of Africa. The trees grew wild along all the entire coast of Mozambique, and then also spread to Tanzania and Kenya. The first to harvest these wild cashew nuts were native Africans. Later, these nuts were sold to the Portuguese traders, who in turn sold them to the merchants who shipped them to India, where these nuts were shelled.

At present, cashew is cultivated in abundance in areas having a sufficiently warm and humid climate. The cashew plantations are spread across almost 32 countries of the world. It is grown in an area of 40.97 lakh ha with a production of 37.2 lakh tons. The average yield of the cashew crop is approximately 916 kg/hectare of land. Cashew market is highly concentrated with India and Brazil providing half of world production and 95 per cent along with Vietnam, Nigeria, Mozambique and Tanzania.

1.2. National scenario

Cashew was introduced by the Portuguese during the 16th century in India. It was first introduced in Goa, from where it slowly trickled down to the Konkan coastline to Malabar and the rest of Kerala. It spread to other parts of India only towards the last quarter of the 20th century. Eight states in India have taken up cashew cultivation on a commercial scale. These include Andhra Pradesh, Goa, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu and West Bengal. Pockets in other states have also started cashew cultivation – namely Assam, Chhattisgarh, Gujarat, Meghalaya, Nagaland and Tripura. An area of 9.53 lakh ha (2010-11) in India is under cashew cultivation with an estimated annual production of about 6.74 lakh tons of raw cashew nut.

Table: Area under cashew cultivation

(Extent in 000 ha, Production in 000 MT and Productivity = MT/HA – India)

2005-06			2006-07			2007-08		
Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
837	573	0.8	854	620	0.8	868	665	0.8
2008-09			**2009-10**			**2010-11**		
Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
893	695	0.8	923	613	0.7	953.2	674.6	0.7

It was only in the 20th century that commercial value of cashew was realized. Cashew started appearing on global markets towards the middle of the 1920s. Trade was dominated by two countries: India, the sole exporter of cashew kernels and the United States, the only buyer. Raw cashew nuts hardly figured in world trade because in India kernels were produced entirely from raw nuts grown within the country. It was with the emergence of East Africa as a supplier that trade in raw nuts started. The expansion of the global market for cashew kernels in the 1960s prompted India to adopt a systematic and integrated approach towards developing the cashew economy, including reducing India's dependence on imported raw nuts. In the mid-1960s the government launched a cashew development programme and in 1966 a separate Directorate of Cashew Nut Development was established under the Ministry of Agriculture. As a result, India witnessed remarkable expansion in the area under cultivation although the processing industry is still heavily dependent on imported raw nuts.

India also happens to be the second largest producer and exporter of cashew in the world next only to Vietnam. The following table shows the exports of cashew kernels carried out by India during 2010-11 and 2011-12. See annexure – 12 for understanding "Export of Cashew Kernels from India during 2010-11 to 2011-12"

India happens to be the biggest cashew processor in the world. The highest number of small and marginal farmers, especially living on the coastal belts of India, depends on cashew for their livelihood. Nearly 2 lakh workers, more than 90 per cent of whom are women, are directly employed in cashew processing factories which are concentrated mostly in Kerala. It is estimated that nearly two million people are involved, directly and indirectly in cashew cultivation, processing and marketing.

1.3 State scenario

In Chhattisgarh, cashew is cultivated in 19,677.5 hectares of land. The production is about 9,182.3 metric tons with productivity per hectare at 0.47 metric tons i.e., 470 kgs.of processed cashew. Department of Horticulture, Government of Chhattisgarh proposes to develop Raigarh and Jagdalpur districts as cashew clusters in the state. The climatic conditions of these districts are conducive to cashew cultivation. Farmers in the districts are also tuned to grow this crop. At present cashew is cultivated in 7,700 hectares in Jagdalpur and 8,068 hectares in Raigarh.

Table: Area under cashew cultivation and Production in Chhattisgarh 2010-11

District	Ha	Production (in metric tons)	Productivity (per hectare)
Durg	50	0	0.00
Rajnandgaon	3	3.3	1.10
Jagdalpur	7,700	3,310	0.43
Kanker	1,781	1,781	1.00
Dantewada	228.5	94.3	0.41
Korba	200	60	0.30
Raigarh	8,068	3,456	0.43
Jashpur	985	275.8	0.28

Surguja	330	0	0.00
Narayanpur	302	162	0.54
Bijapur	30	39.9	1.33
Total	**19,677.5**	**9,182.3**	**0.47**

2.0 Cashew cultivation in Bastar District

2.1 Salient features of cashew cultivation in Bastar district

- Bastar district has a conducive climate for cultivation of cashew.
- Cashew cultivation on a commercial basis is absent in Bastar district.
- About 7,700 hectares (19,000 acres) in Bastar District is under cashew cultivation. In 2011-12 it was estimated that that 6,800 hectares were under cashew cultivation. The expected yield was around 3,060 metric tons with productivity at around 0.45 metric tons per hectare.
- Cashew cultivation is primarily pre-dominant in Bakhawan block. It is gradually expanding to other blocks in the District such as Keshkal, Bastanar, Bastar and Lohandiguda.
- Cashew has been grown both in forest commons and individual orchards.
- Forest department was the initial actor to promote cashew cultivation in forest commons. The management of these forest commons was left to van sansrakshan / van prabandhak samithis.
- Horticulture department and NABARD have been promoting cashew cultivation of late.
- Despite the cashew cultivation which is also expanding cashew processing is underdeveloped in Bastar district. About 3 processing units were set up of which only one is functional.
- Jeypore the cashew processing cluster is located close by in neighboring state Orissa. Bastar is one of the suppliers of raw cashew to cashew processing units in Jeypore.
- Cashew cultivation is seen as one of the sources of income apart from maize / paddy cultivation and wage labor.
- Horticulture department has motivated farmers to come together to part away their unutilized land for cultivation of horticulture crops (Cashew and Mango). Necessary technical guidance is being offered for the same. Farmer associations (unregistered) have been formed to take care of management of orchards, sale of outputs etc.,
- NABARD has taken up WADI program on a large scale. About 3 NGOs have initiated WADI in the district which includes Bastar Seva Mandal, Agro con and BAIF. Under the same 3000 acres have been covered under the WADI program. Farmer's association and Self-help groups of women have been formed.

- There are three cashew processing units in the district. However, only one(a private) of this is functioning. This too is functional only for a period of four months i.e., during February to May. Forest department and Horticulture department are setting up their own processing units.
- Assuming that each household has parted away a land of 1.5 acre for cashew cultivation, the number of beneficiaries deriving incomes from cashew farming could be around 13,000. This is bound to expand with expansion of cashew area beyond Bakhawan block.
- The raw cashew produced in Bastar district is supplied to local processing units and processing units in neighboring state (Orissa) - Jeypore and Koraput. In these cashew clusters there are about 34 micro cashew processing firms and 5 cashew nut shell liquid firms.
- The primary link between the cashew farmer and the cashew processing units are the middlemen usually called Kochiyas[1]. Kochiyas may be from within the district or outside the district (even state such as Orissa).
- Overall there is huge scope for further expansion of cashew plantation and promoting cashew processing in Bastar district.

2.2 Cashew cultivation trends in Bastar District

It is estimated that about 7,700 hectares in Bastar district is under cashew cultivation. Forest department was the first agency to introduce cashew plantation in the district. Cashew cultivation in Bastar district started in the 1960's. It was from 2006-07 Horticulture departments and NABARD too have started promoting cashew cultivation in the district. The following table shows the trend in expansion of coverage under cashew cultivation immediately following entry of Horticulture department and NABARD. As part of industrial policy which encourages setting up agro processing industries, it encourages setting up 4 cashew processing units in Bastar and Raigarh with 1 at Jagdalpur. In order to boost investments in agro-processing Government of Chhattisgarh encourages in setting processing of cashew nuts and bi-products and processing of cashew bi-products.

The following table shows the trend in expansion of the area under cashew cultivation in Bastar district: -

Year wise area under cashew cultivation in Bastar district

Year	Cashew (in Hectares)
2006-07	1,368
2007-08	7,386
2008-09	7,200
2009-10	7,400
2010-11	7,700

(Source: Department of Horticulture- Bastar)

[1]Kochiya is a small trader who is a middleman and acts as a primary link between the primary collectors and traders

2.3

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NABARD

NABARD has been promoting cashew cultivation under WADI program. WADI model is a holistic approach addressing production, processing and marketing of the produce and other needs. The core of the program is development of "Wadi" i.e., small orchards covering one or two acres. Under "Wadi" 25 plantations of cashew is being done along with 30 mangoes and other forestry species. Three NGOs are involved in WADI program in the district which includes Bastar Seva Mandal (BSM), Bhartiya Agro industrial foundation (BAIF) and Agro con. Each of them is promoting the program in 1,000 acres each.

Wadi Plantation in Rajnagar by BAIF

Horticulture Department

Horticulture department has a scheme for encouraging plantation of cashew crop. This is provided for a maximum area of four hectares per beneficiary. An amount of Rs. 40,000 is provided per hectare. A maximum of Rs. 20,000 per hectare (50 per cent cost for meeting the expenditure for planting material and cost of material for INM/IPM etc.,) in 3 installments of 60:20:20 subject to survival rate of 75 per cent in second year and 90 per cent in the third year for a maximum area of 4 ha per beneficiary is provided. The services offered by Horticulture department include supply of plantation material, technical guidance and advice and a subsidy worth Rs. 12,000.

The following table shows the pattern of the selection of beneficiaries under Horticulture Department cashew cultivation program. A major section of the beneficiaries are from the tribal community. Till date about 6,412 beneficiaries have been selected who have been provided the plantation material and other training / extension services.

Table: Year wise status of cashew cultivation in Bastar district (in Ha)

Year	Plantations target	Plantations done	Beneficiary Farmers (in No.)				
			Scheduled Caste	Scheduled Tribe	General	Total	Women
2006-07	500	500	7	371	78	456	49
2007-08	2,000	2,000	9	1,892	328	2,229	174
2008-09	2,000	1,574	1	1,872	202	2,075	249
2009-10	976	760	24	821	80	925	58
2010-11	0	0	0	0	0	0	0
2011-12	150	50	0	33	0	33	6
2012-13	2,000	1,135	1	625	68	694	61
Total	**7,626**	**6,019**	**42**	**5,614**	**756**	**6,412**	**597**

(Source: Horticulture Department)

The major cashew varieties grown include V-2, V-3, V-4, V-6, RI-3, H-2/16 and 1608.

Forest Department

Forest department was the first actor to initiate cashew cultivation in the district. In this region the state forest department is a far bigger player in cashew production than individual cultivators. Planting cashew trees on barren land in the state forests is common. The forest department generally does not involve itself in cashew harvesting, instead has transferred the responsibility to van sanrakshan samithis.

Cashew Plantations promoted by Forest Department in Amagudapara, Bakawan block

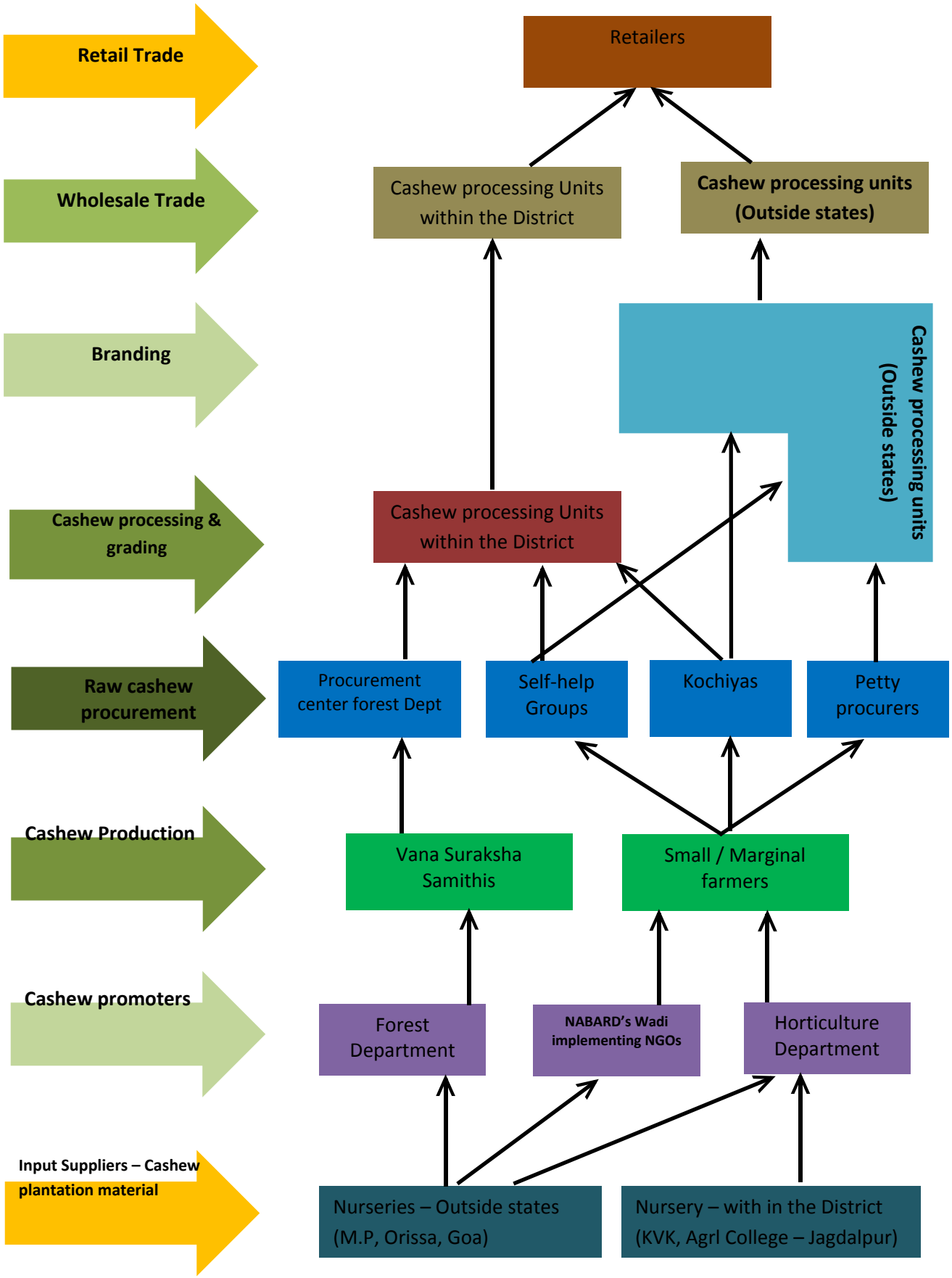
Agricultural college

Agricultural college in Jagdalpur is also encouraging cashew cultivation. Quality cashews are being supplied. They are procuring about 50 varieties of cashews. Multi trials are being carried before being supplied. The popular varieties are V4, Hybrid 68, Indra Kajuvan, and Hybrid 255. About 30,000 plantations are being supplied every year. They are also involved in training in skills for the processing industry.

Directorate of cashew and cocoa development

The key player involved in promotion of cashew cultivation is the Directorate of Cashew and Cocoa development located in Kochi. The various programs under it include: a) New planting of cashew with normal density; b) replacing senile plantations and replanting with clones of high yielding varieties, c) rejuvenation of cashew plantation, d) technology dissemination – frontline technology demonstration – demonstration of cashew in farmer's field, e) technology demonstration of cashew in the institutional farms, f) training on cashew apple utilization, g) establishment of farm level processing unit of cashew nut, h) up-gradation of existing old cashew processing units. However, only of these programs namely new planting of cashew with normal density is running in Bastar district.

3.0 Sub-sector Map of Cashew in Bastar district



3.1 Activities in various stages of the value-chain

The following table shows the various activities at different stages of value chain.

Pre-production stage	▪ This stage involves procurement of plantation material. The various seed varieties namely V2, V3, V4, V6, RI3, H2/16 and 1608 are procured from nurseries in Orissa, Goa, Andhra Pradesh and Kerala. ▪ The procurement of plantation material is done by Horticulture department, Forest Department, NGOs namely Bastar Seva Mandal, Bhartiya Agriculture Industrial Foundation (BAIF) and Agro-con. ▪ The procured plantation material is supplied by the intervening agency to the intended / selected beneficiaries. ▪ The intervening agency trains the beneficiaries in package of practices. ▪ Institutions of cashew growers are also built up in the form of farmer producer groups by the intervening agencies.
Production stage	▪ Preparation of land is taken up to ensure that it is leveled and ensures soil and moisture conservation. This is finished before onset of monsoon season i.e., during May-June. ▪ Pits are dug with a spacing of 7 to 9 meters. Cashew is planted in pits of 60cm*60cm*60cm size. Pits are filled with topsoil mixed with farmyard manure or compost (5 kg) or poultry manure (2 kg) and rock phosphate (200g). BHC (100g) is also added to the soil mixture. ▪ The grafted plant obtained from superior mother plant is planted at the onset of monsoon. ▪ Mulching to increase the growth and yield of cashew. ▪ Manuring and fertilization of plantations through use of bio-fertilizers and chemical fertilizers. This is done in May/June and September/ October. ▪ Weeding before the end of the rainy season. ▪ Intercropping of relevant varieties of crops e.g., rice, maize, vegetables. ▪ Training and pruning of cashew plants during August / September. Flowers during first and second year removed. ▪ Pesticide spraying to control pests. ▪ Harvesting and Yield (February – May)
Processing stage	▪ Preliminary cleaning ▪ Roasting ▪ Shelling and Separation ▪ Drying ▪ Peeling
Marketing stage	▪ Raw cashew supplied by cashew growers to kochiyas ▪ Kochiyas supply the cashew to cashew processing centers in Rajnagar and units in Jeypore. ▪ The processed cashew is graded and packed. ▪ Graded and packed cashew sent to wholesalers markets in Andhra Pradesh, Kerala and Uttar Pradesh including Chhattisgarh. ▪ The processed cashew supplied by wholesalers to retailers and from them to consumers.

3.2 Role of actors involved in Cashew cultivation

The roles of actors involved in various stages of the value chain are as follows: -

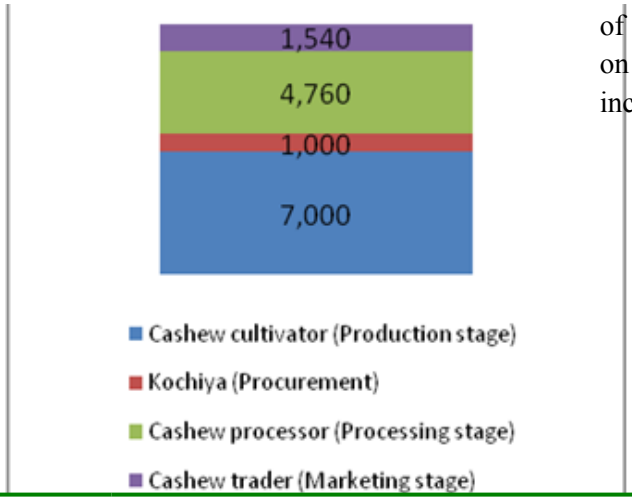
Primary Producers / Collectors	▪ Acquire plantation material from intervening agency – Horticulture department, Forest Department, NGO (BSM, BAIF, Agro-con). ▪ Plantation and production processes – land preparation, pit digging, plantation, mulching, manuring, inter-cropping, mulching, weeding, pruning, harvesting ▪ Drying the harvested produce ▪ Sale of the produce to Kochiyas (within the village or in the weekly markets)
Intervening agencies	▪ Selection of project beneficiaries. ▪ Supply of plantation material to beneficiaries. ▪ Training farmers in package of practices ▪ Extension services ▪ Institutional development services (formation of farmer producer groups, self-help groups, van samrakshan samithis)
Kochiyas	▪ First level of trader who visits villages for collection of raw cashew with a bicycle ▪ Procurement of harvested cashew from the primary producers ▪ Supply of the harvested cashew to processing units
Haat trader	▪ Sale of produce to haat trader by the cashew growers
Processing units	▪ Collection of harvested cashew from Kochiyas / Haat trader ▪ Processing – namely preliminary cleaning, roasting, shelling and separation, drying and peeling ▪ Grading and packing ▪ Supply to wholesalers in Andhra Pradesh, Kerala, Chhattisgarh and Uttar Pradesh
Transporters	▪ Bulk transport of processed cashew ▪ Transportation of cashew produce to different parts of the country
Wholesalers	▪ Supply of cashew produce to retailers
Retailers	▪ Direct sale to consumers

4. 0 Value chain Analysis

The existing value chain patterns reveal that the maximum value addition takes place during the processing stage. For a 100 kg cashew, the cultivator sells it to Kuchiya at Rs. 7,000 @ Rs. 70 per kg. The kochiya procures the same and sells it to the processing units at Rs. 8,000 i.e., @ Rs. 80 per kg. Through 100 kgs of raw cashew it is possible to produce 22 kilos of cashew kernels. The factory price of the cashew kernels is Rs. 580. Thus on 100 kilo cashew, 22 kilos of cashew kernels are produced which cost Rs. 12,760. A value addition of Rs. 4,760 takes place at the processing stage. The same when it gets sold by the wholesalers is sold at Rs. 650 per kilo i.e., Rs. 14,300 for 22 kilos of cashew kernels.

Value chain – 100 KG of Cashew

Cashew cultivator (Production stage)	7,000
Kochiya (Procurement stage)	8,000
Cashew processor (Processing stage)	12,760 (@22 kilos * Rs. 580 per kilo)
Cashew trader (Marketing stage)	14,300 (@22 kilos * Rs. 650 per kilo)



It is important to note that the price patterns of various cashew kernels may vary based on the grades. The various grades may include the following: -

Grade	Meaning
W-180	White wholes,170-180 no. of kernels in1 lb or in 454 grams
W-210	White wholes, 200-210 no. of kernels in 454 grams
W-240	White wholes, 220-240 no. of kernels in 454 grams
W-320	White wholes, 300-320 no. of kernels in 454 grams
W-400	White wholes, 380-400 no. of kernels in 454 grams

The existing patterns of value chains reveal that the cashew cultivators are placed low in the hierarchy. The existing trade channels take care of the margins of the Kuchiya, processing units, wholesalers and retailers. While there are issues related to productivity enhancement that needs to be taken care of simultaneously the losses due to existing trade channels also need to be looked into.

5.0 Constraints in value chain

Constraints are being faced in the different stages of the value chain as discussed below.

5.1 Constraints in pre-production stage

Shortage of availability of plantation material

One of the major constraints limiting expansion or the area under grafted cashew plants is the non-availability of planting material. The local agricultural institutions like the Krishi Vigyan Kendra (KVK) and Agricultural College in Jagdalpur are not able to meet the requirement for

plantation material. Hence these are procured from nurseries in Orissa. If the aspirants of cashew plantations do want plantation material to be procured locally, it has to be ordered in advance from the agricultural college. However, this is in shortage.

Procurement primarily through governmental and non-governmental institutions
Only the ones who have been included as potential beneficiaries under the programs – by horticulture department, forest department or WADI program are eligible for getting the plantation material under the respective programs. Individuals desirous of initiating commercial cashew cultivation may find it difficult to take up the same due to lack of access to plantation material.

