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## **Afforestation Scheme: Has it improved Rural Livelihood & Forest Cover?**

**Amar K.J.R Nayak** ©

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## **Afforestation Scheme: Has it improved Rural Livelihood & Forest Cover?**

*“The station bell rang and the sound of train was heard from a distance. Buchi got up and gently woke up Gopi, her husband. Buchi a young tribal lady of village Tithipalli of Tarava Block in the district of Sonepur was married to Gopi since the last 2 months. Today she has come to the Titilagarh railway station to leave her husband who is to go to Bombay in search of work. In a few minutes, the train reached the station. With fear and pain clutching her heart, Buchi helped her husband to get on to the train as tears filled her eyes and deep sadness covering Gopi’s face. While Buchi and Gopi had been optimistic that one day as Gopi finds a job in Mumbai, the dark cloud of poverty would pass away from their lives; both their hearts were heavy at this point of time. Whether her husband will come back or not remained a big question in her heart, Buchi stood in the platform waving her hand to Gopi as the train slowly passed away.”*

This is not the only case of Buchi but this type of situation prevailed in most of the tribals’ communities in the KBK districts of Orissa, India. The KBK districts have been afflicted with the problems of increasing migration during lean season due to their poor economic conditions. Every year, migration starts from October and continues till June to the places like Visakhapatnam, Secunderabad & Hyderabad of Andhra Pradesh, Raipur of Chattisgarh, Bombay of Maharashtra, Madras of Tamilnadu, and Ahmedabad of Gujarat state of India.

Tribals and forests have a symbiotic relationship and they live in harmony with each other. Forest plays a significant role in the development and sustenance of the rural poor; whose existence depends on a close and ecologically sustainable relationship with the forests they inhabit. Tribals have always inhabited forests and maintained the balance of nature. Forest has been an inseparable part of their lives and their major source of livelihood.

It has been argued that the prevalence of poverty in tribal areas, has been exacerbated by three factors: (a) the degradation of forests, (b) the un-favourable state policies for both non timber forest products (NTFPs) and the forestry sector in general and (c) the

conduct of many secondary stakeholders such as industrialists for mining, traders and forest mafias. Other factors include the practice of shifting cultivation by different groups in tribal regions and also destruction due to fire. In the light of these factors how do we look at the stories of Buchi and Gopi's family?

### **Socio-Economics of KBK Region & Sonepur district:**

Despite continued efforts to develop all parts of the state, the regional disparities within the state of Orissa exist. The region comprises of the old Kalahandi, Bolangir and Koraput districts popularly known as "KBK districts" and since 1992-93 these three districts have been re-organized into 8 districts, i.e. Kalahandi, Nuapada, Bolangir, Sonepur, Koraput, Malkanagiri, Rayagada and Nawrangpur. These KBK districts form one of the poorest regions in the country with about 71.97% families living below the poverty line (BPL) and the socio-economic deprivation of these districts in terms of development indices is quite appalling. Refer **Exhibit 1** for the geographic map of the region and refer **Exhibit 2** and **Exhibit 3** for the census on poverty and demographic indicators

As per the 1997 Census conducted by the state Panchayati Raj Department, about 72% households; families are below poverty line (BPL) and do not get adequate food for their sustenance. In Sonepur district, the district of our focus for the analysis on Afforestation, the percentage of population below the poverty line increased from 62% in 1992 to 73% in 1997 (see Exhibit 2). When we find an overall increase in the GDP of the country during the last about two decades, how do we explain the increase in the percentage of household / families below the poverty line?

### **Objectives of Afforestation Scheme**

The state government and the central government have been attempting to remove regional imbalances and inequities. In order to achieve this objective, the state government formulated, in consultation with government of India, the Revised Long Term Action Plan (RLTAP) for the KBK districts then submitted to government of India for approval in 1998.

Afforestation scheme under RLTA P aim at reforesting the degraded forests with a view to improving availability of forests produce to support forest based livelihood. Improved forest cover will also result in improvement in soil moisture regime leading to improved farm productivity. Additionally, implementation of the scheme will provide enhanced employment opportunities to the rural / tribal people. The main objectives of RLTA P in respect of forest activities are:

- i) Generating employment opportunities for local poor people, particularly the tribals, to ensure food security and to extend livelihoods support.
- ii) Increasing forest cover in order to improve the climatic conditions of the region.
- iii) Improving hygienic conditions of forests for increased productivity.