Motivational factors lacking for pursuing commercial cashew cultivation
Since the gestation period of cashew cultivation is longer – i.e., about four years the farmers do not show enthusiasm and come forward to take up cashew cultivation. A great deal of motivation is required for the same. They feel that labor spent in maize and paddy cultivation yields them the returns within a year. Instead they need to wait for at-least four years in the case of cashew cultivation. Hence there is biasness towards paddy and maize.

5.2 Constraints at the production stage
Primary producers and collectors collect raw cashew during February to May. These are sold immediately to take care of the family needs. No thought is given to the unfairness of the existing trading system, awareness of the end user, scientific method of harvesting etc. After collection from the forest commons, orchards they sell at local haat, grocery shops or to the village trader popularly knownas Kochiya.

Non-implementation of crop management practices by the producer
Crop management practices necessary for attaining a successful crop – such as grafting, mulching, weeding, manuring, weeding, pesticide application is not taken up by the producer. The necessary investment of resources – financial and time – required for the same is not allotted. The plants are allowed to grow naturally without any intervention. As a result the mortality rate of crop remains high and growth rates of cashew plants remains low.

Lower productivity due to non-following of PoP and poor irrigation
As mentioned earlier non-implementation of crop management practices leads to higher mortality and lower growth rates of the crops. This also affects the productivity of the cashew crop. Against an average of 25 kgs of cashew expected from each cashew plant, it is able to produce only about 15 kgs of cashew. This means attainment of only 60 per cent potential from each crop. Moreover due to lower survival rates of the planted crops, the actual production tends to be much lower than originally planned.

Poor irrigation facilities
Due to the topography of the area there is high level of water runoff. Despite a decent average rainfall of about 1,200 mm/annum – there is hardly any water available for irrigating the cashew plantation. In one of the WADI intervention areas, water for irrigation was transported through

use of water tankers. However, this is an unsustainable and expensive practice which cannot be pursued on a continual basis. Development of water conservation practices can go a long way in recharging underground aquifiers.

Lack of fencing

Lack of fencing to the cashew gardens result in large cases of crop raiding by buffaloes / cattle and wild animals. This resulted in destruction of cashew plantations in the orchards. Creating a strong fencing requires investment worth Rs. 5,000 in a one acre land which is not affordable by the farmers.

Lack of security / theft

Farmers reported cases of thefts in cashew plantations. Cashew plants are cut down for purposes ranging from cutting for fuel wood purposes to other purposes. Hence the farmers felt that their orchards need to be protected through provision of security personal.

5.3 Constraints during processing

Cashew processing underdeveloped in the district

Cashew processing facilities is very limited in Bastar district. Processing is mostly done outside the district and in the neighboring state Orissa in Jeypore. There were / are about three processing units which started in the district. However, two of them were closed and only one of them is running. Two SHGs were also involved in cashew processing in the district. Both of these too stopped.

Table: Processing units in the District

Name of the unit	Year of establishment	Processing capacity per day (in quintals)	Processing capacity per year (in quintals)	No. of workers	Markets
Bastar kaju udyog, bejripadr, Bakawand	2005	4	900	100	Jaipur, Udaipur, Meelbada, Sri Ganganagar, Jhansi, Karvi, Rohtak, Tanakpur, Nagpur, Madhya Pradesh, Chhattisgarh
Rajpreet industries, Markel	2008	5	800	120	
Madpal kaju udyog, Madpal, Prabhakar Naidu, 9425258599	2006	2	500	60	
Swasahayatha samuha gram karmari, Bastar	2009				
Swasahayatha samuha, Rajnagar, Bakawand	2010				
Total		**11**	**2200**	**280**	

At present Horticulture department and Forest Department have set up processing units in Rajnagar. Buildings for the same have been constructed and machinery brought. Processing is yet to start. There is huge potential to start atleast 5 processing units in the district.

Absence of direct linkage with processing units

The cashew farmers do not have direct linkage with the processing units. Firstly, there is only one processing unit which is working in the district. Two units which were started earlier have been closed. In the absence of processing units within the district, most of the cashew produced in the district is procured by the processing units in Orissa. There are no instances of selling of cashew produce directly to the cashew processing units. The produce is sold to kochiyas who are the middlemen.

Non-involvement of producers in processing – a higher value addition process

The cashew producers are not involved in processing. A major value addition takes place during the stage of processing. Farmers are not involved in this stage and thus are not able to be part of this higher income earning phase. Mere restriction to production phase means lack of proper returns on the produce.

Poor plucking practices among the producers

The farmers pluck the raw cashew at an early stage. This results in poor quality of cashews available to the processing units for processing of cashews. Farmers are not aware as to the implication of wrong plucking practices at the stage of processing. Processing units find it difficult to process early plucked up cashews.

Absence of skilled personal required during processing

Cashew processing units require specialized types of skills for the processing. Among the various processes such as preliminary cleaning, roasting, shelling & separation, drying and peeling – shelling & separation and peeling require specialized skills. Availability of labor possessing these skills are a shortage in the area.

Shortage of labor required for processing units

The cashew processing units find it difficult to find labor for engaging in processing units. The community prefers NREGS work and other forms of wage labor. Engaging in wage labor with processing units is not seen as an attractive option.

5.4 Constraints during marketing

Distress selling and low price realization at the producer end

Cashew farmers are not able to store and preserve the production and sell it relatively quickly. The need for immediate cash forces them to sell their produce at a lower price. This often works to the disadvantage of the producer. While the middlemen, processing units and marketers benefit from this the farmers lose out.

Non availability of credit for producers

Credit is an important input in the production process. After collection and drying, they sell off the collection for cash to Kochiyas. Immediate cash needs often force them to sell the collection to predetermined traders at predetermined rates. Market prices have little value for them. They cannot access the mainstream credit market either individually or collectively. Theydo not have enough space to stock the produce also hence the primary producers resort to distress selling. As mentioned earlier the farmers lack poor access to credit for meeting various needs – both productive and household needs. This contributes to distress selling as they need to gain cash for meeting household requirements.

High level of dependence on middlemen

There is high level of dependence on Kochiyas who are the village level traders. Kochiyas may be from within the village or from adjacent villages / block / market town or district. He acts as a vital link in the whole process. Because of the small amount of raw cashew with primary collectors, they generally prefer to sell those in the nearby markets or in the nearby shops. The relationship between the Kochiya and the primary collectors appears cordial but is exploitative and the former provides cash advances to the latter in times of need, during the period of food shortages. Primary collectors always depend on Kochiya as they think him as their well-wisher. At any haat, Kochiya would be present. He intercepts the primary collectors on their way to haat and tries his best to buy the cashew there only and mostly succeeds in doing so. He always gives the same price as prevalent in haat. Kochiya has got enough strategy to convince the primary collectors and buy the collections. He always makes immediate payment for the cashew bought by him. His own profit comes from the commission, which is usually Rs. 10 per kg. He cheats the illiterate people by under weighing their collection but always sells it to the trader by properly weighing it. Kochiya also has very good relationship with the small traders. Master Traders are the ones who carry the raw cashews and supply it to the processing units. They fix up a margin of Rs. 10 per kg.

Improper weighing practices by middlemen

Kochiya takes advantage of the situation of the farmers during the weighing process. While offering lower price and under weighing is prevalent across all classes of farmers, the level of cheating is much higher for the interior areas. Kochiya buys cashew from farmers under baila system. Baila is equivalent to 1.2 kilos. In interior areas, farmers are able to get only Rs. 50 pe bais. Thus they are able to get an amount equivalent to Rs. 40 per kilo. The prevalent prices for a kilo of cashew are Rs. 80 per kilo. The exploitation through improper weighing remains high.

6. Recommendations

Encouraging community nursery

Plantation material at present is procured from outside states. The same is available in very little quantities in the district at Agriculture College. Promoting community nurseries can go a long way in addressing this problem. SHG members can be trained in nursery management practices.

Encouraging SHG involvement in procuring and marketing raw cashew

It has been seen that procurement of raw cashew is done by the various intervening agencies and supplied to individual farmers. The process of procurement from intervening agencies and

distribution among the beneficiaries can be taken up by the Self-help groups. Also under the existing systems of trade – the raw cashew is supplied by cashew producers to the Kochiya. Instead SHGs could gather the cashew produce from the village and sell it in bulk to the cashew processing units at a higher / bargained price. The following financial product will help the local self-help groups to take up the cashew procurement and marketing.

Financial product for SHGs to take up cashew procurement and marketing

S.No	Particulars	Rate	Quantity	Amount in Rs.
A	**Fixed cost**			
a.	Weighing machine	5000	1	5000
B	Storage boxes	300	10	3000
	Sub total			**8,000**
B	**Variable cost**			
a.	Estimated procurement by SHG (in kilos)	80	9000	7,20,000
b.	Cost of jute bags (for packing)	5	180	900
c.	Transportation cost	16	1000	16,000
	Sub total			**7,36,900**
	Grand total (A+B)			**7,44,900**
C	**Benefit**			
a.	Sale of cashew @ Rs. 90 per kilo	90	9000	8,10,000
D.	**Net Benefit = (Benefit-Variable Cost)**			**60,100**
E.	Benefit to SHG			60,100

Credit linkage to ensure avoidance of distress selling

The cashew producers resort to the act of distress selling to meet immediate cash needs. In the process of distress selling they sell it to Kochiya at lower price. The non-availability of cash forces them to sell at a lower price. Credit linkage which ensures in their consumption smoothening can go a long way in ensuring that they do not resort to distress selling and instead sell them to a processing unit at a better price.

Promoting storage facilities through community storages

At present there is absence of storage facilities to aggregate the dry cashew produce. Storage facilities which ensure a common place for aggregation, storing can be useful. The aggregated point could be used as a place from where the produce could be sent to the cashew processing units.

Training SHG members in crop husbandry practices

As mentioned earlier, the farmers do not follow the proper crop management practices necessary for attaining a successful crop – such as grafting, mulching, weeding, manuring, weeding, pesticide application is not taken up by the producer. The SHG women could be trained in these practices which they could implement in the fields. The SHG women could receive a service fee for the same.

Training SHG members in cashew processing skills

As mentioned earlier cashew processing requires some specialized skills – especially during shelling, separation and peeling. Availability of labor possessing these skills is a shortage in the area. Processing units require Shellers, Peelers, Graders and Roasters. The SHG women could be trained in these processing skills – including right from preliminary cleaning and roasting. This will ensure that skilled personal are available for the cashew processing units. It will also be useful if SHGs are desirous of taking up cashew processing on their own.

Encouraging investment in processing

There are very few players engaged in processing activity at present. Only about 5 per cent of the processing of the cashew produced in the district is taken up in the district. The rest goes to Orissa for processing. The players who are going to get involved in the same include the Forest Department and the Horticulture department who will be setting up their own cashew processing plants. Apart from this private investment in cashew need to be encouraged and the District Industries Centre (DIC) can play a vital role in this

Training SHG members in financial literacy and business skills

Apart from the technical skills which are required for cashew cultivation and cashew processing – another important dimension is for the SHG women to possess financial literacy and business skills. Such skills will enable them to be in a better bargaining position especially when they deal / negotiate with the traders and the processing units.

Building linkages with processing units

At present no direct linkages exist between the cashew cultivators and the processing units. The only linkage seems to be through the kutchiyas, haat traders. It will be important to establish a direct linkage with the processing units – which will ensure that the farmers gain a better price for their produce. At present commission element of kutchiyas is taken over by them resulting in losses. Direct linkage with processing units will enable them to have a better price for the dry cashews.

Working closely with van sanrakshan samitis / farmer associations

At present some of the community based institutions such as van sanrakshan samithis and farmer associations are involved in management of orchards. SHGs could build community level linkages with these community based organizations. SHGs could jointly take up responsibilities of management of plantations, procurement, aggregation and marketing of cashew produce.

Building convergence among the players

At present a number of players are involved in promoting cashew cultivation - which include forest department, horticulture department and NABARD wadi implementing agencies. Each of these are involved in their own way in promoting cashew cultivation. Forest department encourages cashew cultivation in forest department land. Horticulture department encourages the same by aggregating the lands of a group of farmers and forming farmers association. NABARD encourages the same on individual lands of farmers. While each of these is in their own way involved in promoting cashew cultivations, there is need for convergence among these departments and community based institutions.

7. Financial Product for Cashew

NABARD could launch a financial product – a credit worth Rs. 17,250 spread over three years. This would be Rs. 5,550 in the first year, Rs. 5,775 in the second year and Rs. 5,925 during the third year. This would cover 75% cost of inputs, cost of soil conservation measures and cost of irrigation.

Cost of cultivation –Plantation of Cashew (50 plants / acre)					
1. Labour requirement (Mandays & Cost)					
	Items of operation	**1st year**	**2nd year**	**3rd year**	**Total**
i.	Land clearing & Peg marking (50 pits)	15	2	1	18
ii.	Digging of 50 pits (60*60cm)	15			15
iii.	Pit filling, Planting, Staking, mulching & shading	5	2	1	8
iv.	Weeding twice a year	3	9	6	18
v.	Soil conservation measures, making basins / terracing	5	5	5	15
vi.	Application of manures and fertilizers	2	3	5	10
vii.	Plant protection operations	2	3	4	9
viii.	Fencing, watch & ward	10	6	4	20
ix.	Miscellaneous operations like removal of sprouts, de-blossoming, transportation of inputs, training and pruning	3	5	4	12
	TOTAL	60	35	30	125
	Wages @ Rs. 125 per manday	**7500**	**4375**	**3750**	**15625**
2. Cost of Inputs - Conventional methods					
	Items of operation	**1st year**	**2nd year**	**3rd year**	**Total**
i.	50 grafts @ Rs. 30 per graft	1500			1500
ii.	Gap filling @10% (5 grafts)		150		150
iii.	Manures &fertilizers	500	750	1000	2250
iv.	Plant protection chemi+B7cals	400	800	900	2100
	TOTAL	**2400**	**1700**	**1900**	**6000**
3. Cost of soil conservation measures		2000	3000	3000	8000
4. Cost of irrigation		3000	3000	3000	9000
Cost of cultivation under conventional methods excluding labor i.e. (2+3+4)		7400	7700	7900	23000
NABARD scheme for 75% credit		**5550**	**5775**	**5925**	**17250**

Returns from Cashew (4th year onwards)

The returns from cashew would start yielding from 4th year onwards – which would be Rs. 36,000 per year.

Total Plants	50
Survival Rate (75%)	37.5
Productivity of cashew (Per kg)	80
Total Production	450
Total returns (in Rs.)	36000

8. Community based cashew cultivation and processing

As mentioned in the recommendations there is need to evolve a community based institutional structure which ensures involvement of SHG members in various stages of the value chain.

Level	Institutional Structure	Parameters	Expected role
1	SHG (Activity based)	▪ Female members from cashew plantation households to form into SHG groups	▪ Aggregation of groups with similar economic background and economic interests. ▪ Building social capital of cashew planters ▪ Each SHG to be trained in plantation management / productivity enhancement skills (apart from the routine SHG activities) ▪ SHGs to play role in cashew plantation management to ensure higher production
2	Village development committees	▪ One nominee from each type of SHGs to be nominated in Block level SHG federations	▪ Village development committees to have cashew procurement committee (apart from financial inclusion related committees) ▪ Primary collection / aggregation / procurement of cashew to be taken up at village level by VDCs ▪ VDCs to send the procured cashew to block level organization for processing
3	Block level organization VDCs	A▪ block level federation to be formed of cashew planters	▪ Block level federations to act as agencies which attempt towards expanding the role of women and into higher value addition processes. ▪ Block level federations to receive training in financial literacy and entrepreneurship development. ▪Building convergence with van

		sanrakshan samithis, farmer associations, producer companies, larger processing units etc., ▪ Primary processing activities (steaming, drying, cutting, peeling and bulk packing) to be carried out at block level ▪ Sorting, grading, value addition and packing of products are done at block level

Rationale for the said Model

For horticulture to emerge as a commercial activity there is need for intervention firstly starting with productivity enhancement with transfer of technology through training in package of practices; secondly to train them in marketing / financial literacy and entrepreneurship for ensuring better returns on the produce and thirdly through training on processing for involvement in higher stages of value addition.

However this is to be achieved through a gradual process of institution building – starting with SHGs at the bottom, SHG block level federations with specialized committees (for plantation management, marketing and processing) and district federations (with a role in building convergence and business development).

9. Conclusion

As suggested above promoting institutions of cashew planters, offering credit plus services, extension services, financial literacy and business development services, promoting engagement with markets and higher end value end processes can go a long way in enhancing higher returns from cashew cultivation.

The Backyard Poultry sub-sector in Bastar District

Subsector study report – 2
Backyard Poultry in Bastar

Poultry in India

Poultry which was a mere backyard venture before the 1960s has been transformed into a vibrant agribusiness with the turnover of Rs. 30,000 crores and the Indian Poultry Industry is emerging as the world's 2nd largest market. Today, India is the third largest egg producer in the world (after China and the United States of America), and the nineteenth largest broiler producer. The Poultry Industry is estimated to be growing at 11 per cent per annum (1991 – 2006)and has occupied the country's GDP growth of 9 per cent and offers employment to millions of people in Rural and Urban areas in the country. While the production of agricultural crops has been rising at a rate of 1.5 to 2 per cent per annum, the production of eggs and broilers has been rising at a rate of 8 to 10 per cent per annum. The Government of India's estimates highlights the constant growth in egg and poultry meat production between 1998 and 2006 in the country and the same is depicted below.

Production of eggs and poultry meat in India 1998 - 99 to 2005 - 06

Year	Egg production (in millions)	Poultry meat (in 1,000 tonnes)
1998 – 1999	29, 476	361.81
1999 – 2000	30 ,447	382.3
2000 – 2001	36 ,631	364.06
2001 – 2002	38 ,729	393.51
2002 – 2003	39 ,823	439.05
2003 – 2004	40 ,403	507
2004 – 2005	45 ,201	507
2005 – 2006	NA	537

(Source:Rajesh Mehtaand R.G. Nambiar, *The poultry industry in India*)

Today, Poultry is major source of meat in India and its share in total meat consumption is 28 per cent against the 14 per cent ten years ago. The National Institute of Nutrition has strongly recommended 180 eggs and 11 kg of meat per capita consumption for our nation. At present, Per capita availability for meat is 1.6 kg. Per capita availability for egg is 1.8 kg or 42 eggs. Average consumption for eggs in major cities is 170 eggs. Average consumption for eggs in smaller cities is 40 eggs, while 20 per cent of Indian population is vegetarian.

The average per capita of poultry meat consumption was estimated to increase from 0.69 to 1.28 kilograms, during the 2000-2004. Analysts' studies reveal that the total egg consumption is estimated to increase from 34 billion in 2000 and to 106 billion in 2020. Several efforts in poultry science and technology have led to the development of genetically superior breeds capable of higher production, even under adverse climatic conditions that offer opportunities for overseas

entrepreneurs to expand export poultry products on a large scale.

There is a significant variation in Indian Poultry industry development[2] across regions. The organized sector of Indian Poultry Industry is contributing nearly 70 per cent of the total output and the rest 30 per cent in the unorganized sector. Broiler industry is well dominated by the southern states in our country with nearly 60-70 per cent total output coming from these states. The layer industry once again is represented more in southern states especially, Andhra Pradesh, Tamil Nadu and Maharashtra producing nearly 70 per cent of the country's egg production. India's 75 per cent of egg produce is consumed by the population of 25 per cent living in urban and semi-urban areas. Presently about 800 hatcheries are operating in India today.

The Poultry Industry today employs around 1.6 million people. At least 80 per cent of employment in Indian poultry industry generates directly by the farmers, while 20 per cent is engaged in feed, pharmaceuticals, equipment and other services according to the requirement. Additionally, there might be similar number of people roughly 1.6 million who are engaged in marketing and other channels servicing the poultry sector.

Poultry in Chhattisgarh

Chhattisgarh is one of the highly tribal populated states in the country where the tribal communities are actively engaged in backyard poultry activity. Backyard poultry activity is emerging as a potential income generation activity in the state as the demand is shooting up especially for the desi variety of chicken. As per the livestock census 2007 the poultry population in the state was 88.98 lakh and there are seven major government poultry farms located at Jagdalpur, Ambikapur, Raigarh, Kondagaon, Koni, Baikunthpur and Durg. The improved variety of chicks are being supplied under the backyard poultry promotion scheme of the Government and people also directly purchase the chicks for backyard poultry activity irrespective of the schemes too. Under the state government's backyard poultry promotion scheme in 2007-08 Rs.64.25 lakh was spent and 14,274 beneficiaries got benefitted. Favorable climatic conditions, traditional expertise and experience of the local communities in rearing chicks caused even spread of backyard poultry across the state including remote and hilly terrains contributed to this.

While backyard poultry is spread across the state, the broiler and layer chicken is imported from the neighboring states like Andhra Pradesh and Maharashtra. A few private poultry forms are also producing broiler and layer birds to meet the local demand in the state but that is not more than 15 per cent of the total demand. Indian broilers and phoenix are the important broiler and layer birds suppliers in the state.

Poultry in Bastar

Bastar district is the third highest producer of poultry meat in the state after Raipur and Surguja district for the year 2010. During 2010-11, Durg and Rajnandagaon districts also became important poultry meat producers in the state. While the tribal population is actively engaged in the production of the *desi* birds through the backyard poultry, the broiler and layer chicken are produced in small scale by the local private poultry farms and most of the demand is met by the

[2]*Source: http://www.indianmirror.com/indian-industries/poultry.html*

private poultry farms located outside the state. Increasing trends in poultry meat production has been found in the district for last 6 years and the same is depicted the in the below table.

Poultry meat production and value in Bastar district (including Narayanpur) and the state

Year	Bastar District		Chhattisgarh	
	Production in '000 kg	Value in Lakhs Rs.	Production in '000 kg	Value in Lakhs Rs.
2007 – 2008	975.66	585.40	9,136.97	5,544.32
2008 – 2009	972.83	875.55	10,476.59	8,846.86
2009 – 2010	1,701.31	1,616.24	17,410.17	16,295.69
2010 - 2011	1,495.15	1,420.40	19,301.26	17,995.4

(Source: Statistical pocket book of Chhattisgarh 2010 – 11)

Poultry activity in the district is dominantly a subsidiary livelihood activity among the tribal households. For the households engaged in chicken shops and poultry farms it is the primary source of income. Poultry meat and live chicken are one of the most traded commodities traded in the weekly haats across the state.

The Animal Husbandry department is one of the key players in the district engaged in promotion of backyard poultry units across the district. The broiler and layer farms existing in the district are the major suppliers of live birds to the different corners in the district and these poultry farms depend on neighbouring states such as Andhra Pradesh for small chicks.

Terminology of Poultry

There are four major varieties of chicken which are found in the poultry subsector of the Bastar district.

1. **Desi chicken:** Aseel and Cari Shyama (Kadakanath) are the two important varieties reared by the local communities under the backyard poultry.

(a) Aseel: The literal meaning of Aseel is real or pure. Aseel is well known for its pugnacity, high stamina, majestic gait and dogged fighting qualities. The name Aseel appears to have been given to this indigenous breed because of its inherent qualities of fighting. The standard weight varies from 3-4 kg for cocks and 2-3 kg for hens. Annual egg production is around 92 eggs and the egg weight at 40 week is around 50 grams.

(b)Cari Shyama (Kadakanath): It is locally known as "Kalamasi" meaning the fowl having black flesh. These are mostly reared by tribes, adivasis and rural poor. The colour of the day old chicks is bluish to black with irregular dark stripes over the back. The flesh of this breed though black and repulsive to look at, is considered not only a delicacy but also of medicinal value. The tribal uses Kadakanath blood in

the treatment of chronic disease in human beings and its meat as aphrodisiac. The meat and eggs are reckoned to be a rich source of protein (25.47 per cent in flesh) and iron. Body weight of the bird is 920g at 20 weeks age. Annual egg production is around 105 eggs.

2. **Improved breed:** The improved breed varieties include Kalinga, Brown Multicolor, Giriraja are reared under scavenging conditions and these varieties are primarily supplied by the government poultry forms. Theyare dual purpose multicolor birds with a higher genetic potential and resembling the desi (indigenous) birds in their physical characteristics. The birds scavenge in the natural habitat and little expenditure is incurred on feed and medicine. These birds have triple advantage of characteristics of the indigenous bird in terms of hardiness, colour, high egg laying capacity like exotic layers, high weight gain like those of broiler birds. This dual purpose birds will have egg laying capacity 150 to 180 eggs per year in the scavenging (free ranging) condition as against 30 – 50 eggs by a desi bird per year. They also attain a body weight of 2.0 to 2.5 kgs in 90 days. The egg weight is 50 grams having tinted brown coloured shell similar to desi birds. Generally the males are sold for meat purpose and hens are retained for egg production.

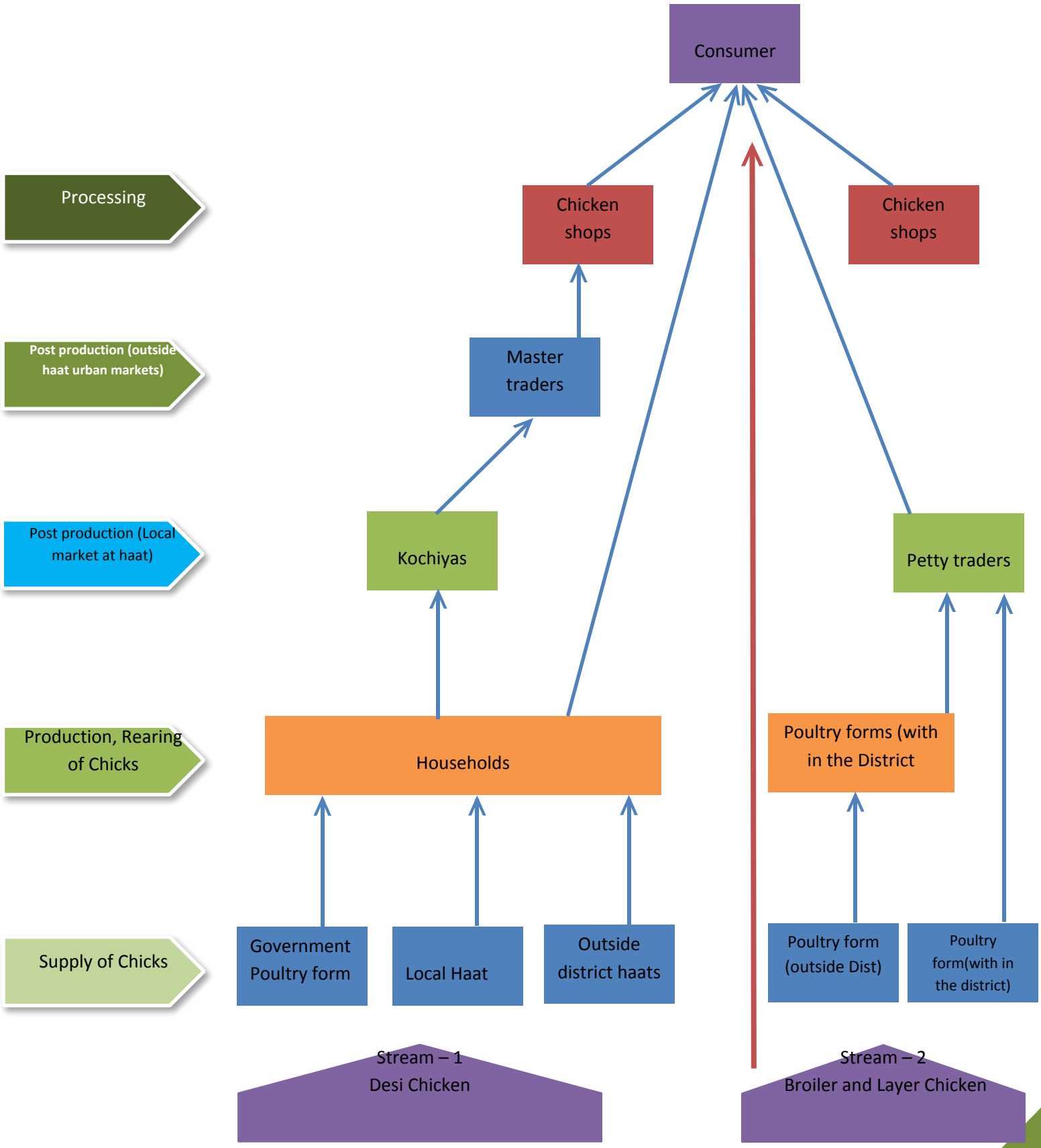
3. **Broiler:** Broilers are chickens (*Gallus gallus domesticus*) bred and are raised specifically for meat production. On a farm they can also have dual use as egg layers since they are only eaten as need arises so egg production is a side benefit.

4. **Layer:** Layers are raised for the production of eggs in large operations but they are culled when egg production drops but on the farm the layers while often used for meat when they get too old to lay are often allowed to live full long lives.

Poultry subsector in Bastar

The poultry sub-sector study is primarily concerned with studying the dynamics in the backyard poultry activityas is being practiced by the local communities in Bastar district. The study has paid equal attention to study commercial poultry activity and the reasons are (i) enormity, wider and deeper spread of the commercial poultry activity in to the remote rural and tribal villages and (ii) though the community is actively engaged in production of desi-chicken, their dependency on broiler or layer chicken is high in terms of consumption. The report tries to capture the details of both the backyard poultry where the local community's involvement is high and the commercial poultry activity in which the role of market players is high.

The Poultry subsector Map
Bastar District



Pre – production stage

Supply of chicks: The desi chicks produced through the backyard poultry activity (production of chicks from their own hens) are the primary source of arranging chicks for rearing at household level. While the household level production arranges70 to 80 per cent of chicks for backyard poultry, few other options discussed below are also the suppliers of desi chicks for backyard poultry. The desi-chicks supply has been done by the three important players. They are

(a) ***Local haats:***People or community procures desi-chicks from the local weekly haats in which people from surrounding villages bring the chicks to the market and sell. The price of one desi-chick with the age of 10 to 15 days comes around Rs. 20 – 40. In fact each and every household finds small chicks are livelihood assets, the distress conditions in the household and fear of disease outbreak among the chicken force them bring their chicks to the market.

(b) ***Outside district/state haats:*** People live in district and state bordered villages visit the nearest weekly haats located in other district and states for procurement of the desi-chicks. Households invest around Rs. 150 to 200 and buy four or five chicks for rearing at backyards.

(c) ***Government poultry farm:***The government poultry farm located at Jagdalpur is one of the major suppliers of desi chicks to different parts of the district. But the variety of desi chicks supplied by the government poultry farm is different from the varieties that the people rear in the villages. This farm supplies cross breed/ improved breed varieties like Vanaraja, Khadaknadh and Aseel. These varieties gain weight in lesser amount of time compared to the traditional variety of desi birds. This farm supply the chicks for government schemes bring implemented by the Animal Husbandry department.

There are two important players involved in the supply of broiler and layer chicks into the district.

(a) ***Private poultry farms from outside the state:*** The private poultry farms from Andhra Pradesh especially from coastal districts are the major suppliers of broiler and layer chicks and live birds for both rearing and meat purposes. There are around7to 8 small and medium sized poultry farms in Bastar district and these farms are the major demanders for the broiler and layer chicks and live birds. These poultry farms rear the chicks and distribute the live birds to the different parts of the district.

(b) ***Local Poultry farms in Chhattisgarh:*** Indian broilers, Jagdalpurand Phoenix broiler farms located at Rajnandagaon and Durg supply broiler, layer chicks and live birds to small poultry farms located in Bastar district. But their contribution is not more than 20 per cent of the broiler and layer market in the district.

Government schemes: The Chhattisgarh state government's backyard poultry distribution scheme is one of the major sources for arranging the chicks for the community across the district. The key objective of the scheme is to introduce poor and small poultry farmers of the state with improved poultry and low input technology, to increase meat and egg production and to ensure

availability of nutritious food to the community.

Under this scheme the household is supported with 55 coloured improved breed poultry chicks of 15 day's old, feed and transportation charges. The cost of the unit is Rs. 1200/- (55chicks @ Rs.17 + Feed worth of Rs.200 and transportation charges of Rs.65) the government provides 75 per cent subsidy i.e Rs. 900 on the total unit cost and the beneficiary contribution is Rs. 300/-. This scheme is entitled for small poultry farmers of ST, SC, and General or OBC categories.

Year wise outreachof "Backyard poultry distribution scheme" in Bastar district including Kondagaon

Year	No of units supported	No of Chicks supplied
2007 – 2008	1,200	66,000
2008 – 2009	934	51,370
2009 – 2010	1,700	93,500
2010 - 2011	1,286	70,730
2011 - 2012	1,417	77,935
Total	**6,537**	**359,535**

(Source: Department of Animal Husbandry, Jagdalpur)

Though the year wise distribution of the units is fluctuating the overall outreach of the scheme is inclining. For the financial year 2012 – 13 the department targeted to support 1600 units in Bastar district and a total number of chicks targeted to supply are 88000.

Veterinary services

The government's veterinary hospitals and dispensaries are the major health care infrastructure available for the livestock in the district. While each of the block in the district having at least one veterinary hospital, a total number of 38 veterinary dispensaries spread across the seven blocks.

Details of Government Veterinary health care service institutions Bastar District

S.No	Name of the Block	No of Veterinary hospital	No of Veterinary dispensaries
1	Jagdalpur	2	12
2	Bastar	2	7
3	Bakawand	1	8
4	Lohandiguda	1	3
5	Tokapal	1	4
6	Bastanagar	1	1
7	Darba	1	3
Total		**9**	**38**

(Source: District statistical handbook – Bastar, 2010-11)

The veterinary hospitals and veterinary dispensaries, primarily engaged in vaccination, artificial insemination activities for the cows, buffalos, sheep and goat. The veterinary services were rarely used by the community for poultry.

Awareness on identification of quality chicks

Having the backdrop of long years of traditional experience in managing the backyard poultry activity, the community identifies the chicks from market by primarily looking at the qualities like activeness, healthy look, colour and weight. As discussed, mere less than 20 per cent per cent of the desi chicks procured from the market for rearing and rest of 80 per cent is being arranged by their own hens from backyards. The skill of identification of quality chicks have never been an issue because of the experience that the community have in rearing chicken.

In the case of broiler and layer, the outside state poultry farms supply the quality chicks and live chicken in truck loads. The local poultry form managers are aware of the percentage of damage (death of chicks) may happen to the live birds during transport due to pressure and climatic conditions. This loss issue has been mutually settled by the supplier and the local poultry farms.

Women – backyard poultry

Though the women and men actively engaged in the backyard poultry activity, the role of women is found much more than men. Women involvement has been found in buying chicken from haats, rearing, feeding, and sheltering of chicks.

Women are not just limited to rearing part and they also involved in marketing of the chicks. Women carry grown chicken to the weekly haats and put for sale. It is also noticed that women also involve in negotiating with the consumers or Kochiyas[3] in getting better price for their chickens. Women are able to continue these negotiations, as they pursue the prices of chicken in the haats.

Largely the backyard poultry has been taken up at household level, and there are hardly any instances like taking up the poultry activity at SHG level and no efforts made by any government and non-government players to promote poultry as a group activity.

Constraints during pre-production stage

During the pre-production stage, the role of the community is found to be limited and the role of suppliers includes government poultry farms, private poultry farms and local poultry farms

[3]Kochiya is a village level trader or a middleman, who procures desi birds from the primary poultry rearers and supplies the birds to the next level of value chain that is master traders.

are significant. Importantly, the entire supply of the improved breed chicks by the government poultry farms targeted to increase the production of chicken and eggs at household level by supplying improved breed birds.

The big poultry farms in the district and the outside the district supplies broiler and layer chicks and live birds to the small and medium sized broiler and layer farms. This mean the poultry activity limited to either at household level (less than 50 birds) or at the small farm level (5000 birds) and the micro farms(250 to 300 birds capacity)did not exist. The key constraints include

- The backyard poultry units supported by Animal husbandry department are around 1300 in a year. When compared these units with the total 330,000 households in the district, this is not even 0.4 per cent.
- As the community is largely limited to backyard poultry units (4 to 15 birds) at household level and no motivation to establish the micro units (poultry forms with the size of 50 to 200 birds). As the community do not have understanding on expansion of the poultry activity to bit larger level, many times the community did not sought the support of the bankers and also the bankers services are not effectively utilized for poultry development.
- While supply of the backyard poultry units, the chicks are vaccinated by the government poultry form, but no vaccination services are available at the weekly haats this lead to increased mortality rate among the chicks purchased from the markets.

Production stage

While the local community continues to be a major producer of the desi-chicken and improved breed chicken, the local private poultry farms produce broiler and layer chicken in the district.

(a) ***The local community:*** The local community includes schedule castes, schedule tribes and other social categories involved in backyard poultry (desi-chicken) activity especially in rural and tribal villages. The average unit size of the backyard poultry is in between 4 – 15 birds. In the remote villages the number of birds' rear by the households are more than 15.The local community consumes only 15 per cent – 20 per cent of their production and supplies the rest to the haats. The local community completely away from rearing of the broiler and layer chicks and just limited to desi-chick rearing this might be because the rearing practices are different for desi and broiler varieties. It is also understood that the broiler rearing needs extra care in terms for shelter, food and health care.

(b) ***Private poultry farms:*** The private poultry farms are basically the rearers of broilers and layer birds in established farms. The private poultry farms can be broadly classified in to two categories (i) Broiler poultry farms and (ii) Layer poultry farms. As per the Livestock census 2007, the bird population in both broiler and layers farms in Bastar district is mentioned in Annexure - 13

(c) ***Government poultry farms:*** The government poultry farm located at Jagdalpur is also involved in rearing and production of the improved breed chicken but the motto is to increase the egg production and chick production.

Egg and chick production by Government poultry farm Jagdalpur

Year	Total Poultry population	Total Egg production	Total chick production
2009 - 10	3,100	253,169	106,481
2010 - 11	1,496	178,672	63,321
2011 - 12 (upto Dec 11)	3,682	129,788	57,406

(Source: http://ahd.cg.gov.in/ahd.cgEnglish/template1.htm)

The Animal husbandry department is the major buyer of the improved breed chicks from the government poultry farm and in turn that chicks are rooted to the community under the backyard poultry development schemes. Further civil society organisations who work for promotion of backyard poultry units with the poor and vulnerable families also procure the chicks from the government poultry. The government poultry farm also take up retail sales but which is not more than 5-10 percent of its total production of chicks.

Backyard poultry is not seen as an enterprise: Though backyard poultry activity continues to be one of the yearlong livelihood activity and part of the livelihood portfolio of the communities, which is not been seen as commercial enterprise activity. This might be because of community's orientation towards the backyard poultry activity. The community primarily sees rearing birds at the household level is for household consumption. Thus the size of the backyard poultry unit did not get expanded and many times the number of birds is reared at household level are not more than 20.

In fact the households supply around 80 - 85 per cent of their backyard poultry birds to the weekly haats to earn some income. This helps the families to have better cash flows and the amount earned by selling of chicken is around Rs. 250 – 400in a month. Even the community is aware of that the backyard poultry make some contribution to the household income every month; the backyard poultry activity was not seen as a commercial activity. Lack of or very limited micro sized commercial poultry units in the surrounding villages or locations to observe as a model and lack of motivation support from the livelihood promoting agencies including government and others.

Shelter: The community shelter the chicken in the cattle sheds but some specific space is made available for the chicken. In the villages the both the cattle sheds and the spaces allocated for chicken are found clean. Though the shelters are clean they are not better enough to maintain the temperature which is essential for survival of birds.

Feeding practices: The community does not adopt any specific and specialized feeding practices for backyard poultry. The birds are fed rice, maize and other local cereals produced by the households and there is no doubt this feed is good for the birds. As the birds are not caged and free to roam, the birds pick their food in the surroundings of the household.

Veterinary care: Community hardly valued the veterinary care in regards to backyard poultry. Except the improved breed supplied by the Government poultry form, the birds are not vaccinated with the initiation of the community. Animal husbandry department claims that the vaccines are available at the veterinary hospitals and dispensaries but the community doesn't pay interest to vaccinate the birds. There is no official data on the mortality rate of the backyard poultry and the community reports that the mortality rate is around 50 per cent and sometimes which may be higher especially during disease outbreaks. The major reason is "protection" followed by disease spread. Fully grown chickens are actually surprisingly hardy and can cope with around 30 degrees above zero. As the winter seasons are cool to very cool in the district chicken are not able to cope up with the climate and remain prone for winter based diseases.

Assistant Veterinary Surgeons (AVS) from the nearest veterinary hospital or dispensary are made responsible to monitor and assist the improved breed units supported by the Animal Husbandry department under the Backyard poultry distribution scheme. But this arrangement did not see great impact on the implementation of the scheme and the mortality rate reported among these units is also more than 50 per cent.

Disease spread: The local communities are unaware of the kind of diseases spreading among the chicken and their attempts to prevent the disease spread is also sporadic. As per the department of Animal husbandry two diseases are prevalent in the district. They are

(i) Newcastle Disease (ND): This is also known as Ranikhet Disease (RD) and is the main killer disease and often wipes out entire backyard poultry units. A highly contagious and severe form of the disease, called exotic Newcastle disease (END), is so deadly that many birds die suddenly without showing any signs of disease. This disease affects the respiratory and nervous systems of birds leading to respiratory difficulty, in coordination, tremors, and twitching of the head. Vaccine is available for birds and is routinely used in poultry flocks. While this can reduce the severity of the disease, it does not completely prevent infection

(ii) Fowl Pox: Fowl pox is relatively slow-spreading viral disease characterized by skin lesions and/or plaques in the pharynx and affecting chickens. The virus persists in the environment for months. It is more common in males because of their tendency to fight and cause skin damage, and where there are biting insects. The duration of the disease is about 14 days on an individual bird basis. This disease can be prevented by vaccination.

Risk mitigation: The risk mitigation measures are poorly propagated and adopted by the community against the high mortality rates are noted in the backyard poultry activity. The awareness among the community on the preventive care is found low and the measures taken by the Animal Husbandry department to address such issue is found sporadic.

At private poultry farms level technical experts constantly monitor the health of the chicks and ensure required vaccination to prevent the diseases. The Government poultry farms are being managed under the supervision of a veterinary doctor and all the risk mitigation measures are well placed.

Constraints at production stage

- The backyard poultry activity has been integral part of the livelihood portfolio of the local communities and more than 80 percent of the rural and tribal households engaged in the activity. The long years of traditional experience and expertise do not turn up in to potential livelihood activity in the form of micro poultry units due to tow main reasons (i) lack of motivation by the livelihood promoting organisations include government, research and civil society organisations and (ii) lack of live example of micro poultry units in the surroundings.
- The veterinary care services were not appreciated by the community and the community is also not aware of the poultry care services are available at the government veterinary hospitals and dispensaries. The interaction between the veterinary hospitals and the community is found very limited. Similarly the efforts of the department, hospitals and dispensaries to motivate the community to make use of the veterinary services for betterment of the poultry activity are also found low.
- The mortality rates in the backyard poultry units and the government supported units remain same and that is around more than 50 per cent. The community have limited awareness on the protection of birds during winter and rainy seasons.
- The institutional arrangement made by the animal husbandrydepartment to monitor and support the backyard poultry is least effective; therefore the mortality rates remain big.

Post production stage

The section of the report tries to explain how the live birds include desi, broiler and layer varieties and chicken has been reaching the consumers by crossing different stages. The value chain of desi chicken is longer and involved by many players compared to broiler and layer chicken's value chain. While the desi chicken's value chain is engaged with several players especially the primary producers, petty traders and chickenshops and the broiler and layer's value chain has very limited players in the process of supplying the birds and chicken to the consumer.

Weekly haat: Haat is a geographic location where the people buy and sell different products and produces and these haats held every week on a defined day. The haats are part of traditionalway of life of the tribal communities. These haats are being managed by the Bazar Samithi Thakedar who gets the authority by winning in the tendering process

Weekly at haat Kotpal village (Odisha)

initiated by the government. The Bazar samithi thakedars collect fee from the traders who use the market space sell different produces and products. Weekly haats are trading points of birds include desi, broiler and layer along with many other commodities and consumables.

In the weekly haats of the district, the community, Petty poultry traders (basket wala) are the major suppliers/sellers of the birds in the haat and the Consumers, Kochiyas, Poultry tradersare the important buyers/procurers of the birds.

Primary poultry rearers: Primary poultry rearers are the major suppliers of the desi birds and theycarryone to ten birds to the weekly haat and put for sale. The primary poultry rearers come to the haats for selling of the birds and to purchase some household items. In the haat itself some pockets are meant for poultry market where the rearers keep their birds for sale. The primary poultry rearers do not required paying any fee to the Bazar Samithi Thakedar as they are more like general public or consumers butnot like a regular poultry traders.

Petty poultry traders: Petty poultry traders purchase birds in small quantum from the local poultry forms exist in the major towns in the district like Jagdalpur. These petty traders carry around 25 to 40 kgs (around 15 to 25 birds) weight of live birds by using a poultry basket and a bicycle. They visit the weekly haats which are locatedaround10 to 40kms distance from their village and put the birds for sale. These petty traders primarily sale layer variety as this variety is highly demanded in the weekly haats especially by the tribal communities.

The petty poultry traders do not limit themselves to the weekly haats and they also roam around the villages and sell the live layer birds. They earn around Rs. 10-20 on a bird and their monthly income is around Rs. 2000-3000.

Petty poultry traders are the most vulnerable group in the entire value chain of broiler and layer chicken. The petty traders come across high level of drudgeryby travelling very long distances on bicycle.During the rainy, winter and summer seasons if the birds died due to unfavorable climatic conditions, they have to bare the entire loss.

Consumers: Tribal and rural population directly purchase live birds include desi, broiler and layer varieties from theprimary poultry rearers and also from the petty poultry traders.In general the consumers demand for one or two birds and the tribal consumers create demand for the layer chicken since it is cheap compared to broiler and desi varieties. It was noticed that the layer chicken occupy around 70 per cent of the poultry market in the weekly haats. During the festival season, social functions the demand for the desi chicken is more. The well off or economically better off families create more demand for the desi chicken.