The KBK region still has some of the wonderful natural forests. The old Koraput district is covered by Eastern ghat while the Bolangir and Kalahandi are part of the Chhatisgarh plateau. The forests are dry deciduous type comprising of natural sal forests, mixed forests and small area growing natural teak. Bamboo species (*Dendrocalamous strictus* and *Bambosa Arundinacea*) are prevalent in great density over large areas. The total forest cover in the state of Orissa is just about 31% and the forest cover in Sonepur district is only about 13%. Refer **Exhibit- 4**.

The eight re-organized districts comprising the KBK region have a total geographical area of 47,646 sq. kms. About 16,857.8 sq. kms out of the total area has been recorded as different types of forestland. However due to various reasons, these forests have degraded both in quality and quantity over the years. Some forestlands are now devoid of forest cover. Many other forests have become very thin. Proportion of dense forests is considerably reduced. The forest survey of India has tracked these changes in forest cover from time to time. An analysis of satellite imagery data (1997) suggested that only one-third (5,473 sq. km or about 11%) of these forest was dense forest; 4,332 sq. km of forest land was found to be barren and another 6,327 sq. km. was observed to be open forests. Refer **Exhibit- 5**

Afforestation and regeneration of degraded forests has formed a core component of RLTA P in the KBK region since 1998-99. Forestry Development Component in the

RLTAP was a logical necessity. Traditionally large sections of the poor people inhabiting the KBK region depend on forests and forest produce for their livelihoods. Degradation of forests in the KBK area over the last few decades has resulted in a substantial decline in the availability of various forest produce which contributed substantially to the income of the poor households. This has also led to a decline in the productivity of agriculture in the region due to deterioration in soil moisture and degradation of the soil through erosion.

The following afforestation schemes are undertaken in the RLTAP in a Project mode: (i) Economic plantation project (ii) Non-timber forest produce (iii) Bamboo plantation project (iv) Indigenous and mixed fuel wood project (v) Rehabilitation of degraded forests (RDF) Projects. (vi) Aromatic and medicinal plantation Project (vii) Joint forest management project (viii) construction of storage space (ix) Research and Development (x) Development of protected area and promotion of Eco-tourism (xi) Human resource Development etc. (xii) Employment Generation through medicinal Plants (xiii) Monitoring and Evaluation and (xiv) special project on combating Heat wave in Titilagarh town. Refer **Exhibit-6-9**.

It is however observed that only teak plantation dominated in the sites visited. The official argument is that teak being non-browsable, protection risk is low. Moreover, return from the teak is quite high. The VSS members also expressed the same view and they are told by local forest officials. Juxtaposed in this, situation, NTFP and fuel wood plantation which have potential for meeting the short term requirements of the poor did not seem to have got much favour. How would planting of commercial trees that are likely to be cut off when mature ensure the increase in the forest cover of the region?

### **History of Forest Policy and Community Forest Management in Orissa:**

The beginning of a forest policy in pre-independence India started in 1855 when the then Governor General, Lord Dalhousie, issued a memorandum on forest conservation. It was the first attempt towards a systematic forest policy. Dietrich Brandis, a German Botanist was appointed as the Inspector General of Forests in

India, with the responsibility of organizing a forest department for scientific exploitation of forest resources. Rules and regulations were framed to manage the forest resources. The main purpose of the forest acts under the British government was to have state control over the forest with a view to increase its revenue over the forest with a view to increase its revenue over the forest by using forest commercially and therefore reducing the rights of the forest dwelling and using communities. The first act came into existence in 1865. Gradually the state exerted more control over the forest resources in order to earn. Subsequent forest laws were modified in order to increase revenue.

There has been gradual change of attitude of the government with regard to forest policies and forest dependent people. They have gradually started shifting from policies oriented from state revenue earning and conservation to policies considering the livelihood issues of forest dwellers. The experience of self-initiated community forest management practices partly contributed to the change of attitude of forest policy planners. Central and state governments recognized the positive role of local people in protection, management and development of forests and realized the need for incentives for the forest dwellers to further encourage their efforts.

As a result; the 1988 National forest Policy emphasized fulfillment of local needs and environmental services. It also emphasized the need for involvement of local people in protection and management of forest. Soon after several provision of the 1988 forest policy resolution were amended by the state government in order to encourage participatory management in the forest sector through joint forest management by facilitating the creation of formal local forest protection groups, Vana Smarakshyan Samities (VSS). JFM however, has been operational only through administrative orders of the state and has no legal status even today. The forest Department took initiative in the formation of V.S.S in Orissa and after 1993; VSS were formed in different forest divisions of the state. The formation of VSS was slow up until 1997-98, but there after numbers increased rapidly.