Kochiyas:Kochiya is a village level trader or a middleman. Kochiyas have a significant role in the value chain of backyard poultry activity especially in aggregation of desi birds. Kochiyas procure the live desi birds from (i) the individual poultry rearersduring the weekly haats and also (ii) by visiting the nearest 5 – 6 villages.Kochiyas deal with little quantum of desi birds in between 10 to 20 kgs in each transaction worth of Rs 2000 to 3000.

Kochiyas procure one kilogram weighteddesi bird at Rs. 140 – 150 and sell the same to the Master traders at Rs. 150 – 160. Kochiyas target Rs. 20 of margin on one kg weight which is around 10 – 15 per centworth on one kg weight bird.The monthly income of kochiya is around Rs. 1500 – 2000 per month and also continues other livelihood activities like agriculture, wage labour etc. Kochiyas transport the birds on the bicycles and theyhardly maintain any stock at their level and the transaction is prompt. On the procurement day itself the birds are supplied to the master traders by the Kochiyas.

Master traders: Master tradersdeal with bigger quantum(100 to 160 kgs in each transaction and three transactions in a week) of desi birds compared to the Kochiyas.Each master trader continues business relationship with 5 or 6 Kochiyas and procures the desi birds from them. To ensure constant supply of birds from the Kochiyas, Master traders provide cash advances of Rs. 1000 – 1500 to Kochiyas.

Master traders supply live desi birds to chicken shops located in the major town like Jagdalpur, Bastar, Tokapal etc.Master traders also do not maintain any stock with them and they see it as a risk. Autos are normally used to transport the birds to the chicken shops located at cities and towns. Mater trader also target around 10 – 15 per centmargin and their monthly income is around Rs. 7500/- from desi poultry trade. In most cases the master traders also continue their other livelihood activities like agriculture, goat rearing.

Chicken shops: Chicken shops are theultimate buyers of the desi chicken procured by the Master traders.Chicken shops market higher quantum of desi birds, a medium sized chicken shop sell around 900 kgs to 1800 kgs (600 to 1200 birds) in a month. Chicken shops maintain stock with them in the chicken cages placed in their shops itself. The chicken shops take responsibility of feeding and rearing for some time till they dispose the stock they procured from Master Traders.

Chicken shops prefer to sell desi chicken as live birds and they charge more if the consumer wants in the form of meat. As few people demand the desi chicken and the demand is less compared to broiler and layer birds, the chicken shops don’t want to take risk of wastage. Chicken shops target around 20 to 25 per cent margin on the total value of the birds. Dealing with big quantum make the chicken shops profitable and they alsotry to maximize benefits during limited supply seasons and festival seasons.Chicken shops are the last halt in the poultry value chain and from this point the live birds or chicken supplied to the consumer.

Chicken market in Jagdalpur

Quality of Poultry market:Overall the desi chicken market is fetching reasonable income to all the players who involved in different stages of value chain. In most cases the primary producers get very limited price but in this desi chicken value chain the primary producers get reasonable share in the market value of the birds.

In the case of broiler and layer chicken the primary producers are big poultry units from the outside state and within the state getting good incomes. Importantly dealing with large quantum of production makes them profitable. But the middle level players like petty traders, small chicken shops are the least earners and they face high risk.

Pricing

Buying and selling prices details in Desi chicken value chain

Players in the value chain	Buying priceinRs/ per kg	Selling pricein Rs/ per kg
Primary poultry rearers	20 – 40 per chick	140 – 150
Kochiyas	140 – 150	150 – 160
Master traders	150 – 160	180
Chicken shops	180	220 – 240
Consumers	220 – 240	

The primary poultry rearers rearthe small chicks for the period of 75 days to 90 days to get 1.5 kg weight.During this period the primary rearers bear the risk of unfavorable climatic conditions, diseases, theft and bite by snakes and dogs etc. The minimum price of Rs. 140 per kg (live bird) is assured in the markets for the live desi birds and the kochiays respect this minimum price and offer to the primary producers.

The chicken shops add their rearing costs, cost of risk to the price and get comparatively higher than the other players in the value chain.

Buying and selling price details in Broiler and Layer chicken value chain

Players in the value chain	Buying price in Rs/ per kg	Selling price in Rs/ per kg	Buying price in Rs/ per bird of 1.5 kg weight	Selling price in Rs/ per bird of 1.5 kg weight
Poultry forms		70 - 80		40 –50
Petty traders / Chicken shops	70 - 80	100 - 120	40 – 50	50 – 70
Consumers	100 - 120		50 – 70	

The poultry farms engaged in production of the both broiler and layer birds and they are the suppliers to the petty traders and chicken shops located in urban and rural villages in the district. The petty traders continue their sales by roaming around the haats and villages. The chicken shop owners visit the poultry forms once or twice in a week to get the birds.The petty traders are the least profit makers in the broiler and layer value chain.

Constraints at post production/ trading level

- As the supply of the desi chicken is comparatively less, the prices of the birds remain high, though there is a good scope for expansion / increase the production to meet the market demand, that potential demand was not really captured by the community.
- The entire live poultry marketing activity and price fixation is taking place on the just estimated weights, lack of weighing machine service many times the primary producers may get less price that the worth of the birds.
- The petty poultry traders, purchase live broiler and layer birds from the private poultry forms and cycle for 10 – 35 kilometres and this is a drudgeries job for them.

Institutional Support mechanisms

Infrastructure: The community continue to shelter the chicken in the same sheds erected for the cattle and goats this causes for increased mortality rate among the chicken. The broiler and layer birds are being supplied to the state from the neighbouring state like Andhra Pradesh, the local broiler form people highlight that due to lack of proper road facility there is happening high amount of damage to the chicken.

Animal Husbandry department: TheAnimal husbandry department is implementing various poultry development programmes in the district. The veterinary hospitals and dispensaries also equipped with the poultry vaccines to prevent the mortality of birds.

Government poultry form: The government poultry form located at Jagdalpur is producing and making available of improved breed variety of chicks for the community and the community has a choice to directly purchase the improved breed chicks from the poultry form.

Constraints in institutional support

- Though the Animal husbandry department is implementing various poultry development programmes in the district, the outreach of the programmes has been found very limited. Similarly, the interventions of the department not really targeting to address the issue of high mortality rate among chicken. Further the department also could not provide a low cost shelter/chick housemodel for the backyard poultry to prevent mortality of chicken.
- The government poultry form is located at Jagdalpur and which is very far for many blocks in the district, thus community from many blocks could not really access the services of the poultry form.

Recommendations

The backyard poultry has beenpracticed as a subsidiary livelihood activity by more than 70 percent of the households in rural areas in the district. Though there is a good potential for expansion and to develop as one of the major livelihoods of the people especially among the poor and women, that potential is not beingtapped to its potential. The following are the district specific key recommendations to develop the backyard poultry activity as a potential livelihood activity.

1. ***Promoting backyard poultry as an enterprise activity:*** The community needs to be thoroughly sensitized to see backyard poultry as an entrepreneurial activityto fetch much more income from the same. This can be done by educating the women and poor by conducting village level awareness camps on the potential of the activity in terms of market demand and feasibility to take up at the household level.

2. ***Launching more number and viable poultry units:***Currently, the Animal husbandry department is the major initiator of the poultry units at household level, but the outreach is not more than 1500 units in a year in thedistrict. Therefore, there is a necessity and opportunity to increase the outreach of these units to reach many rural and tribal households across the state. Most importantly the Animal husbandry department may refine the features of the current scheme by (i) increase the technical strength of the units by adding shed erection,(ii) placing of necessary infrastructure like feeders and drinking water facilities (iii) add medicine cost and (iv) increasing the feeding cost.

   Similarly many players likecivil society organisations, NABARD, ATMA can integrate this poultry units in their livelihood promotion programmes like NRM projects, watershed projects etc. The following is the proposed backyard poultry product at household level.

Financial product proposed for backyard poultry
(Individual enterprise)

S.No	Particulars	Rate	Quantity	Amount in Rs.
A	**Fixed cost**			
a.	Cost of low cost night shelter of size (8 feet x 5 feet)	2500	1	2500
b	One Adult feeder 8 kg capacity & one Adult drinker 5 lt capacity	Lump sum	2	700
	Sub total			**3200**
B	**Variable cost**			
a.	Cost of 28 days old improved breed chicks	50	40	2000
b.	Vaccines and medicines	Lump sum		100
c.	Cost of feed @ 0.50 grms per day per bird for 65 days = 3.25 kg /bird	17	130	2210
	Sub total			**4310**
	Grand total (A+B)			**7510**
C	**Benefit**			
a.	Sale of birds at 3 months age of body weight 2.20 kg @ Rs. 90 per kg. i.e Rs. 200 / bird. Assuming 20 per cent mortality	200	32	6400
b.	**Sub total**			6400
c.	**Net Benefit = (Benefit-Variable Cost)**			**2090**
d.	No. of Batches reared per annum			6
e.	Benefit per Annum per beneficiary			**12540**

The proposed financial product helps the household to start the poultry activity as a commercial entrepreneur activity. The strength of proposed product is key aspects begin from shelter, feed, vaccination is incorporated thus the chance for failure would be limited. Similarly despite of making available of all services 20 per cent of mortality is taking into consideration which is nothing but designing accurate product according to the ground reality. Launching of these units must be followed by providing training on establishment and management of the poultry unit with special focus on disease management.

3. ***Infrastructure development:*** The community need to be trained and helped for promoting night shelters for chicken to protect from extreme climatic variations like high and least temperatures, ultimately to ensure better survival rate among the chicken. This initiative has been considered as important for prevention of high mortality rate among the chicken especially in the backyard poultry.

4. ***Door step health care and extension services for chicken:*** As the backyard poultry activity spread across the state including of remote and rural villages, with the current capacity which might be difficult to the Animal husbandry department to reach every nook and corner to deliver veterinary services. Thus a system of Paraveterinarianneeds to be promotedto ensure delivery of health and extension services. These Paraveterinarian can be identified from the existing SHGs and need to be provided intensive training on poultry health, feeding and management practices. This cadre can be initially piloted by the Animal husbandry departmentin some pockets of the district where the poultry population is high and in long run the SHGs and their federations can be motivated to absorb. This cadre of Para veterinarian can also be tried under the watershed projects, Wadi projects and NRM projects implemented by NABARD and other departments.

5. ***Poultry promotion through community organisation***: Limited production and supply ofthe broiler and layers birds and chicken with in the state became an opportunity to the adjacent states like Andhra Pradesh and Maharastra and they remain major suppliers. This context highlights that the potential demand has not been effectively captured by the state. The following institutional model (scaling up model)has been recommended for (i) To increase the broiler poultry production in the state (ii) To effectively translate the traditional backyard poultry rearing ability in to a commercial venture to enhance the household income of the community and(iii) especially to promote a sustainable livelihood model through the women SHGs and their federations.

   The proposed institutional model will be suitable to bring large number of poor households in to commercial poultry activity at one hand and also to promote some community based poultry clusters in the district. The proposed institutional model will have three tiers begin from individual member, village level poultry cooperative and an apex level producer company.

Community based institutional model for commercial poultry (Broiler) promotion

Institutional tier	Features	Expected roles
Individual women members	▪ This tier will be foundation for the proposed community based institutional model. ▪ Interested women who can practices the advocated best practices will be identified and considered for establishment of individual units. ▪ Individual women manage a small poultry unit with the strength of 200 - 250 birds ▪ These units are equipped with basic infrastructure include shed, feeders, drinkers. ▪ Members will have understanding on the poultry management include vaccination, feeding and health management of the chicks ▪ Member will maintain books of accounts of their unit to understand the investment and returns pattern.	▪ The individual units will supply minimum number of birds to ensure better aggregation at the village cooperativelevel. ▪ All the individual members will be federated at village level. ▪ Each individual unit is expected to adopt the advocated poultry practices to ensure sustainability of the units.
Village Cooperative	▪ The individual poultry rearers will be federated a village cooperative.	▪ The village cooperative is expected to aggregate the production at village level and transport to

	▪ The village cooperative will be a registered to under a suitable legal form to manage aggregation and financial intermediation. ▪ The executive body of the village cooperative will be elected in a democratic manner as per the legal form ▪ The village cooperativemeetings take place as per the legal form.	the market as per the directions of the producer company. ▪ The village cooperative will supply the feed and inputs to the individual units by procuring from the producer company. ▪ The village cooperative is expected to take the financial intermediation role in collaboration with the bankers, resource agencies to assist the members in arranging the running capital and to start the poultry units. ▪ Monitoring and technical support to the individual units to reduce risk and to increase the productivity.
Producer company	▪ The producer company is the apex level institution on the top of the village cooperatives. ▪ Will be a registered under Producer Company ▪ The producer company will be managed by law ▪ The producer company will have staff to manage the operations of the company.	▪ The producer company is expected to ensure market linkages for the birds produced by the individual units and aggregated by the village organisations. ▪ The producer company will establish feed production units, Mother (brooding) units to supply the chicks to its members ▪ The producer company will identify the learning needs of the members and conduct trainings with the help of the village cooperatives. ▪ To work closely with the government departments to bring various livelihood support services to the individual units.

Conclusions:

Rearing chicken in the backyards is part and parcel of tribal and rural communities in our country and Bastar district isno exception. Moreover large number of tribal population (62 per cent in district population) in the district has been engaged with backyard poultry since generations and also found as one of the important activity in their livelihood portfolio. But the backyard poultry activity is not even able to cater the household's consumption needs due to high mortality rate. Thus the demand for the chicken has gone up tremendously and this opportunity has been exploited well by entrepreneurs of adjacent states.

There is a great potential to promote poultry at household level as well as group, federation level especially through women SHGs and their federations, this can certainly promote large number of livelihoods in the district. Butthere is a dire need to adopt scientific approach in strengthening the existing backyard poultry units and launching new household level and larger units through SHGs and their federations.

Tamarind Collection and Marketing Sub-sector in Bastar District

Tamarind Collection and Marketing in Bastar

*Tamarindusindica*belongs to dicotyledonous family *leguminosae*, is an important tropical fruit tree growingin India and other parts of the globe. It is commonly known as Imli, Amli, Charu, Tetel, Tentul, etc. It is a fleshy dark brown coloured fruit and is given importance primarily for the fact that it is a chief ingredient in different foods especially in South India. Also it is used for the preparation of sauces in the food processing industries. The leaves and seeds have some medicinal properties for the treatment of various diseases and ailments like Anodyne, Piles, Poultice, Sun stroke, Swelling and Pains. Seeds are also used for starch preparation. The fruit is very rich in vitamins.

International Scenario

Tamarind is originally found to be the native of Burkina Faso, Cameroon, Cape Verde, Central African Republic,Chad, Ethiopia,Gambia, Guinea,Kenya, Madagascar, Mali, Niger, Nieria,Sudan, Seneal,Tanzania,Uganda,. It is also found as an exotic species in the countries where it was introduced by the traders or immigrants. These countries are Afghanistan, Australia, Bangladesh, Burma, Costa Rica,China, Haiti, India,Malaysia,Mexico, Pakistan, Puerto Rico, Sri Lanka, Thailand,Togo, USA, Zambia etc.

Tamarind is cultivated in nearly 54 countries of the world: 18 countries in its native range and 36 other countries where it has been introduced.

Major Tamarind Producing Countries of the World

Sl. No.	Major Tamarind Producing Countries	Production (in Tons)
1	India	300000
2	Thailand	140000
3	Costa Rica	220
4	Mexico	37
5	Puerto Rico	23

Tamarind in India

India is the world's largest producer of Tamarind. The exact data on the production and the acreage of Tamarind is difficult to obtain as most of the fruit is collected from the wild by the local community or collected from the small isolated areas. It has been found from secondary sources that the total Tamarind production in India is about 30 Lakh Quintals which is almost 75 per cent of total world production. The major tamarind producing states in the country include Karnataka, Chhattisgarh, Kerala, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Orissa and Jharkhand.

Status of Tamarind in Chhattisgarh

The total estimated production of tamarind in the state of Chhattisgarh as per the data obtained from the CG Mandi board and the Chhattisgarh Minor Forest Produce Marketing Federation (CGMFP Fed) is approximately four lakh quintals per year. But according to the traders' estimate the total tamarind production in Chhattisgarh ranges between 5-8 lakh quintals and varies from year to year as the production is dependent on the weather conditions. It can be seen from the past years trend as the tamarind trade quantity in 2003-04 was 2.4 lakh quintals only, whereas in the year 2004-05 it rose to 5.22 lakh quintals.

Status of Tamarind in Bastar

Central Bastar (Jagdalpur) is one of the most backward districts of India with a very low literacy rate, poor quality of education, poor attendance in schools, deficient health facilities and medicines, poor employment opportunities and income generating activities.Prospects for community mobility appear meagre. Circumstances indicate that the agricultural production from tribal land is inadequate to maintain a household at subsistence level. The income from labour is erratic. Small land holding carry on to be the prevalent restraint faced by the poor in their endeavour to improve their agriculture based livelihood opportunities.

NTFP collection is considered as one of the most subsidiary occupations for these people because the agricultural sector does not provide sufficient income and food, due to lack of land ownership, low fertility, less productivity, lack of irrigation facility. It is for self – consumption as well as partly for selling for managing the other sources of livelihood.

The collection of Non Timber Forest Produce (NTFP) and especially Tamarind is very important and is conditioned by availability, marketability, access to forests and adverse conditions. Even then NTFP collection accounts for maximum person days of employment per person. For those with marginal land holdings (households with less than 5 acres of land comprise about 57 per cent of agricultural holdings in Chhattisgarh) agriculture is not often capable to maintain the household at subsistence level and the gap is usually filled by tamarind and other NTFPs. The tribal households live only on edible products collected from forests. The average incomes realized through the sale of NTFP to that of the total income in these villages varies from 34 – 55 per cent.

The marketing of tamarind does have an established market procedure in Chhattisgarh. But still there are lots of flaws that need to be removed from the whole system. Because of this there is a considerable interest in examining the market potential of tamarind and the type of policy mechanisms that could facilitate the growth of this sector of the economy.

Effective marketing strategies can play a significant role in fetching better remuneration to the rural poor who are dependent on the collection of Tamarind. Earlier the tribals used to collect and barter Tamarind in exchange for the goods of their requirement with tribals as well as outsiders. But with the passage of time, systematic channels have been established but there is no monopoly of the collection and marketing of Tamarind as is the case of other nationalized NTFPs. Tamarind being an NTFP is lesser available in a forest and more abundantly available in the villages. Consequently it is considered as an agricultural product. Therefore the accountability for its procurement has been taken over by the *KrishiUpajMandi*.

Few NTFPs in our country are nationalized and are dealt by the government and rests of the other item i.e. non – nationalized items are dealt by market force. The marketing system of non-nationalized NTFPs is still unstructured and does not have clear rules & regulations, which deprives procurers in getting the genuine price for their NTFPs. So there is a need to evaluate the marketing practices of NTFP. Consequently in order to have adequate and sustained supply of tamarind to traders, exporters and industries, moreover to ensure remunerative rates to forest dwellers for collection trade *Dr. Raman Singh ,Chief Minister of Chhattisgarh had declared in Rajyaotsav – 2012 to procure Mahua and Tamarind like other Nationalized NTFPs.*

The total procurement of Tamarind by KrishiUpajMandi , Jagdalpur in the year 2009-10 was 1,45,563 quintals, year 2010-11 was 1,96,043 quintals, year 2011-12 was 2,87,269 quintals. Also in year 2011-12 CG NWFP Mart procured about 114.50 Quintals PhoolImli. The purchase rate for which Mandi procured it was Rs. 900-2000 per quintal for Aatiimli and Rs. 2000- 4500 per quintal for Phoolimli.

Various factors include climatic condition, insect and pest attack, wild animals and birds attack, etc predetermine the good or bad yield. In connection to this it has been recently forecasted that this year the yield to be harvested in the month of March 2013 would reduce by 55 per cent.

Employment in tamarind business

Tamarind business generates ample employment opportunities for the rural community round the year. FromFebruary until April, harvesting and collection of tamarind takes place. Mostly the tree owners do not harvest tamarind from the tree and there are tribal men those who do this work every year. This fetches them income. They either work directly or are hired by the contractors who contractthe tree before harvest.

Soon after collection it is sold (after removal of epicarp). This takes one month. Though it is known to them that de-seeding and de-fibering fetch better remuneration but these tribals do not wait for this value addition work. Moreover the reason for selling tamarind immediately is because of their monetary requirement. Also their huts are too small to keep tamarind for longer period of time. The buyers take this tamarind from the village haat and store it in the nearby godown and again give it back to the villagers for deseeding and de –fibering once the collection period is over. Or else the tamarind is stored in the cold storage and villagers are called there for value addition work.

Women get approximately Rs. 50 for deseeding 20 Kgs of tamarind. They do this work either in the godowns or in the cold storages; otherwise they take it home in the morning and return it back in the evening.

Composition of tamarind

The dry fruit of tamarind has three layers; outer layer of epicarp, middle fleshy layer of endocarp and innermost the seed. It also has fibers in thefleshy part. The fruit consists of 44-50 per cent weight of fleshy fruit part, 32-35 per cent of seeds and 20-23 per cent weight of fibers and outer cover. But the collectors remove the epicarp and it is called AatiImli. Now this fruit bears 52 -56 per cent fleshy part, 30 -35 per cent seed and rest 12-14 per cent fiber.

Tamarind and its products

- *Sanjeevni*a retail outlet of Chhattisgarh State Minor Forest Produce (Trading &Development) Cooperative Federation Limited sells the Tamarind Cakes in a pack of ½ Kg.in Rs 30.
- Tamarind Candy is also sold forRs. 80 per pack of ½ Kg each.
- Tamarind sauce is popular product available in the market.
- The acidic pulp of tamarind is widely used in the preparation of curries, chutneys, sauces, sherbet, etc.
- Seeds are used as a stabilizer in ice- cream, mayonnaise, cheese, etc. Also it is used for multiple applications in the food industry.
- Seeds are used as an agent for pharmaceutical preparation.
- The presence of tannins and other coloring chemicals in the testa makes it useful for color and tanning industry.
- Testa is separated from kernels by boiling and roasting. Then its powder is mixed with cereal flour during the time of famine and food scarcity in Chhattisgarh, Andhra Pradesh, Madhya Pradesh, Jharkhand and other states of India as well as Africa.
- In tamarind xyloglucan is the major component of TKP (Tamarind Kernel Powder).It is commonly used as a food additive for improving the viscosity and texture of processed food. Incorporation of TKP affects the hardness and crispness of the food products like biscuits, etc. without affecting the taste.
- TKP is also used in textile industry for sizing the textile paper and jute.
- Tamarind seed extract is used as an adhesive in plywood industry.

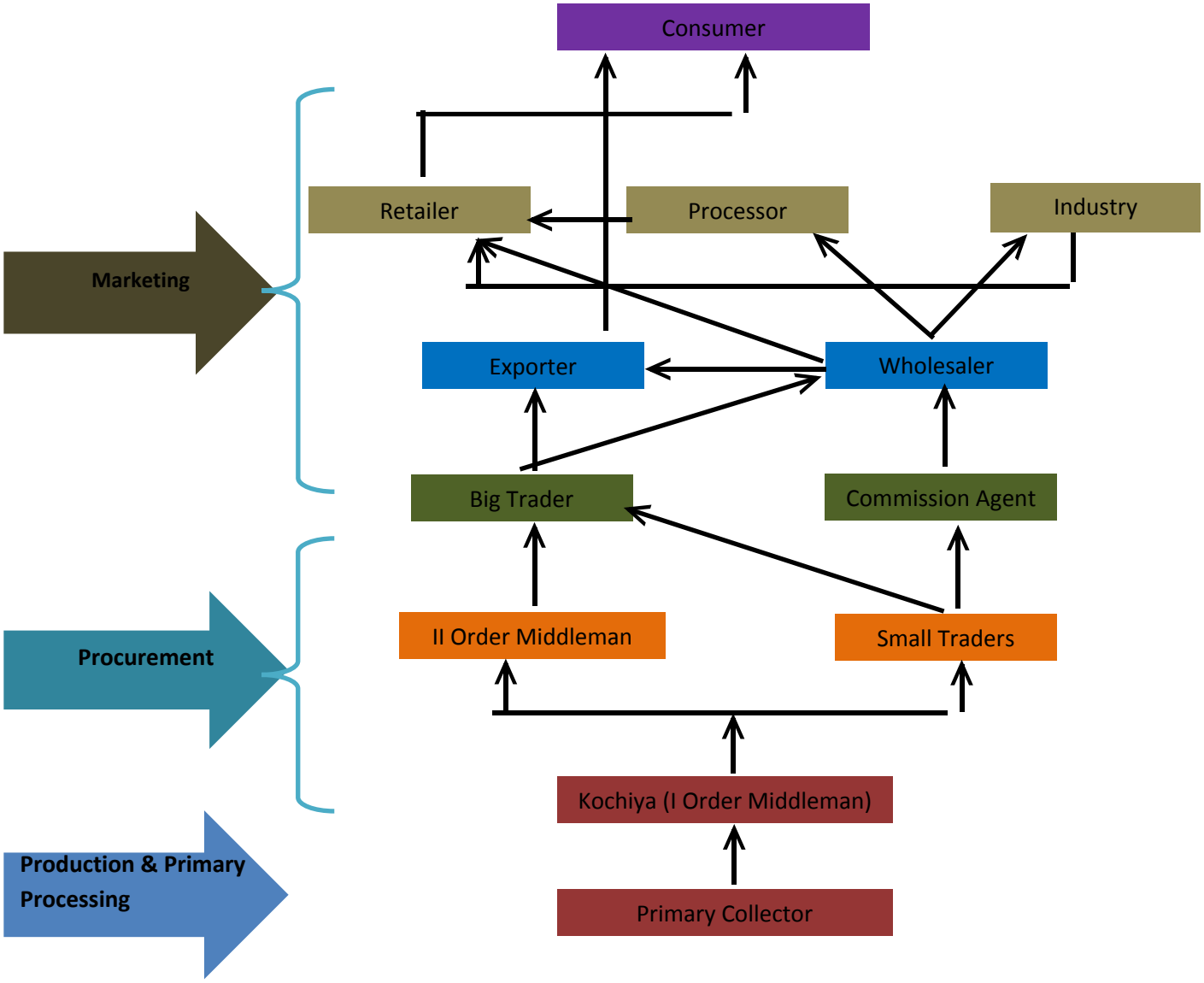
The subsector map

The primary collectors of the villages collect the NTFPs from their private farmlands or from the forests adjoining their villages. They sell to small traders and middlemen who usually visit the villages and buy the produce from the collectors. The collectors sometimes carry the produce to the nearby market places and sell the NTFPs there.The middlemen at the village level sell the produce to larger intermediates who in turn supply the raw material requirements of the manufactures and large industries. The final link in the marketing channel is consumers in bigger towns and cities. There are two marketing channels in the Tamarind subsector

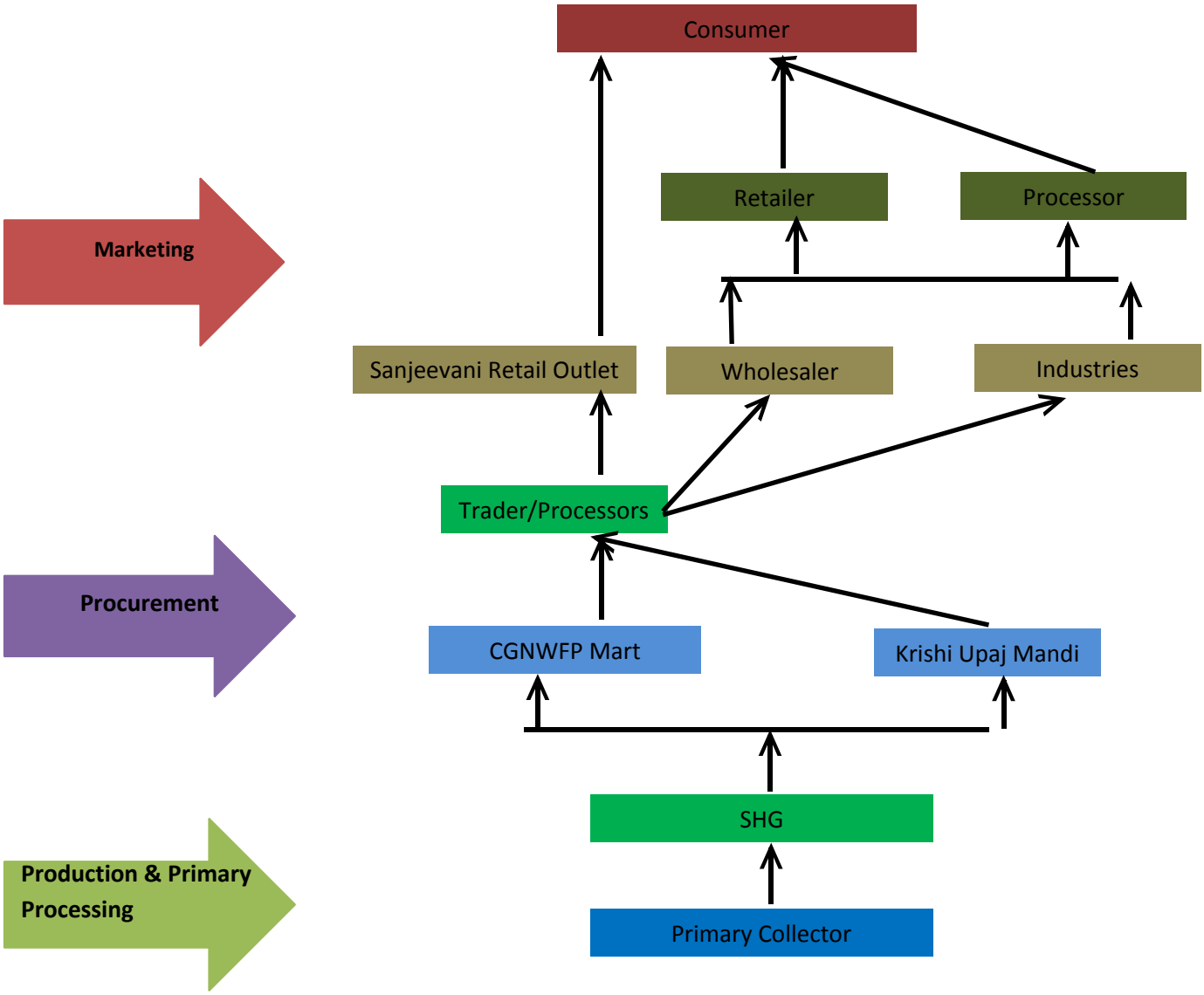
(i) Unorganized Channel

(ii) Organized Channel.

Unorganized channel of Tamarind



Organized channel of Tamarind



Tamarind passes through many channels before it reaches the consumers. NTFP collectors sell this produce through different channels, depending upon the situation. Sometimes they sell it to the traders directly, when they go to the big markets, where traders are easily available. Otherwise they collect, store and sell it to the middlemen or the traders who come from different places in haats. Within the forest itself the small market of tamarind sets up on a fixed day. Collectors of that village and adjoining areas sell their collected produce. It is either sold to the traders or middlemen and through them it reaches the traders. Traders sell either directly to the processing units and industries or to the other traders, from where it is exported. Sometimes it is sold in retail also.

Unorganized channel of Tamarind marketing

In the entire process of unorganized channel the middlemen play a major role in different stages of the sub-sector. Middlemen operate at two or three levels and come in between collectors and the traders, traders and local town businessmen, and between traders and industries, processing units, etc. Middlemenhelp the concerned parties in selling and purchasing in the best possible price for their services. The responsibility of these middlemen includes paying the tribes at the prescribed rate for storage and transportation. Here they adopt all moral and immoral ways to make money as per the situation.

Villagers sometimes visit the nearby town and sell to the local town businessmen and these small traders sell to big traders. These traders sell to the businessmen of other states and abroad.

Organized channel of tamarind marketing

With regard to the organized channel, the primary co – operative society or SHGs procures the Tamarind from the collectors. These primary societies collect and sell to CGNWFP Mart. They store in a godown of district headquarters. From there it is dealt by state corporations. Traders, industries or processing units, generally purchase these produce after bidding tender through DFO. Traders or processing units purchase Tamarind from the Mart. Sometimes State Corporation holds auctions or call for tenders twice or thrice for clearing up the stock. Then the processors make the Tamarind Chapatti and Candies. It is sold in the retail outlet of Sanjeevini.

Similar to other places, Forest Department issues TP to the traders. This TP allows them to transport from one region to another. These TPs are checked & verified at check posts. Here many cases of false TP come to attention.

Pre-production stage

More than 99 percent of the Tamarind trees in the district grow naturally. Suitable agro climatic conditions, soil varieties and the forest cover are the key reasons for natural generation of the tamarind trees in the district. Domestication of tamarind trees is also found in few villages where the community plant one or two tamarind trees at their backyards. Tamarind gardens are not being promoted like other horticulture varieties like cashew, mango, and orange because the commercial value of the tamarind is comparatively less. However, tamarind has become part and parcel of life and livelihoods of the tribal and rural communities.

Production stage

Collection of Tamarind

The fruit is collected when its upper part turns brown and when it becomes very light in weight in comparison to the unripen fruit. The villagers collect the produce in the months February to April every year by shaking the branches with the help of long bamboo poles. After the fruits are collected, it is kept in bamboo baskets.

Collectors

Tamarind collection provides a good source of income.Almost 50 per cent of the family members (average family size 7) engage in tamarind collection from February to April. Tamarind collection is normally done from the village common lands only and not from the forest. On

an average, every household collects 3 to 4 quintals at an average price of Rs.1200 per quintal. The annual income earned from tamarind collection and marketing is around Rs. 3600/-. The majority of collectors sell Tamarind to the local traders (called Kochiya) as the Mandis are far away, transport is not available easily, packaging sacs are not available and there is uncertainty of price.The villagers do not have sufficient storage place and therefore it is mandatory for them to sell tamarind at the earliest.

The CG NWFP Federation has established SHGs of Tamarind collectors through which tamarind is collected, deseeded, packaged and then sold through its own outlets – under the Sanjeevani brand name – Chhattisgarh Herbals. The collectors who are members of these SHGs got better price or was equivalent to theminimum support price declared by KrishiUpajMandi.

Primary processing

In most of the cases the primary processing like separating tamarind fruit from shell, deseeding takes place in the villages itself. In addition to that sun drying also takes place in the villages to prevent them from being affected by fungus due to cool or high moisture in climate.

In some cases the fruit is sold by the local communities in the market is without processing, it is because processing may cause for declining of weight of the fruit, but the community miss out the logic of better price of the processed fruit. Skills like removal of fiber; deseeding are inherently developed by the community especially the women. Women do this primary processing at household level to earn better. While the tamarind goes to the market, the seeds also have demand from the industries like starch preparation, medicine preparation and other industrial use.

Procurement stage

Various primary NWFP Cooperative Societies are involved in the procurement of nationalized and non–nationalized at village Level. They are further linked with block level society, which comes under the umbrella of district level cooperative limited. This organized channel functions well for nationalized NTFPS. Where as many levels of middleman and traders are involved in the procurement of non-nationalized items.

It has been observed that very few established organizations or institutions working to facilitate the procurement process. In the absence of direct involvement of the agencies like CGNWFP Mart, TRIFED, Mark fed, LAMPS, etc the market is much unorganized. Despite the huge availability of Tamarind in the state none of the agency viz. Mandi Board, TRIFED, NWFP Mart or Forest Dept. beholds the responsibility for its management. It would be more methodical if we understand the department wise delegation, efforts and limitations.

District administration

In 1999-2000 Mr. Praveer Krishna, District Collector realised the tremendous potential of tamarind trade. Then district administration initiated 'Van DhanYojana' (ImliAndolan). Under this initiative SHGs were formed with 10 to 12 members from below poverty line in every village. These SHGs were provided fund through the District Collector. Several vehicles at block level were purchased for transportation. This was all done under the umbrella of Tribal Cooperative Marketing Development Federation of India Limited (TRIFED). The middlemen were kept aloof from the entire system. The whole lot was dumped in the cold storage and

godowns. Subsequently TRIFED was given the responsibility for its marketing. First year there was a profit. But next year the whole show malformed due to the following reasons-

- TRIFED could not manage the marketing of procured quantity and huge quantum of tamarind perished in cold storage itself.
- Poor institutional arrangements like improper book keeping, finance, grating, and quality assurance resulted in moving away from the set goals and objectives. This scheme was an exceedingly accurate stride towards this trade but unfortunately it had a fag end in two years itself.

TRIFED

The Tribal Cooperative Marketing Development Federation of India Limited (TRIFED) started functioning in 1988 under the Administrative control of the Ministry of Welfare, Govt. of India, (presently the Ministry of Tribal Affairs, Government of India).The main objective of TRIFED is to serve the interests of its members in more than one State for the social and economic betterment of its members by conducting its affairs in professional, democratic and autonomous manner through self-help and mutual cooperation for undertaking marketing development of the tribal products.TRIFED has been into retail marketing of tribal products through 27 outlets under the brand name called TRIBES INDIA and also through 14 State Emporia on consignment basis.

TRIFED in Chhattisgarh has been introduced a scheme called 'Van DhanYojana' which was aimed at addressing the issues involved in tamarind collection and marketing. But this scheme was also ended with very few achievements and could not leave any successful model to work with the tamarind sub-sector especially to reach large number of people in the state. Few main reasons for limited success in the efforts of TRIFED include

- Tamarind was procured in MSP but later on the price went down.
- MD, New Delhi decided to sell the stock after the peak hike in price. But it proved to be an erroneous decision of TRIFED.
- Due to long time retention of the whole stock the cold storage cost and overhead charges increased but returns were not appreciable.
- Insufficient capable staff to establish rapport with national and international buyers.
- Lack of motivation, skill set required for marketing.

Forest Department

Considering tamarind as non-nationalised product, most of the tamarind collection is taking place from the village commons rather than forest which have resulted in restricted role of Forest Department in regard to tamarind procurement and marketing. Forest department argues that Tamarind must be nationalised so that all the rules and regulations can be made. Also there would be a monopoly in its trade.

Presently the dept. provides fund to NWFP Mart for the procurement of Tamarind but it is a drop in the ocean. Later it calls tender for the auction. The dept.'s horizon of the responsibility needs to be broadened. Thus forest dept. justifies its stake over responsibility.

Chhattisgarh NWFP Mart

Though fully supported by forest department they have lot of constraints.

- Marketing is their main problem.
- Tenders called by MD, Raipur. Thus process is time taking and market fluctuates.
- Tamarind being an open product has no monopoly or control over the market.
- Parties prefer to buy from the traders.
- Mart feels that traders want to discourage federation and govt. because their business hampers.
- Govt. has a poor storage facility. private cold storages charge Rs.1.25 per kg annually. They are bound to seek the services of cold storage otherwise discolorations take place and rate reduces.
- Earlier MD used to decide the rates and now it is market driven.
- If Govt. fixes the support price then in case of market fluctuation who will bear the loss.
- Govt.'s declaration of MSP can make tribes happy but not to the traders. And govt. will never make business lobby unhappy as they have to run their govt.
- Staff crisis is too much. Except higher officials most of the officials and staff are on adhoc basis. They work half-heartedly.

Middleman

For facilitating the procurement process, some traders appoint agents/ middlemen in the villages. These agents and middlemen are appointed on the basis of certain terms and conditions, which must be fulfilled by them. The conditions they should fulfill are to have storage facility and they should be able to keep the produce in saleable condition. These agents are provided advance money for trapping the tribes and rural for bringing their produce to them. No allowance is given to the agent or the middlemen to cover the storage cost incurred by them. Instead they are given 8-10 per cent commission on the value of the produce procured by them. Then the procured material is transported to the traders. It was observed that there were certain independent middlemen but the pattern of working was same. It was also found that the per centage of commission was increased to 15-20 per cent and it was more on those NTFPs which fetches high market price. These traders sell their collected material to the businessmen of the towns or directly to the processing units and industries. There are certain traders, processing units and industries that directly procure NTFPs from the area of its collection.As per the information given by one of the trader only 5 per cent of Tamarind is consumed in these villages and about 95 per cent goes out in other states of India.

Kochiyas

Kochiyas are not following any quality standards. They take reference price from the district level market/ traders. They are selling tamarind to the district level traders, as they need immediate cash. If, they had credit facility they could hold back the stock to sell to the next level of trader i.e. to wholesalers at State level. The short-term storage of Tamarind by Kochiyas is done in Jute bags. They receive Rs 1 per Kg as margin on sale of tamarind to next level traders. The only processing done at the Kochiya level is deseeding. Since there is loss of up to 40 per cent during deseeding, the price of deseeded tamarind is almost two times of the seeded one.

Marketing stage

Community awareness on marketing channels

About 13 per cent collectors were aware of the mandi rate for sale of tamarind 87 per cent were not. Majority of collectors sold tamarind in the village itself (Kochiya) or Village haat thus avoiding price risk and costs associated with time and transportation to Mandis. Some of the reasons specified for not selling tamarind in Mandis were – long distances, lack of/ poor transport, no storage facility, no packaging materials and absence of information about price. The main source of price information was Kochiya (village trader) and friends.

However, the collectors who are associated with the CGNWFP Federation through SHGs get higher price for their tamarind.

Weekly haats

In the state of Chhattisgarh, the major trade centers of Tamarind are Jagdalpur, Sukma, Narayanpur, Kondagaon and Dantewada. Among all these the study was commenced in Jagdalpur district, here the trading of Tamarind is very high.This area is not only the major producer of Tamarind but even it is one of the major markets of Tamarind due to the influences of other markets of the nearby areas.

Tamarind is procured from the haats and Shandies of the villages, where the collectors sell. The market day is once in a week. Different villages have different market day .For example in Lohandiguda block the weekly haats are throughout the week, on Monday in Sirisguda, Tuesday-Bandakot, Wednesday-Alnaar, Thursday-Mundagaon, Friday- Lohandiuda, Satarday-Maardoom and Sunday- Michnaar. Thus all the nearby villagers come to sell the Tamarind in these markets. The middlemen, traders and sometimes processors directly collect it from these hats. From here it goes to the main market of Jagdalpur. Here it is stored in the godowns and cold storages & from there it is distributed elsewhere.

Marketing channels

The structure of tamarind marketing is unorganized. The raw tamarind collected by the villagers (mostly tribes) is sold in unprocessed form to the village level traders called Kochiya in the weekly haat/ bazaars. This system is also called as open-market channel and is largely dictated by the big traders in the market.

These small traders then sell their produce to the tier - II level traders in district headquarters and in the Mandis. These medium traders either sell the produce to big traders within the state or sell outside the state. The bulk of the marketable surplus of tamarind from Chhattisgarh is sold by a dozen or to big traders to other states. There are again big traders in the concerning states who either stock the produce for some time or they sell to smaller traders/ distributors in large consuming cities. The final consumers purchase partially processed Tamarind from small traders or processed & packed tamarind from the organized retail chains.Only some of the tamarind quantity is processed at the village level, which includes removal of the seed, and the processed produce is called “Flower Imli” or “Bricks Imli” This type of Imli fetches higher price than the unprocessed one.

The other marketing channel for tamarind that has developed in the recent past is the one initiated by the CG NWFP Federation. However, the federation's intervention in the procurement of Tamarind is only to the extent of about 10 per cent of the total volume but their intervention itself has helped the collectors get better prices from the open market.

Value chain analysis of tamarind

According to the data collected from various sources, it is observed that in the open market tamarind is collected along with other minor forest produces and is a seasonal crop. It is categorized as a spice by the state Mandi Board and hence attracts mandi tax of 2 per cent at the time of purchase from the collectors.

As evident from the figure presented previously, there is long channel for tamarind from the collector to consumer. The collector receives only Rs. 12-15 for a kg of the raw tamarind while the consumer ends up paying Rs. 55-60 for the same one Kg.deseeded tamarind. Also for one Kg.unseeded tamarind the collector receives an average Rs. 13-14 but the consumer ends up paying Rs. 40/Kg. This is the case for bulk of the tamarind traded in the state of Chhattisgarh.

The intervention of CG NWFP Federation in the trade of tamarind has been beneficial for the collectors who get an assured price of Rs. 18.50 per kg (Rs 3-5 more than the open market channel) for the seeded. The estimated expenditure incurred by the Federation on selling deseeded tamarind is Rs. 3/- kg. Further value addition is also done by refining the material and packing it in polyethylene bags and labeling it under Chhattisgarh Herbal brand. The selling price is Rs.60/kg at MART level The retail packs of 1 kg, 500 grams and 200 grams are made for this branded consumer packed tamarind The seeds obtained from deseeding operations are also sold at a price of Rs. 8.50/- kg.

Destinations of Tamarind from Chhattisgarh

According to the traders, the marketable surplus of tamarind from Chhattisgarh is supplied to the states of Andhra Pradesh, Karnataka, Tamil Nadu, Uttar Pradesh, Delhi, Punjab, Mumbai, Gujarat, Rajasthan, Uttarakhand, etc. These traders also export it to other countries like Pakistan, Sri Lanka, Bangladesh, Dubai, Thailand, Malaysia, Singapore, etc.

Pricing

Pricing pattern at the village level is not systematic. Even in a small haats of about ¼ km from one end to another, the price of the procurement differs from one middleman to another. It was observed in the market, that collector who comes to the market for selling; do not enquire about the rates in which it is procured by different Tribes. They just sell it to any of the procurer. Some of them were of the view that "always we sell our tamarind to that person that is why we do not go anywhere else and directly sell to them only". Also it was found that due to poverty, these collectors sometimes take loans from the middlemen and traders, for which they have binding to go to them only.

Some of the procurers directly pay cash to the collectors, but others take it through barter system against the things of essential requirements like Grains, Soaps, Clothes, etc. In this way these middlemen and traders earn a double profit.