## **Structure of Implementing Department**

### **In VSS, the theoretical guidelines are as follows:**

1. The forester makes an introductory interaction with the villagers.
2. The Ranger/DFO organizes a village level meeting and “persuades” the people for forest protection.
3. The villages have discussion at hamlet and village level.
4. The people organize a meeting in the presence of forest official, select EC members, and prepare their memorandum of understanding (MoU); which later on is submitted to DFO through Ranger Office.

VSS Executive Committees are supposed to be selected jointly by the people and forest department. The following are the formal rules for selecting EC members in VSS.

- The number of EC members is to be 10-15 with at least 3 women representatives.
- There must be representatives from local political institution i.e., Naib Sarapanch as Ex-officio member as well as president of Executive Committee. The village ward members will be member of E.C.
- The concerned forester and forest guard is the Ex-officio members of the VSSs and forester will act as the secretary of VSS.
- The nominees of the local NGO/Voluntary organization who is appointed by DFO is the members of EC.
- The concerned Ranger is the returning officer and in-charge of selection / election of EC members.
- Different caste representations have been found in VSS and EC members.

According to the VSS rules the EC can hold the post for a period of 2 years. In every 2 years the new EC will be elected / selected. The concerned Ranger is in charge of selecting new committee(s). It has been found that EC members have continued in their post for more than 2 years; even though the tenure is only for two years. Even if election of EC members has taken place in certain VSS villages, same members have

been reported to have been elected again. There is a steering committee at forest division level and another at state level. A strong hierarchical system for monitoring of VSS exists. Refer **Exhibit 10**.

The implementation of the Afforestation scheme is through several steps and stages. The question of co-ordination between the government bodies/ agencies at the State level to village poses a matter of concern. The time taken practically for a simple execution of a proposed plan is worth reviewing.

### **Process of Implementation**

According to the VSS rules; the EC should organize a meeting at least once in every month where as the General Body Meeting should be organized once in 3 months or so. During the field visit to Sonepur district, it has been observed that in Tithipalli village they organized the meeting regularly & although the E.C consists of different Socio-Economic groups of people, a few rich class representatives enjoy most of the powers. The management team met the villagers and asked about the decision making process.

Review Team	<i>Who takes the important decisions for the VSS?</i>
Mandar Jani (Villager)	<i>Sir, only the EC President, Treasurer &amp; one or two near &amp; dear ones take the major decisions.</i>
Review Team	<i>Are you aware about the meetings and proceedings?</i>
Sumati Jani (Women Villager)	<i>Sir, we are not aware about the meetings and proceedings. We hardly participate in any meeting.</i>
Review Team	<i>Who keep the VSS records?</i>
Kulamani Majhi (Villager)	<i>Sir, the forester Bibhupada Patra keep all the records. Sometimes the forester prepares the records in the absence of members and takes signature from few members.</i>

## **Planting Materials used and Community Participation:**

The Review Team from XIMB had observed that the allocation, both physical and financial (division wise) is done by the forests and Environment Department at State Level. Subsequently, depending on the suitability of sites, range wise distribution of area; financial estimates are made at division level. Micro plans are prepared by the VSS with the help of concerned forest officials. The Review Team pondered if the micro plans were developed after discussion with the VSS members and it inquired with the villagers.

Review Team	<i>How were the micro plans for Afforestation developed?</i>
Kamalu Jani (Villager)	<i>Sir, the forest officials tell us what to do and we do according to what they tell us.</i>
Review Team	<i>Are you aware about the micro plan?</i>
Ramu Jani (Villager)	<i>Sir, we are not aware of any such plans, we only work to earn daily wages.</i>
Review Team	<i>How much do you get per day?</i>
Samaru Majhi (Villager)	<i>Sir, Men get Rs.45/- per day and the Women get Rs.35/- per day.</i>

There are 3 types of watching process prevailing in the protecting villages i.e. (i) Patrolling by Thengapali system, (ii) Patrolling by paid watchers and (iii) Protecting through social fencing system. In **Thengapali system** each household contributes its labour on rotation basis for patrolling the forest and protect the forest from outside interference. In **paid watcher system**; the villagers appoint a person to patrol the forest and is return the committee in cash on kind pays him. In **social fencing system**, although the people do not go to the forest for watching; they create awareness among the people about their initiatives of protection. As per the discussion with the villagers; every member of the community has a watchful eye on the forest and would report back to the group if he or she finds any violation of the agreed upon forest rules.