Traders generally appoint their middlemen in the market, for the procurement. Therefore the price of purchasing to be paid to the collectors by deducting middlemen's commission, interest on working capital, transportation charges, loss due to drying in sun light, establishment charges and storage costs from the nearest wholesaler market rate. The price fixation is calculated by deducting the following

i. Commission of middlemen 10 per cent
ii. Interest on working capital 5 per cent
iii. Transportation 2 per cent
iv. Storage cost 1 per cent
v. Establishment 5 per cent
vi. Loss due to drying in sun light2 per cent
TOTAL – 25 per cent.

Therefore if the prevailing market price is Rs. 10 then procurement price is fixed at Rs. 7.50.

The levels of channels are shown in the Figure. For both the channels trade is open in the market. Similarly, the price spread for tamarind marketed by CG NWFP Federation is better. By comparing the two channels, it can be inferred that the price received by the collectors in case of organized marketing through the Federation is higher and assured in advance. In addition, the consumer price is low for tamarind sold through the Federation outlets- Sanjeevani.

Thus, it can be concluded that an organized market is more efficient and is beneficial for both the NTFP collectors as well as the consumers. This is because of the transparency and better price discovery, of the process. But on the contrary the preference of collectors is for the unorganized market because they get immediate returns.

Table: Cost Structure of Tamarind Processing at CG NWFP Federation

S.No.	Cost Components	Amount in Rs, / Kg
1	MSP of seeded tamarind from collectors	18.50
2	Cost of Jute & Poly bags, etc	0.50
	Cost of weighing and filling	0.85
3	Cost of transportation	0.15
4	Loss of weight on processing (from 1 kg of seeded tamarind, 560 gms of deseeded tamarind is obtained)	-8.14
5	Cost of cold storage for one Year	1.25
6	Cost of loading and unloading, other expenses	0.70
7	Expense on making Phoolimli	3
8	Cost of making 1 kg Tamarind Chapatti	6
9	Total expenses incurred/ Estimated Cost of per Kg Tamarind at this stage	30.95
11	Sale price of 1 kg of Packaged deseeded tamarind is Rs.60. 1 Kg. Seeded /AatiImli gives 560 gms. PhoolImli	33.60
12	Profit Margin to Federation from Deseeded Tamarind Selling Price –Cost Price = Profit	33.60 - 30.95 = 2.65

13	Revenue from sale of Tamarind seeds at the rate Rs.10/. 270 gms. seed will be procured from 1Kg (- 10 per cent overhead expenses)	2.70 – 0.27 = 2.43
14	Net Benefit = Phool Tamarind Profit + Seed Profit	2.65 + 2.43= 5.08

The data from the CGNWFP Federation shows that in the year 2012, 608.38 Quintals of seedless tamarind was collected in Jagdalpur. The produce was purchased at a price of Rs 18.50 kg on an average from the SHGs and finally sold in Rs. 60 /Kg. So it is clear that a profit margin of Rs. 5.08 per Kg. gave a net profit of Rs. 508 per quintal. In totality the profit will be Rs. 3,09,057.

Except deseeding, there is no other major processing involved with regard to tamarinds. However, the majority of tamarind in raw form i.e. seeded tamarind (called Ati in local dialect) and only 25 per cent is processed i.e. by deseeding (called Flower in local dialect). This is also used as one type of grading parameter for quality of tamarind. The other aspects in quality include – color, moisture content, fiber removal. The dark red color with less moisture and without fiber is considered good quality parameters for tamarind trade.

During the deseeding process, there is loss of weight to the extent of almost 50 per cent. From one kg fresh and raw tamarind, 560 grams of deseeded tamarind is obtained. The loss of weight is because 27 per cent are seeds, 17 percent fiber & rind and remaining as other losses.

Proposed model for tamarind spot marketing through electronic exchange

The CG NWFP Federation, according to the study, has tried to develop an organized set up for NTFP Trade in which the collectors get better prices for their produce. It is proposed for the development of spot market where in the CG NWFP Federation can play the crucial role of broker and the district unions would play the role of sub brokers between the collectors and the NSEL.

NSEL could act as the main settlement agency providing transparency of prices, counter party guarantee, act as facilitator of clearings, and the operations may be carried out in the usual way for any other commodity.

Proposed advantages of spot market trading of tamarind

- Price realization for collectors will be improved because of price discovery / transparency.
- Kochiya's or the lower level traders will be better linked with the markets; hence. Their profit margin will increase substantially.
- Liquidity will increase, as banks will be able to provide commodity loans against the warehouse receipts.
- As the identity of the traders will be undisclosed they will not be able to influence the price and the payments.
- Decrease in credit risk.
- Elimination of brokers, who take away the greater part of profit .And tribal is still standing in the same poverty line despite having a valuable tamarind of thousands and lakhs of rupees in his courtyard itself.

Actors involved in Tamarind Collection and Marketing

The roles of actors involved in various stages of the value chain are as follows: -

Primary Collectors	▪ Protecting the produce from the birds and animals. ▪ Harvesting and collection of the produce. ▪ Drying the harvested produce in sun light. ▪ Peeling off the epicarp. ▪ Sale of the produce to Kochiyas (within the village or in the weekly markets).
Harvesters	▪ Though they are not the key role players in the value chain but being a part of the system it has been mentioned here. ▪ Identification of the target household where their services are required.
Kochiyas **(I Level Middleman)**	▪ First level of middleman who is usually village based and runs small grocery shop during the lean season. ▪ Also does money lending (most of the time intentionally to trap the villagers for selling tamarind to them only). ▪ After clearing the debt they provide necessary household goods to the villagers from their shops and mend money through shop also. ▪ Procures harvested tamarind from the primary collectors ▪ Supply of the next level of the functionary in the value chain.
Haat Trader(II Level Middleman)	▪ Sale of produce to haat trader by the collectors.
Processing Units	▪ Collection of tamarind from Kochiyas/ Haat trader ▪ Processing – namely preliminary cleaning, separation of fibers and seeds, drying ▪ Grading and packing ▪ Supply to wholesalers or to the Sanjeevani outlet by CG NWFP Mart.
Transporters	▪ Like harvesters they too are not the very crucial role players. ▪ Bulk transport of Tamarind from villages to the Krishi Upaj Mandi, CGNWFP Mart, Cold Storages and godowns. ▪ Transportation of produce to different parts of the country.
Cold Storages	▪ Storage of tamarind till the time the owners wish.
Wholesalers	▪ Supply of Tamarind to retailers
Retailers	▪ Direct sale to consumers

Constraints in value chain

Constraints are being faced in the different stages of the value chain.

Constraints in Pre-Production Stage

Indebtedness compels for low price: Poor tribal are already in debt before the harvest of tamarind. Thus it becomes a preordained MoU with the local middlemen to sell their produce to them. Thus this indebtedness seizes an opportunity to negotiate the rates. Finally they befall bound to sell it in a very low price.

Lack of entrepreneurial abilities: Through tamarind collection and marketing play an important role in arraigning the household income, the tribal communities many times just dispose to get some income to meet their basic needs. Adding value, processing, collective marketing kind of activities are rarely adopted it is because poor entrepreneurial abilities. Thus the income at the primary producer level always remains less.

Constraints in production stage

Lack of transportation: Mandis are far away from the villages, transport is not available easily and therefore they sell tamarind to the Kochiyasin their local haats. Orin many cases the middlemen directly lift the produce from their houses.

Lack of packaging material: Sacs and large bags are not available for proper packaging. Thus it becomes difficult for them to carry tamarind to the far distant places. Those who are aware of the markets where they can fetch better price cannot carry the voluminous produce due to this constraint.

Constraints in post-production stage

Lack of Storage place: The villagers do not have sufficient storage place and therefore it is mandatory for them to sell tamarind at the earliest.

Cheating in weighing system: Middlemen's cheating is a very common practice. Villagers' unawareness vis-à-vis weighing system, weight calculation, manipulated weights and balance lead in effortless befooling.

Unawareness about the minimum support price: Though this is a continuous phenomenon which comes annually but they never try to find out the options to fetch better price. Due to manifold reasons they remain guild with the decades old prevailing system. They are still unaware about the minimum support price system declared by the competent authority.

Unawareness about Quality Gradation System amongst community: Community doesn't bargain forthequality produce also. The produce of superior quality are procured and paid equal rate by the middlemen. But from their end to next levels the price rise takes place with the increase in the quality.

Lack of Storage godowns: There are no storage godowns in these villages. As per the necessity the middlemen make a temporary arrangement after the procurement in the season.

Lack of processing units: There are only few limited processing units in the area. This restricts the opportunity to fetch employment as well as income.

Recommendations

Standardization of Weighing System: Weighing system must be standardized for the upliftment of the rural economy. The tricky and faulty manual weighing system does not substantiate their hard labour. The local methods of quantification vary from place to place. Therefore there is a serious need to educate the collectors it as an immediate remedy.

Minimum Support Price: The most important aspect would be to declare minimum support price so that there can be monopoly in the trade of Tamarind.

Standardization of Quality Gradation System: There are no clear cut guidelines specifying the parameters to assess the quality. This creates an ambiguity in price which is being exploited the fullest by the traders at different levels. The entire activity from collection of raw materials to grading, cleaning, storage and transportation should remain under effective control so as to ensure high quality of final product. The processors, exporters should be motivated to adopt the attest quality management system for increasing the business of tamarind.

Availability of short term low interest credit: Due to lack of irrigation facilities and dependence on rain, they are only able to cultivate a single crop. The monetary requirements hence forth are met out from the external money lenders. They lend at exorbitant rates so poor villagers are forced to sell the whole tamarind at the price which he dictates. This pertinent problems call for money lending institutions like Basix which are either non-government, Government monitored. Habit of community saving must be inculcated in the people to meet their short terms needs at low interest rates.

***Infrastructure for value addition*:** Value addition process should be enhanced by creating better access to the value addition related infrastructure include deseeding tools and techniques. Setting up processing units within the tribal areas would definitely help the gatherers to earn more income than by selling the same in raw condition. It will be therefore appropriate that there should not be a monopoly of the contractors for marketing of tamarind. The solution is to set a promotional marketing boards, distinct from commercial corporations (which are insufficient) with responsibility for dissemination of information about market and prices to gatherers. The board would help in grazing the gap between what the consumer pay and what the gatherers get.

***Awareness Generation*:** Tribal and villagers of Jagdalpur are not at all aware about the weight of their tamarind. The treacherous middlemen and tribes are so shrewd that they cheat these villagers in many ways. The illiterate tribes especially women do not have idea of the weights. They simply cheat them in front by telling them lesser weight than what actually it is. Another way of cheating is by misbalancing the weighing machine through its dye itself. In normal condition it looks a well-balanced machine but there is a difference of 20 per cent – 30 per cent.

Technical Training by NGOs and GOs: The villagers have willingness to work. But they have limited employment opportunities. Setting up of small scale or cottage industries can help them to fetch employment opportunities. NGOs must come forward to impart technical inputs so that their skills can be enhanced.

***Research and Development Centers*:** Research and development centers must be established so as to identify the prevailing gaps. New users of are yet to be discovered for value addition. It is also required to invent genetically improved species, scientific techniques of harvesting, semi processing, processing, storage etc.

Harvesting Technique: Unscientific and indiscriminate exploitation has resulted in denudation and dwindling of resource based in many areas. Therefore proper training programmes on harvesting technique should be conducted so that NTFP management continues to be incidental to general forestry operations. Careful planning is necessary for intensive regeneration of NTFP items and getting primary collectors in it for sustained and gainful earnings.

***Conducive Policy Environment*:** In order to have adequate and sustained supply of tamarinds and at the same time to ensure remunerative rates to tribes for collection, trade of Tamarind and few more NTFP items in the state should be nationalized. Nationalization of trade in respect of a few NTFP items should be all over the country.

For increasing Tamarind collection and to ensure fair wages to the collectors it is advised to make comprehensive strategy and frame by laws for effective implementation of NTFP programmes by involving tribes and rural population and eliminating the intermediaries from the state.

- A comprehensive project assessing the potential of NTFP feasibility of collection, processing and marketing etc. is yet to be formulated and implemented for all commercially important items.
- Strong apex organization manned by competent personal having no constraint of working capital must be created in each district for maximizing collection of tamarind and other NTFPs by involving other agencies. In the absence of national level organizations like TRIFED it is difficult to monitor MFP Trade starting from harvesting till its export.
- The Forest Department and CGNWFP Board is separately functioning at state level but its staff must be separated at the village level also for effective results.

Community based Tamarind collection and processing

As mentioned in the recommendations there is need to evolve a community based institutional structure which ensures involvement of SHG members in various stages of the value chain.

Level	Institutional Structure	Parameters	Expected role
1	SHG (Activity based)	▪ Male as well as Female members from households having tamarind collection business to form into SHG groups	▪ A primary group to bring the people depends on tamarind collection and marketing. ▪ Ensure primary aggregation, processing ▪ Ensure micro finance services (saving and credit) to prevent distress sale of tamarind
2.	Cluster level organization of SHGs	▪ An institution on the top of the SHGs ▪ Function like	▪ Secondary level aggregator ▪ Ensure storage facility for the product by having two or three warehouses

		unregistered entity ▪ Scope could be 5 to 6 villages	▪ Engage in processing and transportation ▪ Assist the SHGs in better functioning and provide assistance ▪ Play like a financial intermediary to assist the SHGs to render credit services to the members to prevent distress sale.
3.	Block level federations of Tamarind Collectors	▪ Formed on the top of the cluster level organisations ▪ Will be a registered entity could be a Producer company or a cooperative	▪Primary hold responsibility of processing and marketing ▪ Maintain a brand and establish larger market linkages ▪ Work for infrastructure at village level by leveraging various government schemes ▪Building convergence with CG NWFP Mart, Upaj Mandi, Van SanrakshanSamithis, farmer associations, producer companies, larger processing units, etc.)

Conclusions

Tamarind plays an important role in the livelihoods of tribals . However, the prevalence of unorganized market with large number of middlemen and small traders has resulted in exploitative relationships as a result of which they are not able to gain higher returns. Organized market in the form of Government societies though exists, its outreach is limited. This is due to delays in payment. The services offered by these societies are also limited. There is absence of proper handling and storage facilities for protection from sunlight, water and dust. This results in dumping of stocks and getting wasted due to infection. In unorganized market the tribes get cheated during weighing. Pricing is often determined not by market factor (demand and supply factors) but the voice of powerful and dominant players who fix it as per their whim. Illiterate tribes thus get cheated as a result of the same. Value addition has also not been taken up through involvement in producing multiple tamarind products and thus resulting in increased income of the tribes. No local level institutions are in existence to promote their livelihoods. Hence efforts in increasing the outreach through organized market can go a long way in strengthening their tamarind based livelihood. Building institutions of the poor in the form of SHGs, cluster level organization of SHGs, Block level federations and taking up additional value addition works can ensure improvement in their livelihoods.

The Service Sector activity: Electrician in Bastar

Service sector– Electrician

1. Introduction

Modern life cannot be imagined without electricity. Since the advent of electricity it has been put to use for various domestic and industrial purposes. It has become an unavoidable necessity in our daily lives. Modern man is very much dependent on electricity. But if this essential necessity witnesses any problem, it causes a lot of worry because a layman cannot handle the electricity related issues. Trying to address it on one's own can prove dangerous. To handle electricity related situations, it is necessary to access the services of a qualified electrician who has complete knowledge about work and can handle any malfunction. The electricians' job includes testing, fitting and repairing wiring and circuits. The electrician is also responsible for installing new electrical infrastructures.

Electricians work in residential homes, public houses and buildings. They ensure maintenance and installation of electrical wiring and all the related equipment. Electricians are always in demand because every other day new buildings are being made and it is the job of electrician to install new circuits after building work is completed. These factors truly highlight the increasing role of electricians in our society.

Some of the basic responsibilities of electricians are fitting circuit breakers, fuse boxes and earth terminals, installing alarms and security systems, reading blueprint and assessing methods to work out fitting of plug sockets and wiring, regular maintenance of electrical equipment and wiring, installing initial wires along the ceilings, walls and floors.

2. History and trends of electrician trade

The nature of electrician trade has changed with evolution in the usage of electricity. In the 1800's the inventors of electrical equipment competed against each other to show their new inventions to the world. The first electricians were the people who were hired to build or operate these displays of electricity at the shows and expositions. Once electricity became more prevalent in the nineteenth century for both industrial and residential use, there arose a need for the overall maintenance and installation of these electrical systems. The electrical trade when it was born taught not only how to maintain and repair, but also to install the electrical appliances and growing lighting systems. The trade became more specialized in the twentieth century. By the end of the 1900's there were three basic areas of specialization, which are the commercial, domestic and industrial fields.

The electrician trade continues to grow and expand, as the need arises to grow for those who have been trained in this profession. This is due to the fact that existing systems continue to require maintenance, while new systems continue to be developed. As new uses for electricity are expanded, the field will continue to grow and specialize further.

3. Electrician trade in Bastar district

3.1 Demand side conditions

Bastar district is not an exception to requirement of electricians. With about 98,000 electricity consumers spreading across household, commercial & industrial establishments and electricity required for public streets and for irrigation and in order to address huge need for addressing the problems which arise, there is huge need for electricians. Among the electricity consumers include 89.6 per cent households, 5.8 per cent commercial establishments, 0.6 per cent industrial establishments, 3.7 per cent for irrigation purposes and 0.1 per cent for street lightning purposes.

Bastar district also happens to be bustling with construction activity. A lot of construction activity is taking place around the district. With multiple breakups of the district there is need for further consolidation / concentration of development efforts. Such efforts to develop the district mean taking up industrialization and infrastructure development drives. The demographic changes are also resulting in increasing population in the district. Such changes are creating further demand for electricians.

At present Bastar district has about 600-700 electricians who are engaged in electric works in residential houses, construction sites, office establishments (public and private) etc., A majority of them are located in Jagdalpur and a surrounding radius of about 20 km. They do work as electricians under electrician contractors at construction sites or as free lancers offering services individually or through electric contractors / shops etc., these electricians despite their expertise in handling electricity related works related to household wiring are not able to take up employment in large scale public / private establishments. This is mainly because they come from low education background (5^{th} to 8^{th} standard) and lack vocational education background. Hence an added vocational education certification can go a long way in assisting them to take up employment in large scale public / private establishments. Even if they want to take up self-employment, a formal certification in vocational education can go a long way in helping them to get the required financial assistance from financial institutions. The said electricians are from the local areas. Electrician contractors who number about 15-20 in the area are from outside states – Andhra Pradesh (AP), Madhya Pradesh (MP) and Uttar Pradesh (UP).

The demand for electricians comes from domestic, commercial and industrial establishments. While the demand for electricians from domestic and commercial establishments are met with the existing number of electricians, electricians for industrial establishments are a shortage. The electricians who are trained in house wiring do cater to the needs of domestic and commercial establishments. But the industrial establishments require a higher level of skills which are a shortage in the area. The demand for electricians is expected to increase because of these factors: -

3.1.1 Entry of Industries

Administration is trying to create a positive industrial climate in the area and trying to attract investments. The entry of industries is bound to increase demand for electricians. The entry of two large industries – the steel plants by National Mineral Development Corporation (NMDC) and Tata Steel will create a demand for large number of electricians. NMDC is coming up with a large scale steel plant at Nagarnar with an investment of Rs. 15,525 crore. Similarly Tata Steel is coming up with a steel plant with an investment worth Rs. 19,500 crore at Lohandiguda. These huge industries are bound to create huge demand for skilled work including the electrician trade.

3.1.2 Increase in electricity usage

In Bastar district as of now, a larger number of domestic users of electricity have a single point connection. 47,065 of 98,150 i.e., 48 per cent have single point connections. As the benefits of development reach these sections resulting in higher incomes the electricity usage by households are going to go up. Presently these households do not require electricity for any other purpose other than lighting. An increase in income levels may result in investments on household wiring, usage of electric fans etc., by the BPL households. This may shoot up demand for electricity in the faraway locations too and create demand for electricians.

3.1.3 Demographic changes

The area is also likely to witness demographic changes with increase in population. The increase would be both due to both increases of indigenous population as well as through entry of outsiders for employment purposes. With this there could be flowering of new residential areas and locations. This in turn would increase demand for electricity and demand for electrician services.

3.2 Supply side conditions

At present there are some institutions located in Bastar district which are offering training in vocational trades, a few of which are also offering course in electricity trade or plan to. There are two types of institutions. These are a) Industrial Training Institutes (ITIs) and other Vocational Training Institutes. There are about 6 ITIs located in the district – 2 at Jagdalpur, 2 at Bastar, 1 at Keshkal and 1 at Nagarnar. The Government ITI in Jagdalpur and Bastar are offering vocational training in Electricity trade. One of these ITIs in Bastar has been declared a centre of excellence. The Government ITI in Bastar offers electrician trade both as a specialized package i.e., for two years or as part of multi skilled trade with one year of specialization in electrician trade. The ITI courses are supported by the Directorate General of Employment & Training (DGET) and syllabus prescribed by National council for vocational training (NCVT). Youth, primarily from the district headquarters and block headquarters and surrounding villages enroll into these ITIs. Youth from distant and remote villages hardly enter these ITIs. Female youth too hardly enroll into ITIs. About 48 electricians @16 from 3 institutes are passing out from these institutes as electricians.

The other vocational training players in the district include ISAP, CAP Foundation, Don Bosco Tech, I-CAN. Each of these institutes is offering a variety of vocational educational courses which include – Sales & marketing, Office management, BPO, Automobile, Nursing, Security guard, Hospitality and Retail. One of these institutes – CAP foundation has a training module in electricity trade – house wiring. The course run by these institutes are supported under the SGSY (presently NRLM skills program) and syllabus prescribed by the same. The facilities provided include free food and accommodation and free training. The program is supported by the Department of Rural Development under the NRLM skills development program. A first batch of 30 house wiring students passed out from CAP foundation recently. Each year it is to run 4 batches of house wiring students totaling 120 students per year.

The supply side of electricians as mentioned earlier presently emerges from informal and formal association. Informally the skills are acquired by working as helpers with master electricians. They associate as helpers and gradually learn the trade. This is the dominant mode at present. Another way it is being learnt is through vocational education. Vocational education at present is being provided by Industrial Training Institutes and Vocational Training Institutes. The following factors are likely to contribute to increased supply of electricians: -

3.2.1 Increase in ITIs offering Electrician trade:

t present there are about 6 ITIs in the district of which 3 are offering electrician trade. This number will be going up in future. Increase in ITIs offering vocational trade including electrician trade would go a long way in increased supply. The need for increased number of ITIs will be necessitated by entry of industries.

3.2.2 Increase in VTIs offering Electrician trade:

Similarly most of the VTIs in existence in Bastar district are primarily focused on service sector related trades such as hospitality, nursing, sales & marketing etc., They are not offering electrician trade primarily due to investment factors. Introduction of the same in existing VTIs and upcoming VTIs can increase the supply.

3.2.3 Increase in specialized institutes:

Entry of specialized institutes can also result in increase in the supply of electricians. At presently R-SETI has been set up in the district. Similarly there are provisions for setting up skill development centers at block levels as per the policy thrust of National Skill Development Corporation (NSDC). A 'Livelihood College' along the lines of Dantewada is also being considered. All these are bound to increase the supply factor.

4. Status of Vocational education in Bastar district

At present the level of skilled jobs in the district is limited due to lack of industrialization.

4.1 SWOT analysis

A SWOT analysis on vocational education scenario in the district reveals the follows: -

Strengths	**Weaknesses**
▪ Availability of large pool of human resources who could potentially be skilled up ▪ A large number of domestic, commercial and industrial establishments which are throwing up demand for skilled workforce ▪ Policy thrust of attracting industrial investments throwing up need for skilled workforce ▪ Policy thrust and focus on skill building of youth for their increased employability necessitating skilled development trainings	▪ Scarcity of vocational training institutes in the district ▪ Poor industrial base at present ▪ Low usage of electricity consumers ▪ Poor skill levels for taking up industrial electric work ▪ Electricity work contracts dominated by outsiders
Opportunities	**Threats**
• Entry of large scale industries • Entry of vocational training players • Increasing educational levels motivating youth to	• Law & Order situation (LWE extremism) • Opposition to land acquisition for industrialization

take up non-traditional occupations

Top of Form

4.2 Players involved in vocational training

The players involved in vocational training in the district include the 6 industrial training institutes and the VTIs namely Bosco Udyog Kendra, ISAP, I-CAN, CAP, NIIT, Tally etc.

CAP foundation provides three month training on house wiring. The course is a combination of theory and practical class. The electricians trained by CAP foundation are expected to be tracked for a period extending to one year. They have been placed as electricians with electric contractors as helpers. While the basic training gets them familiarized with the basic concepts and initial familiarization, their placement as helpers assists them in acquiring and enhancing their practical skills. Other VTIs such as Don Bosco Tech also plan to start Electricity course.

Rural Self Employment Training Institute (R-SETI) a self-employment training institute has also been started by State Bank of India (SBI) the lead bank in Bastar district. R-SETI offers self-employment training in a variety of courses, including the electrician course. Besides the technical aspects related to electrician trait, it also offers training in enterprise and business management. There is also provision for linkage with credit schemes of the Bank.

The district is also likely to see a further boost of industrial training institutes (ITIs) with the establishment of large scale industries and small and medium industries in the district. Besides there will be need for further establishment of vocational training institutes and the number of trades. Government of Chhattisgarh and Bastar district administration also plan to start a "Livelihood College" in Bastar district similar to the lines of "Livelihood College" in Dantewada district. This would encompass the establishment of a campus. The campus would have a set of classrooms and workshops. Prominent vocational training players from around the country would be involved in providing vocational skills training to the youth in the district. This would be supported under NRLM skills mission, Chhattisgarh skills development corporation, Integrated action plan, Bharat rural livelihoods foundation etc.

4.3 Placement linked vocational training

The following table displays the status of vocational education being offered under NRLM skills development program. Out of a target of 2,594 to be vocationally trained – 1,374 have been trained. About 1,060 of these have been placed with a placement rate of 75 per cent.

Table: Project wise Skills training

SNO	District	PIA Name	Project Name	Total Target	Total Trained	Total Placed	(Trained VS Target) (per cent)	(Placed Vs Trained) (per cent)
1	Bastar	Aide-et-Action	SGSY - Decentralized	608	453	318	74.51	70.20

			Demand Drive Training & Place					
2	Bastar	BOSCO	North Central States	359	109	106	30.36	97.25
3	Bastar	CAP	IAP-South(NABCONS)	480	120	109	25.00	90.83
4	Bastar	India Can	Creation Of Jobs employability	787	420	328	53.37	78.10
5	Bastar	ISAP	Special Project under SGSY	180	92	86	51.11	93.48
6	Bastar	MANTHAN	Special Project Under Swarnajayanti Gram Swarojgar	30	30	27	100.00	90.00
7	Bastar	NIIT	East	40	40	28	100.00	70.00
8	Bastar	Tally Solutions Pvt. Ltd.	East'2011	50	50	13	100.00	26.00
9	Bastar	Tally Solutions Pvt. Ltd.	West'2010	60	60	45	100.00	75.00

(Source: NRLM skills – District Project wise details)

The beneficiaries under the skills program include 1, 374 that have been trained of which 1,060 have been placed. A large number of trained i.e., 53.3 per cent are from scheduled tribes. 27.4 per cent are women.

Details of Trained and Placed beneficiaries

Gender Wise				**Category Wise**									
Male		**Female**		**SC**		**ST**		**BC**		**Others**		**Minorities**	
T	**P**	**T**	**P**	**T**	**P**	**T**	**P**	**T**	**P**	**T**	**P**	**T**	**P**
341	264	112	54	92	78	193	112	134	107	34	21	0	0
83	82	26	24	3	3	67	65	32	31	7	7	3	3
82	71	38	38	0	0	92	82	26	26	2	1	4	4

369	298	51	30	13	23	271	201	113	83	23	21	0	0
56	52	36	34	10	10	46	43	31	28	5	5	0	0
4	1	26	26	1	1	8	8	19	16	2	2	0	0
32	22	8	6	14	6	5	5	12	12	9	5	1	1
30	7	20	6	0	0	30	8	7	2	13	3	9	2
0	0	60	45	31	23	21	15	0	0	8	7	8	7

4.4 Places of industrial employment

The demand for house wiring electricians is from construction contractors, domestic households, and commercial establishments. Electricians hence either work on freelance or for contractors. The ones who have received training with ITIs get into larger industrial establishments normally located outside the state. Employers that hire industrial electricians include steel producers, electrical firms, motor vehicle manufacturers, mining companies, and some parts manufacturers.

There is no system of tracking students with regard to their employment after finishing ITI education. However, it is said that the pass outs from Government ITI are finding employment within a maximum period of one year. Some of them have migrated and are placed in industrial establishments in Raipur and Chennai. A few are employed in bigger firms like National Mineral Development Corporation (NMDC) and National Thermal Power Corporation (NTPC). Opportunities for industrial employment are limited at the moment and hence the pass outs desirous of making a career are moving out of the state.

The situation of lack of industrial employment as electricians is expected to change with industrialization. The setting up of NMDC steel plant in Nagarnar and Tata Steel plant is expected to bring the change by opening avenues for industrial employment. The scope for electricians is expected to go up after two years.

Among the government establishments the electricity department and railway department offer good scope for electricians. In Bastar district there are about 550 electricians on rolls as helpers with electricity department. They receive a salary of Rs. 8,000 per month. They are recruited through a selection process which demands testing of their physical capacities as well as their aptitude for the trade. The minimum eligibility is 10^{th} standard. Once being appointed on contract basis for two years, they are regularized into permanent positions after two years. Once regularized, they receive an amount of Rs. 17,000 – 18,000. Starting as helpers, they can become Assistant linemen, Line supervisor, Line inspector etc. While the recruitment is through open competition across the state, the youth in the district have a 10 per cent weightage. These electricians are placed in about 6-7 sub-stations in the district.

4.5 Skill levels of Electricians

The skill levels of the electricians in the district while it is just enough for house wiring works in residential and office establishments, it is not sufficient to take up industrial electrical work. Among the 600-700 electricians in the district, only about 20 of them have knowledge of motor wiring works.

4.6 Difficulties encountered by VTIs

While skilling of youth through vocational education is a necessary requirement in the district, there are a few dimensions related to the cultural aspects which need to be addressed. VTIs in the district face difficulties in various stages i.e., in pre-recruitment, recruitment and placement. This has to do with attachment to tradition. During the pre-recruitment stage there is large scale mobilization of youth. This is done through getting a list of BPL families from the villages from the Zila Panchayat, organizing awareness camps in the villages, motivating the youth from the villages. Initial resistance is seen as youth need to move out of the village for receiving training on the same. Once put up in hostel their continuation needs to be ensured. In case of any festivals, youth who go for a day or two never return back. After the training, once they are placed in an employment, they do not necessarily continue in the job. In case the youth go to their village on the pretext of festival, they never return back. They find it difficult to go out of their cultural realm and adjust to new situations. Hence it might be important to integrate into the training program – a module which emphasizes on adjustment to cultural changes.

One of the difficulties stated by vocational training institutes for starting electrician trade was the issue of investments. Electrician trade requires an investment of about Rs. 1 lakh towards purchase of various electric tools and equipment. The VTIs generally prefer to choose trades which do not require any investment and hence prefer to choose service sector related trades which require little or no investment – such as sales & marketing, nursing which do not require investment on the same. Hence while there is an agreement that electrician trade can be started and has potential, the VTIs are not coming forward on account of financial support in form of subsidy / grant for purchase of tools and equipment.

5. Recommendations

The following recommendations are made to create/ enhance the electrician skill among the youth in the district. It is understood that the entire process of skill building and creation of self-employment cannot be done by any one player and several players need to contribute for the cause.

- The Short term “Electrician” course need to be designed and launched through various existing vocational skill training institutions. Institutes like National Academy of Construction, ITIs, Polytechnic colleges, experienced private vocational training institutions like Dr. Reddy foundation, can play role in design of the course. Similarly, along with the above institutions, NGOs working for vocational trainings can take lead role in offering the course to the youth in remote locations.

- Organize village level enrollment camps to motivate the youth to join the course and their parents to send their children to join the course. The NGOs who are working at the grass roots, the staff of NRLM, SHGs and village organisations can take lead in this regard.

- Encourage formation of Electrician clubs which act as guilds and which share tools and equipment required for the trade. Electrician clubs can themselves take up contract works instead of individual electricians offering services through Electrician contractors. The NGOs and Chhattisgarh skill development Authority may take lead role in this process of developing the clubs.
- Financial support to Electrician clubs for exposure visits to industry aimed at enhancing their understanding of industrial electrical works. The Chhattisgarh skill development Authority, the SGSY programme, NABARD may get involved in this process.
- Financial support need to be provided to the trained youths to start their individual enterprise as part of self-employment. The following financial product is designed to promote electrician skill based self-employment.

Financial product to promote individual enterprises for self-employment

S.No	Particulars	Rate	Quantity	Amount in Rs.
A	**Fixed cost**			
a.	Electrician tool kit including drilling machine.	2,500	1	2,500
b.	Extra electrical equipment, big sized screw drivers, saw	Lump sum	1	1,000
c.	Bicycle	3,000	1	3,000
	Sub total			**6,500**
B	**Variable cost**			
a.	Unit maintenance (Rs. 300*12=3,600	Lump sum	1	3,600
	Sub total			
	Grand total (A+B)			**10,100**
C	**Income**			
a.	Wage earning (200 per day x 25 days = 5000/- per month)	5,000	12	60,000
b.	**Total Income**			60,000
c.	**Net income per month = (Total income- Variable Cost)**			**4,700**
d.	**Net income per annum after deduction of fixed costs**			49,900

- On completion of the electrician course, the youth need to be linked with the appropriate employment opportunity. The institutions which are involved in offering the course can take lead in organizing the campus interviews, coordinating employers for placements.

- It is noticed that the post placement support is vital to ensure retain the trained youth at the place where the employment created. The Electrician clubs, Chhattisgarh skill development Authority can play role in providing the post placement support to the youth.

The Service Sector activity
Masonry in Bastar

Service sector activity – Masonry

Introduction

Masonry is a craft to build structure out of bricks and stones by mason. It is very wide and broad area of work which includes stone masonry, brick masonry, cement masonry, fly ash masonry, etc. Moreover it includes the highly specialized craftsmanship for small house construction to large scale industrial constructions and the huge commercial construction projects.

Masonry work is a complex of processes that includes, in addition to the basic processes (the laying of brick or other stone in mortar, the delivery and laying out of the stone, and the smoothing of the mortar), related auxiliary processes (the erection of scaffolding and trestles and preparation of the materials at the construction site).

In ancient times, skilled masons erected stone buildings and complex engineering works (towers, arched bridges, and domes); however, the masonry work was done slowly, and the methods changed little over the centuries. Masonry work was done by hand; the master masons usually performed all the preparatory and transport jobs at the site and prepared the mortar and delivered it to the work area themselves. In building walls, cumbersome scaffolding was erected to their full height. The work was done only in the warm seasons. In the early 20th century, measures were taken in the developed countries to improve masonry work (mechanization of the delivery of materials and the preparation of mortar).

The technology of masonry work began to change substantially in the last 50-60 years a period of intensive development of construction. During this the new principles were developed for the organization and mechanization of construction from masonry materials, and advanced, effective methods for performing masonry work, as well as efficient tools, attachments, and supplies, were introduced. The step-by-step method was widely introduced, making possible continuous performance of masonry work by combining it with the installation of prefabricated elements and other accompanying operations. The brigade method of labor organization was introduced, and the brigades were divided into teams, in which the work of the masons was clearly differentiated according to their skills. The methods for laying the mortar and stone in the structure and work procedures to be used under winter conditions, as well as the means for delivering the mortar and the stone from the producer plant to the work areas, were also improved, leading to increased labor productivity, improved quality of work, and more economical consumption of materials.

In modern construction a distinction is made among the following basic types of masonry work (stonework), depending on the materials used: brickwork on walls, columns, and other parts of buildings and structures, made with ordinary (fired) and silica brick without facing; with faced brick or ceramic stone; with hollow ceramic stones or solid or hollow slag concrete stones, which are used mainly for the walls of frame buildings or for the load-bearing walls of buildings with a limited number of floors; with sawn stone, predominantly light natural stone (tuffs and limestone); and masonry work with large concrete, reinforced-concrete, or brick blocks. However, in erecting foundations and basement walls in modern large-scale construction, labor-intensive quarrystone masonry has been replaced by prefabricated reinforced-concrete and large-block elements.

The most widespread type of masonry work is the erection of solid brick masonry using individual bricks set in mortar. “Light masonry,” consisting of two parallel face walls each one-half a brick thick and filled with a light concrete, loose slag, or another insulating material, is sometimes used. Such brickwork ordinarily is used for buildings not more than two stories tall. The masonry work on the walls of high-rise housing is performed simultaneously with the installation of all the prefabricated structural elements of the building, including stairways, floors, window and door units, partitions, and balconies. Ordinarily the masonry work is done with

standard trestles, which provide safety and are quickly set up, disassembled, and moved to a new place using an erection crane. Suspended scaffolding, as well as building scaffolding, which is assembled from individual elements during the process of masonry work, is used for constructing the walls of industrial and other buildings more than 5 m tall. The masonry materials and mortars are also delivered by erection cranes, including the tower and jib (crawler and tire) and track types. Brick is delivered to the work areas in packets on wood and metal pallets or in packets without pallets (silica brick), and the mortar is delivered in special containers. For large volumes of work, mortar is supplied by pipe using a mortar pump.

Scenario in Chhattisgarh

Chhattisgarh is one of the fast growing states in the country especially where the industrial development is in takeoff stage. Once upon a time Bastar district was the one of the largest districts in the country. Once the state of Chhattisgarh was formed as a separate state in the year 2000 from Madhya Pradesh, the political and geographical boundaries of Bastar district were revised thrice. Every time the district boundaries are realigned, this created an opportunity to set up new administrative infrastructure and housing development. The recent realignment in January 2012 has brought out demand for large scale construction work in the district for government offices, private establishments and housing. This development has brought out demand for various skilled activities and the Masonry stand first in the list.

As per 2002 National Sample Survey (NSS), India has 25 per cent of population belonging to Below Poverty Line (BPL) economic strata. Due to non-availability of Institutional Skill development programmes, majority of this population get only subsistence level earnings.

Construction Industry is the second largest employer after agriculture, and therefore the Government is desirous to develop a work force, which is competent, employable and proficient in Construction Trades.

Trends

The construction industry, industrial development or any other infrastructural development is in takeoff stage. The following list of projects either operational or in pipeline confirms the future growth of the construction industry.

- Tata Steel has signed a MoU with the State Government for setting up of a 5 MTPA Greenfield Integrated Steel Plant in Jagdalpur.
- NMDC is setting up a 3 million tonne Integrated Steel Plant in Nagarnar, 16 Km. from Jagdalpur at a cost of about Rs 16,000 Crore. NMDC has been allotted 1,775 acre of land to build the facility. The project was started in 2008 and is expected to be commissioned by 2015-16.
- Intra-state airlines have been planned for the following cities: Jagdalpur, Raigarh, Bilaspur, Korba and Bhilai. Work to be commenced soon.
- Khandelwal Industries, Kotapad, Jagdalpur
- S K Brick Industries, Near Jhankar Theatre, Jaipur Road , Jagdalpur
- Rudra Cement Ltd., Kotapad , Jagdalpur
- Mahamya Cement Bricks & Pole Industries, Kotapad , Jagdalpur
- Hira Group. GPIL: Iron Ore Crushing Unit , Jagdalpur
- Navbharat Fuse Co. Ltd , Jagdalpur

- CG Housing Board , Jagdalpur
- Baldev Infra Projects (P) Ltd., Jagdalpur

Current Employment Potential

The potential for skill promotion in masonry activity has been studied in the district with reference to skill sets of the youth. Demand for masonry skills is high due to the booming construction activity. There is however limited awareness among the youth regarding its potential for employment. Other factors preventing youth from pursuing this activity despite the huge demand is inaccessibility to vocational education, poor educational status and lack of motivation.

Opportunities for employment as masons are high for the youth both for those desirous to stay within the district as well as those preferring to migrate outside the district / state. It is predicted that among the untrained masons, about 20 per cent masons are getting absorbed within the district, 10 per cent in neighboring districts comprising towns - like Bacheli, Baladila, Kirandul, etc. About 70 per cent of masons at present are migrating outside the state.

However, with the expected industrialization and urbanization huge opportunities are going to spring up in the district. As a result not only the masons will get absorbed within the district, but will also result in demand for many more masons in the district. The pipe line projects once starts getting implemented will create new opportunities.

Construction Work in the Collectorate Office, Jagdalpur

Unskilled Labour, Supply & Demand

There is a huge segment of unskilled workforce in the district involved in economic activities of low economic value. They are characterized by low levels of education and wages. The unskilled and low educated youth come from poor households. They cannot take up either agriculture due to landlessness / limited land holding or take up skilled occupations due to lack of skills. This segment of the unskilled workers is the feebly motivated group who can be trained for becoming the skilled one. But it is quite pertinent that the area has such a deep rooted problems which has neither remedy nor solution. Naxalism, poor quality of education, Lack of technical expertise, remoteness, unawareness are the limiting factors for the youth.

Thus the solution of it is to find out opportunity for getting the secured job which can be a basis of their source of revenue. One of such opening is the mason work with which they are well acquainted and comfortable. Now this skill has lot of potential in terms of its expansion also

its demand is never ending. But the formidable need of time is to build up their capacities by providing the relevant trainings available in many institutions in various trades.

Demand Side Conditions

One of the factors that are increasing the relative demand for skilled mason is attributed to the introduction of fast urbanization. Infrastructural development is going on a fast track and hence pushing requirement for skilled manpower.Thus, there is an increase in the demand for skilled masons in the cities like Visakhapatnam, Bangalore, Hyderabad, Secunderabad, Chennai, etc. In addition to these cities there are many opportunities in the southern states of India which escalate the demand curve of masons ascending. Trade and the effects of globalization are also playing a role in affecting the relative demand of skilled labor. Indian construction industries working in the states like in Tamil Nadu, Karnataka, and AP are also looking for trained migrant workers. It affects in terms of time and cost both.

This factor is thus, increasing the wages of highly skilled workers. Subsequently it is expected that the mason must be competent in its trade. On the contrary the lot available in Jagdalpur needs lot of up gradation in terms of their skill, competence and expertise.

Employment Channel

In Pakhnaar village the migration rate is quite high and migrants move to Bacheli, Bailadila, Koraput, Vishakhapatnam, Hyderabad etc. Those who have better linkages also move to Andhra Pradesh, Tamil Nadu, Kerala and Goa. The villages have strong connectivity with the agents and the contractors. The person who migrates in one season also acts as an agent next year, because he establishes his own links in the migrated sites. Then he establishes liaison with those youth with whom he has good rapport in his or the neighboring villages.

Usually, they go for stone breaking, hand pump digging, tube well digging and mainly to the construction sites for masonry work. A big lot of migrants go to Hyderabad for making utensils too. The agents and contractors have strong connectivity with the village as per the requirement of man force in the village from where the persons are to be sent. Moreover the agents arrange for the four wheelers also depending upon the number of persons required.

Expected Skills and Behaviour

The expected skills and Behaviour from the trained masons are different from employer to employer. In the large budgeted projects or corporate kind of projects the masons are expected to have minimum education of $10^{th}$and also look to have better technical understanding like concrete mixing, using updated construction related tools, exposure to advanced construction technology, etc. Similarly the trained masons were also expected to be a good team player, because there is good coordination skill is required to work with the unskilled labour.

When the contractors hire the services of trained masons, they primarily look for speed in doing the work. Similarly they also look for some understanding on technical knowledge to prevent the wastage of raw materials like cement, sand etc.

The mason’s services are also demanded by the people to take up some kind of repairing works to the houses, construction of new rooms, flooring, roofing etc. In these cases the customers expect better skill and also look for better suggestions to reduce the construction costs.

Location of Employment

There is a better chance for availability of employment to the skilled masonry people in

(i) ***Jagalpur and surroundings:***Currently some amount of construction work is taking place as part of building infrastructure for government offices, education institutions and private establishments in Jagdalpur and its surroundings. Therefore the trained people can get opportunity in these projects and the trained youth from Jagdalpur and surroundings can continue to operate from their villages

(ii) ***Industrial locations:*** There are areas in which the industrial development is taking place. The industrial development in Nagarnar and Lohandiguda will create demand for the skilled masons. These large scale projects will create demand for construction activity of residential areas.

Youth may also take up some self-employment with their masonry skill, in such cases youth can operate from their villages, but the youth need to be conscious enough to get adequate work to engage themselves to have uninterrupted income.

Working Conditions

The workers usually go to work in the construction site, steel & other plant, tube well & bore well digging, Andhra brand well digging and utensils factory. Those who are working in construction industry on in a plants have at least one destination and work in a routine shifts. They have fixed duty hours for working. They have a systematic and organized daily schedule. Similarly the workers of factories and other units also have a systematic routine. But the most vulnerable group of the workers is the field workers. There are the workers those who do the tube well, bore well and Andhra well digging work. This is the most strenuous job amongst all. This work is always a moving job. They cannot remain stationed in one place. Regular movement from one place to another disturbs their life a lot. Their work defines no boundaries of summer, winter or rains. They do not have any day or night in their routine.

Remuneration

The employers pay the full remuneration which is prevailing in the market as per the type and category of the worker or as per the Government's SOR. These workers are not getting the complete payment which is released from the employer. It is so because only 60 per cent of the payment is paid to the worker and rest 40 per cent payment goes as the share of an agent. Apart from this an agent receives Rs. 15/- per day as an additional incentive. Every month these agents get nearly Rs. 360/- per worker (@ Rs. 15/- for 24 man days in a month) from the employer. The workers are also getting overtime for the additional work done by them. But the agents do not get any share from the amount of over time.

This problem of sharing the percentage is usually for the first time only. Because the employers are neither in touch with the villagers nor the villagers have any approach till the employers. Once there establishes a good rapport in between the employer and the workers then they do not have to pay the agent and they go for the work directly, because it is not due to his efforts they are getting job. But if the worker does not wish to work with the same employer then again the workers need to pay to the agent in the above mentioned rates.

Supply Side Conditions

Availability of Human Resources

In general, the un-educated and less educated youth prefer the masonry trade because; this trade doesn't require much education. If the educated build this skill, they may get better opportunity in the construction industry itself in larger projects. Understanding the poor and limited literacy level in the state as well as in the district, Masonry can be seriously considered for skill building among the youth to enhance the employability.

Further, the current construction industry in the district has engaged good number of youth as unskilled wage labour, and they can be seen as a potential group for enhancing their skill.

Existing Skills/ Education

Motivating Factors and Education

Few villages were reviewed in terms of their employment opportunities. Each had infrastructure till high and higher secondary school. Most get educated till 10^{th} / 12^{th}. Those who fail, dropout. Girls study till 8^{th}-10^{th} class while boys' 10^{th}-12^{th} class. Very few get into college which is much meager for girls. In Bade Dharau village of block Lohandiguda about 250 – 300 students pass out from the schools. But out of this only few students go for college studies and there the per centage of girls is very less. These villages have ITI and Polytechnic College with streams dealing with construction (civil engineering). But these are not accessible by the youth.

Even where there has been skill training facilities offered by institutes, the students have not been placed in employment. This in turn is resulting in negative messages passing around on skills training. E.g., in Pakhnar panchayat 200 boys underwent training but remained jobless as they were not placed. This situation needs to be addressed. Similarly in Lohandiuda block Tata Group has imparted Skill Training to 400 youth at Jamshedpur. But they too are unemployed. Girls were also imparted one year nursing training and stitching.

Cultural factors:

Offering services in construction work is a major part of tribal livelihoods. This can be deciphered from the fact that a large number from tribal households from different parts of the district found move towards Jagadalpur from a surrounding area of 5-35 kilometer radius for offering labor services especially masonry work. This shows a strong cultural acceptance towards the masonry activity. Similarly, people from many conflict villages also moved away from their villages to the other nearest towns in the district also to the towns in other states like Andhra Pradesh, Karnataka, Madhya Pradesh and Maharastra

Youth reaching Jagdalpur for wage employment

Support Services

There are different players involved in imparting masonry skill training to youth in the district without charging any free. The vocational training institutions include.

L&T's Community Skill Training Centers (CSTC)

These training centers offer vocational skill trainings on Bar Bending & Steel Fixing, Formwork & Shuttering Carpentry along with Masonry. The objective of the is to train unskilled BPL candidates and also upgrade the skill level of existing construction workers engaged in the Industry. They also further provide opportunities of employment and raising the economic level of the workers and to develop a pool of professionally qualified / proficient micro entrepreneurs for overall economic growth & development of the state.

This vocational training center has adopted the following strategy to select, train and providing placement to the youth.

- Five state governments including Chhattisgarh to select academically challenged youth (10^{th} -12^{th} failed and in 18-30 age group.
- Selected out to be trained at L&T's Construction Skills Training Institute / Construction Skills Training Centers across the country
- L&T pays a stipend of Rs.1500/- per month for three months for meeting food / logistical expenses apart from testing fees totaling Rs. 6,000 per trainee.
- After three months of training at CSTI / CSTC and one month on the-job training, these trainees to be referred for engagement with the sub-contractors working at L&T Project sites.

Strategy for taking up the Initiatives on a Larger Scale

By all standards and means the per centage calculation of skilled, semi-skilled and unskilled work force is not possible though it is necessary one. For this it would require an exhaustive

and in-depth study. However the trend reveals that in last one decade the need of construction industry has increased manifolds'. This is a very positive element of growth and simultaneously the demand of the skilled masons too has increased. Surprisingly the growing states are unable to cater the demand of the industry due to which the backward states with lesser opportunity suffice the need. But here also the skilled masons with high susceptibility are in the smaller proportions. The current scenario reveals that the future would be brighter if the unskilled mass can be transformed into the skilled resource. Finally few submission are made here for long term feasibility-

- Strategic skill development policy required for masonry and other trades.
- Strategy for imparting training at village level by mobile training teams.
- Awareness generation among the work force for their masonry skill up gradation.
- Controlling the outflow or migration of the worker is impossible therefore proper orientation must be imparted by the social organizations and the organization need to be based in the village at grass root level. Such organizations are very much required.
- Govt. needs a paradigm shift from a quantitative focus on education to qualitative focus also.
- If govt. feels disarmed to carry on such roles then govt. shall call the Corporate/ Private/ NGO sector to impart trade based capacity development trainings and courses.
- Coordination Committees can be formed at Dist. and state level, if not by the Govt. then by the Pvt. Organizations for facilitation at various levels.

Recommendations

Undergoing the Masonry training can create two types of employment opportunity for the youth. Youth can continue to work in his village and surroundings and by finding self-employment, on the other hand the youth will also have an opportunity to join with some contractors or construction companies like L&T and get wage employment. While there is employment is assured in the second option, youth must be ready to move out of their village.

The following are the recommendations made to create employment to the rural youth especially the illiterates and semi literates through the masonry.

- It is most important to effectively utilize the existing vocational training courses rather than launching new training centers in regard to Masonry. The National Academy of Construction, L&T vocational training centers have been offering this course.
- Youth need to be identified and motivated to join the existing vocational training centers to equip / upgrade masonry skills. NGOs who are working at the grass roots, the staff of NRLM, SHGs and village organisations can take lead in this regard.
- Placement offer need to be linked with the course of training, the organisations which are offering the course and the same need to take lead in linking the students with the employers to ensure better, long term employment to the youth.
- Draughtsman Civil courses can be launched in the existing ITI colleges in the District to create access to the long term course for the students. Students which are interested to grow in this sector may undergo this course.

- Trained masons can be formed in to small groups to access small contracts from both public and private players through the contractors. The local NGOs, field staff of NRLM, partner NGOs of NABARD can take lead in this process.
- Apprenticeship opportunities can be created in the ongoing government construction activities by the PWD, R&B departments etc.
- The trained masons must be registered at gram panchayat level for taking up their services in the relation to work of MNREGA, PWD, PHE, Forest Department, etc.
- Financial support services need to be provided to the trained masons to have required tool kit
- Short term skill up gradation or refresher course opportunities can be made available for the trained masons.

Financial product for promotion of self-employment through Masonry skill training

S.No	Particulars	Rate	Quantity	Amount in Rs.
A	**Fixed cost**			
a.	Masonry tool kit	6,000	1	6,000
b.	Bicycle	3,000	1	3,000
	Sub total			**9,000**
B	**Variable cost**			
a.	Unit maintenance (Rs. 300*12=3,600)	Lump sum	1	3,600
	Sub total			
	Grand total (A+B)			**12,600**
C	**Income**			
a.	Wage earning (220 per day x 25 days = 5500/- per month)	5,500	12	66,000
b.	**Total Income**			66,000
c.	**Net income per month = (Total income-Variable Cost)**			4,450
d.	**Net income per annum after deduction of fixed costs**			53,400

Conclusions

Among various emerging vocational requirements like hospitality, retailing, plumbing, rod bending, Masonry, Desktop publishing, house wiring, electrician, disease mechanism, two wheeler mechanism, etc, with potential in Bastar district, the Masonry as a trade has good potential to employ large number of youth especially un educated and less educated. The Masonry skill can provide a chance either to get employment in a construction project or to start up as a self-employment. Since involvement in construction work has become a part and parcel of tribal livelihood and has cultural acceptance, an orientation motivation to take up masonry activity can go a long way in converting a pool of unskilled workforce into skilled workforce and

improving their livelihood status.

Consolidation of recommendations for subsectors and service sectors

Subsector	Category of recommendations				
	Institution and enterprise building	Financial services	Skill building	Technical support	Infrastructure development
Cashew cultivation	▪ Promotion of community nursery through SHGs to reduce dependency on outside states for the plant material ▪ Training farmer's institutions and SHGs on financial literacy and business skills. ▪ Establishing proper market linkages with the farmer's institutions and SHGs to market the procured produces. ▪ Promote a three tier institutional model to engage the local communities especially the women SHGs from production to processing and marketing to enhance household income.	▪ Providing financial support to the farmers for plant care and prevent distress sale of raw cashew ▪ Financial assistance to SHGs to take up procurement and marketing interventions in small scale.	▪ Motivating farmers and SHGs to understand the losses due to premature harvesting and enhance their skill to practice proper harvesting measures. ▪ Training SHG women on cashew processing. ▪ Training Vana Samrakshana Samitis to establish proper internal systems to effectively manage the production, marketing and processing of the cashew.	▪ Training farmers on the best practices include watering, pest management, and supply of organic manures for better production. ▪ Converge with various technical support service providers include Horticulture, forest departments and agriculture colleges to access various government schemes.	▪ Promotion of community storage facility/ units and the SHGs involved in procurement and marketing will hold responsibility of managing these units. ▪ Establishment of processing units.
Backyard poultry	▪ Educating the community to observe backyard poultry as a potential enterprise ▪ Promoting individual level back yard poultry units and expansion of the existing units in regard to desi birds ▪ Promoting commercial (broiler) poultry units by using three tier structure i.e	▪ Financial services to launch more number of poultry units. ▪ Financial assistance to the PFAs to promote commercial poultry activity.	▪ Skill building for the backyard poultry rearer on effective management of the small scale poultry units. ▪ Promotion of social capital and enhance their skills in the effective management (Procurement, marketing, book keeping and	▪ Door step health care services for chicks by promoting a Para veterinarians. ▪ Training the SHGs on the veterinary care.	▪ Ensure erecting of quality night shelters for the chicks to protect from extreme climatic variation. ▪ Ensuring necessary infrastructure for the commercial poultry activity include sheds,

	individual units – village cooperative – producer company		accounting) of the three tier institutional arrangement made for commercial poultry.		
Tamarind collection and marketing	▪ Promotion small scale tamarind enterprises through SHGs. ▪ Institutional arrangements to be made to ensure minimum support price to the tamarind. ▪ Three tier institutional arrangements to be made to manage the large amounts tamarind produce ultimately to create more number of employment days and also to enhance household income. ▪ The three tier structure will have SHGs – Cluster level organisation – Block level federation.	▪ Credit support services to the tamarind farmers to prevent distress sale. ▪ Financial assistance to SHGs to set up small scale procurement and marketing centers. ▪ Launch a special project to promote three tier institutional model to work on the large scale tamarind procurement and marketing to benefit large number of families in the district.	▪ The skills of the tamarind farmers including men and women on the scientificharvesting methods to ensure quality of the produce and also to protect the source. ▪ Training the women on packaging and to take up the small	▪ Standardization of quality gradation system: Under this the community needs to be trained on the grading, cleaning, storage methods.	▪ Establishment of community weighing machines in the villages ▪ Establishment of proper transport services to move the produce from remote locations to the market. ▪ Setting up of small scale processing units and they will be managed by the local SHGs. ▪ Establishment of small
Electrician	▪ Launch a four month short duration “Electrician Course”. This course can be offered by any authorised non-government government vocational training institute including Chhattisgarh Skill Development Mission. ▪ The short term course can be designed in a way placement assured course. ▪ Promotion of electrician clubs	▪ Extend financial support to the trained electricians to set up self-enterprise units. ▪ Stipend based placement opportunities can be assured to the trained electricians.	▪ Apprenticeship opportunities can be provided to the all trained electricians.	▪ Promote electrician clubs to assist the electricians to have an avenue to clarify their doubts and to upgrade their abilities. ▪ In the case of placement created electricians pre and post placement support services include	▪ Establish proper and full pledged infrastructure in the vocational training centers to enhance the quality of the short term training.

	to ensure better employment opportunities for the trained electricians.			counseling, better working environment need to be assured.	
Masonry	▪ It is most important to effectively utilize the existing vocational trainings rather than launching new training centers in regard to Masonry. ▪ Youth need to be identified and motivated to join the existing vocational training centers to equip / upgrade masonry skills ▪ Placement offer need to be linked with the course of training. ▪ Draughtsman Civil courses can be launched in the existing ITI colleges in the District to create access to the long term course for the students. ▪ Trained masons can be formed in to small groups to access small contracts from both public and private players through the contractors.	▪ Financial support services need to be provided to the trained masons to have required tool kit	▪ Apprenticeship opportunities can be created in the ongoing government construction activities by the PWD, R&B departments etc.	▪ Short term skill up gradation or refresher course opportunities can be made available for the trained masons.	▪

Special needs of the community

Special needs of the community

The ultimate aim of livelihood promotion is to enhance the household income and further to enhance the standard of living of the people. While livelihood promotion contributes for betterment of standard of living, the other way is that linking the community with the government welfare schemes and this is important strategy to work with the ultra-poor and marginalised sections. Having understanding on the special needs of the community is important because which effects the community participation in various livelihood projects that are proposed by any government and non-government agency.

The dominant tribal community of Bastar district is not market driven and also not aspiring to accumulate wealth through their livelihood activities and they just concern about basic needs. This might be because of the culture of contentedness and priority towards meaningful engagement rather than economic betterment. On the assumption of increment of income, the investment priorities are as follows

Health:

Improving health condition and access to better health care is the most expressed need among the tribal communities. Poor or lack of protected drinking water facility cause for water borne diseases like diarrhoea and disease outbreak include malaria, viral fevers deteriorate the health condition of the tribal communities. As the tribal communities live in remote locations reaching government health centres also became expensive.

Along with the tribal communities non-tribal communities also highlighted the need for investment on the health related aspects. Lack of awareness on the sanitation and hygiene among the communities aggravate the health vulnerability.

Food

Food stand second in the list of priority and the tribes would like to invest on food especially to cope up with the lean seasons. The two important livelihoods agriculture and wage employment yield income to meet the food needs of the family for 8 to 9 months in a year and for the rest of the period the food security is a question. Though the Public Distribution System (PDS) make sure of rice at Rs.1 per Kg, the grocery, vegetables remain costly. Thus, the community understood that their current level of income is not sufficient to cope up with lean seasons and to arrange a normal nutritious food for the family. Hence they would like to invest more on food items, in the case of income enhancement.

Creating livelihood assets

Livelihood cannot be continued in isolation, once endowments like human and material is essential to take up any livelihood. The tribal communities they need money and they would like to invest on “re-arranging” their livelihood assets. There is specific reason for mentioning the word “re-arranging”. Most of the households used have bullocks and ploughing tools to cultivate their lands. But the disease outbreak among the animals caused loss of bullocks, which caused many tribal communities to leave their land barren. Thus the community would like to buy

bullocks to plough their land.
The disease outbreak, in access of veterinary services not just limited to bullocks also there for goats and chicken. Communities also expressed that they need tools like sprayers, ploughs, harvesting tools. As a whole creating livelihood assets is one of their priorities.

Housing:
Rural communities found housing is one of their priorities especially the non-tribal communities, the non-tribal communities would like to repair their houses and to arrange better roof, flooring, and cementing, creating additional rooms, converting thatched roof to cement roof, arranging basic sanitation at household level.

The tribal communities mentioned housing as their priority in only few cases. The tribal communities wanted to improve the roof condition of their houses.

Annexures

Annexure – 1

Rainfall patterns in Bastar District

Year	2006-07	2007-08	2009-10	2010-11
Rainfall in mm	1346.50	1318.92	1418.6	962.4

(Source: District Statistical Handbook – Bastar, 2010-11)

Annexure -2

Sex Ration in Bastar District

2011 Census category	Bastar	Chhattisgarh	India
Sex Ratio – Total	1024	991	940
Sex Ratio – Rural	1032	1002	947
Sex Ratio – Urban	979	956	926

(Source: Census 2011, Chattisgarh)

Annexure – 3

Religion wise population in Bastar District

2001 Census category	Bastar	Chhattisgarh	India
Hindu	96.87 per cent	94.7 per cent	80.5 per cent
Muslim	0.79 per cent	2.0 per cent	13.4 per cent
Christians	1.33 per cent	1.9 per cent	2.3 per cent
Others	1.01 per cent	1.4 per cent	3.9 per cent

(Source: Census 2001, Chhattisgarh)

Annexure – 4

Literacy in Bastar

2011 Census category	Bastar	Chhattisgarh	India
Literacy rate – Total	54.94 per cent	64.66 per cent	74 per cent
Literacy rate – Total – Male	65.70 per cent	77.38 per cent	82.1 per cent
Literacy rate – Total – Female	44.49 per cent	51.85 per cent	65.5 per cent

(Source: Census 2001, Chhattisgarh)

Annexure – 5

Land Utilization pattern in Bastar District

Total Area	403,003	
Forest Land	83,738	20.8 per cent
Area not available for cultivation	47,825	11.9 per cent
Cultivable wasteland	11,678	2.9 per cent
Current fallow	9,536	2.4 per cent
Total Gross cropped area	191,686	47.6 per cent
Net sown area	187,964	46.6 per cent
Area cultivated more than once	5,372	1.3 per cent
Area irrigated	5,028	2.7 per cent

. *(Source: District Statistical Handbook – 2010-11, Bastar)*

Annexure – 6

Road infrastructure in Bastar district

Pucca				Kutcha			
Public works department	Rural local	Others	Total	Public works department	Rural local	Others	Total
672.93	70.01	212.50	955.53	97.39	22.83		121.2

(Source: District Statistical Handbook – 2010-11, Bastar)

Annexure - 7

Work Participation in Bastar

	Main workers	Marginal workers	Total workers	Non-workers	Work participation rates
Male	167,546	34,689	202,235	345,239	57.5 per cent
Female	48,064	111,118	159,182	149,769	44.9 per cent
Total	215,610	145,807	361,417	195,470	51.1 per cent

(Source: Census 2001, Chhattisgarh)

Annexure – 8

Occupational distribution in Bastar District

Category	Main Workers Male	Marginal Worker Male	Total workers Female	Main Workers Female	Marginal workers Female	Total workers Female	Main Workers Total	Total workers
Cultivators	93,805	7,701	101,506 (50.2)	25,071	28,413	53,484 (33.6)	118,876	154,990 (42.9)
Agriculture	24,237	23,050	47,287	11,487	79,221	90,708	35,724	137,995

labourers			(23.4)			(57.0)		(38.2)
Household Industry	2,906	412	3,318 (1.6)	950	938	1,888 (1.2)	3,856	5,206 (1.4)
Others	46,598	3,526	50,124 (24.8)	10,556	2,546	13,102 (8.2)	57,154	63,226 (17.5)
Total	1,67,546	34,689	202,235	48,064	1,11,118	159,182	2,15,610	361,417 (100)

(Source: Census 2001, Chhattisgarh)

Annexure – 9

Cropping pattern in Bastar

Crops	Total
Cereals	162,557 (85.8 per cent)
Pulses	6,470 (3.4 per cent)
Others	6,565 (3.5 per cent)
Food crops	175,592 (92.7 per cent)
Oilseeds	11,598 (6.1 per cent)
Sericulture	129 (0.1 per cent)
Medicinal Plants	37 (0.0 per cent)
Total Non-food crops	10,668 (5.6 per cent)
Total	189,446 (100 per cent)

(Source: Statistical Hand Book – Bastar 2010 - 11)

Annexure - 10

Animal Population in Bastar District

Cattle	312,018
Buffalos	74,765
Sheep	19,618
Goat	95,595
Pig	43,600
Poultry	414,643

(Source: District Statistical Handbook – 2010-11, Bastar)

Annexure - 11

Subsector wise study villages

S. No	Cashew		Tamarind		Backyard poultry	
	Village	Block	Village	Block	Village	Block
1	Bandapara	Thokapal	Bade Dharau	Lohandiguda	Bandapara	Thokapal

2	Kachnar	Bakawand	Dhilmili	Darba	Kotpad (haat)	Kotpad (Orissa)
3	Simnaguda	Bakawand	Pakhnar	Darba	Dasapal	Bakawand
4	Chironji	Bakawand	Karpawand	Bakawand	Daudakot	Bakawand
5	Bejri Padr	Bakawand	Kurandi	Jagdalpur	Temrubata	Dharba
6	Rajanagar	Bakawand			Jagdalpur	Jagdalpur
7	Badewada	Bakawand			Semra	Jagdalpur
8	Jagdalpur	Jagdalpur				

Annexure – 12

Table: Export of Cashew Kernels from India during 2010-11 to 2011-12

Countries	2010-11		2011-12	
	Quantity (M.T)	Value (Rs. Crs)	Quantity (M.T)	Value (Rs. Crs)
U.S.A	35,236	911.31	47,611	1470.47
U.A.E	12,295	393.31	14,173	606.11
Netherlands	11,178	289.02	11,517	365.57
Japan	5,944	159.16	7,054	237.45
Saudi Arabia	3,386	107.53	5,136	207.01
U.K.	2,798	71.76	3,717	109.45
France	3,623	90.12	3,461	109.10
Spain	2,634	69.14	3,397	111.45
Germany	1,739	41.54	2,813	90.39
Belgium	2,986	72.47	2,463	85.25
Singapore	1,692	41.31	1,892	57.51
Italy	1,194	29.11	1,771	55.76
Greece	1,311	35.36	1,496	50.91
Thailand	733	21.57	1,477	46.93
Australia	1,356	32.70	1,408	44.98
Russia	484	13.53	1,378	40.88
Canada	678	16.53	1,226	35.88
Kuwait	1,001	31.19	1,147	50.26
Egypt	1,184	37.72	1,137	50.60
Algeria	221	6.33	1,055	42.15
Turkey	1,346	36.56	1,051	28.84
Korea Rep.	717	20.25	992	34.92
Jordan	1,093	31.07	867	36.71
Norway	727	19.09	844	26.04
Syrian Arab Rep	850	25.87	822	33.84
Hong kong	530	15.14	823	26.07
Others	8,819	220.71	11,032	336.16
Total	105,755	2,819.39	131,760	4,390.68

(Source: DGCI&S, Kolkata)

Annexure – 13

Chicken population in Private Poultry Farms in Basar District
(Livestock census 2007)

S.No	Name of Boiler Polutry Farm	Population
1	Datta Poultry Farm, Dharampur, Jagdalpur	1,500
2	Afzal Poultry Farm, Nakti Semra, Jagdalpur	20,000
3	Reddy Poultry Farm, Matiguda, Jagdalpur	5,000
4	Ramesh Poultry Farm, Karkapal, Jagdalpur	1,000
5	Premium Poultry Farm, Deuargaon- Tokapal, Jagdalpur	1,800
6	Shah Poultry Farm, Kumharpura, Jagdalpur	20,000
7	Verma Poultry Farm, Lamani, Jagdalpur	1,000
S.No	**Name of Layer Polutry Farm**	**Population**
1	Reddy Poultry Farm, Dharampura, Jagdalpur	8,000
2	Ganesh Poultry Farm, Sargipal, Jagdalpur	5,000
3	Mura Poultry Farm, Sadguda, Jagdalpur	50,000
4	Joshi Poultry Farm, Kalipura, Jagdalpur	2,000
5	Krishna Devi Poultry Farm, Dodarepal, Bakavand, Jagdalpur	8,000
6	Reddy Poultry Farm, Bashsemra, Jagdalpur	15,000
7	Afzal Poultry Farm, Nakti Semra, Jagdalpur	10,000
8	Afzal Poultry Farm, Kulgaon, Jagdalpur	6,000
9	Reddy Poultry Farm, Matiguda, Jagdalpur	60,000

(Source: Department of Animal Husbandry, Jagdalpur)