As per the guidelines of VSS “the forester and forest guards identify the degraded forest block sites for afforestation and allot them to the VSS. The apportioned block

patches are surveyed, demarked and a stock mapping is done to assess the status of the growing stocks with the help of villagers. PRA exercise is conducted to prepare a micro plan for each forest block. Additionally, a variety of immovable assets such as community center, community mandap, repairing of village road and movable assets like solar light, carpet & generator etc. have been created in the village and they are all under the care of the local people. The members and other villagers are encouraged to nurture and protect the promising forest at any risk till they are fully mature. Refer **Exhibit 11** for the number of VSS in the three undivided KBK districts.

The Review Team from XIMB asked a few questions to the people about the safety of the forest.

- |                            |   |
|----------------------------|---|
| Review Team                | <i>How do you safeguard the forests?</i>  |
| Buduka Jani (Villager)     | <i>Sir, we are adopting the social fencing system.</i>  |
| Review Team                | <i>Are you involved in any other planting material programme?</i>   |
| Giridhar Jani (Villager)   | <i>Sir, we are only maintaining the nurseries, taking care of soil conservation and plantation sites. We are getting wages for this work.</i> |
| Review Team                | <i>Do you decide when &amp; where to plant the trees?</i>   |
| Gandharba Majhi (Villager) | <i>No Sir, the forester and guard identified to work in different sites for afforestation.</i>  |

### **Supervision and Maintenance:**

From the grass-root level the EC of VSS organize meeting at least once every month to review and discuss all matters related to afforestation. The month-wise schedule for execution of works is usually done by the Foresters, Ranger & DFO from April to March based on some meeting with villagers during formation of VSS. Special monitoring of the scheme in the field level is carried out by the conservator of forests of Bolangir Circle, who is the nodal officer for the RLTA in KBK district. He is responsible to complete and submit the consolidated returns and reports to the Principal Chief Conservator of Forests (PCCF), Orissa.

At the State level, a three member monitoring committee comprising of PCCF, Orissa as Chairman & Secretary, Forest & Environment Secretary and Special Secretary to Government of Orissa undertake overall monitoring of the scheme. Forest and Environment Department also periodically review the implementation of the scheme. The Department appraises to the Planning & Co-ordination Department about the progress of implementation of the scheme from time to time. Refer **Exhibit 12** for the targets achieved in the afforestation programme and see **Exhibit 13** for district wise & year wise generation of man-days under RLTAAP involving in Afforestation programme..

The pattern of fund utilization as well as area expected to be covered has been quite satisfactory. The achievement based on physical and financial target by the department has been found to be in order. The villagers reported to have got about 45-75 days of work through the department. The afforestation project provides opportunities for employments especially in the initial period. The nature of work is digging holes, planting saplings, raising nurseries, watering, boundary making, trimming plants and trees, construction of forest roads and check dam for which a worker received Rs. 55/- as wage per day.

Fuel wood is the most important need of the rural people and it is widely used for selling and self-consuming for their livelihood. In all, VSS people are allowed to collect firewood freely. Firewood includes the dry wood, fallen wood, twigs or the waste woods coming out of cleaning and thinning. But in all the villages cutting of green trees are prohibited. The importance of timber is more in VSS compared to other forest products. Timber is not allowed to be cut as per the VSS rules, but considering the need of the people. Some VSS have distributed limited timber with institutional control and regulations. Different villages have different type of forest products according to the composition of forests. While interacting with the villagers, the Review Team inquired from a few about the collection of forest product.

Review Team

*What are you collecting from the forest?*

Binay Jani (Villager)

*Sir, we are collecting Mahua flower, Mahua fruit, Kendu, Char, Sal leaf, Sal seeds, Siali leaf, Harida, Bahada, Amla etc. for both household consumption and also for selling.*

- Review Team *What are the other forest products that you collect?*
- Sumati Jani (Women Villager) *Sir, we are obtaining a number of other forest products such as Mushrooms, Bamboo shoots, Tubers, Spinach and Fruits etc.*
- Review Team *Have you planted under this afforestation programme?*
- Biswo Majhi (Villager) *No Sir, we are collecting from the near by natural forest. .*

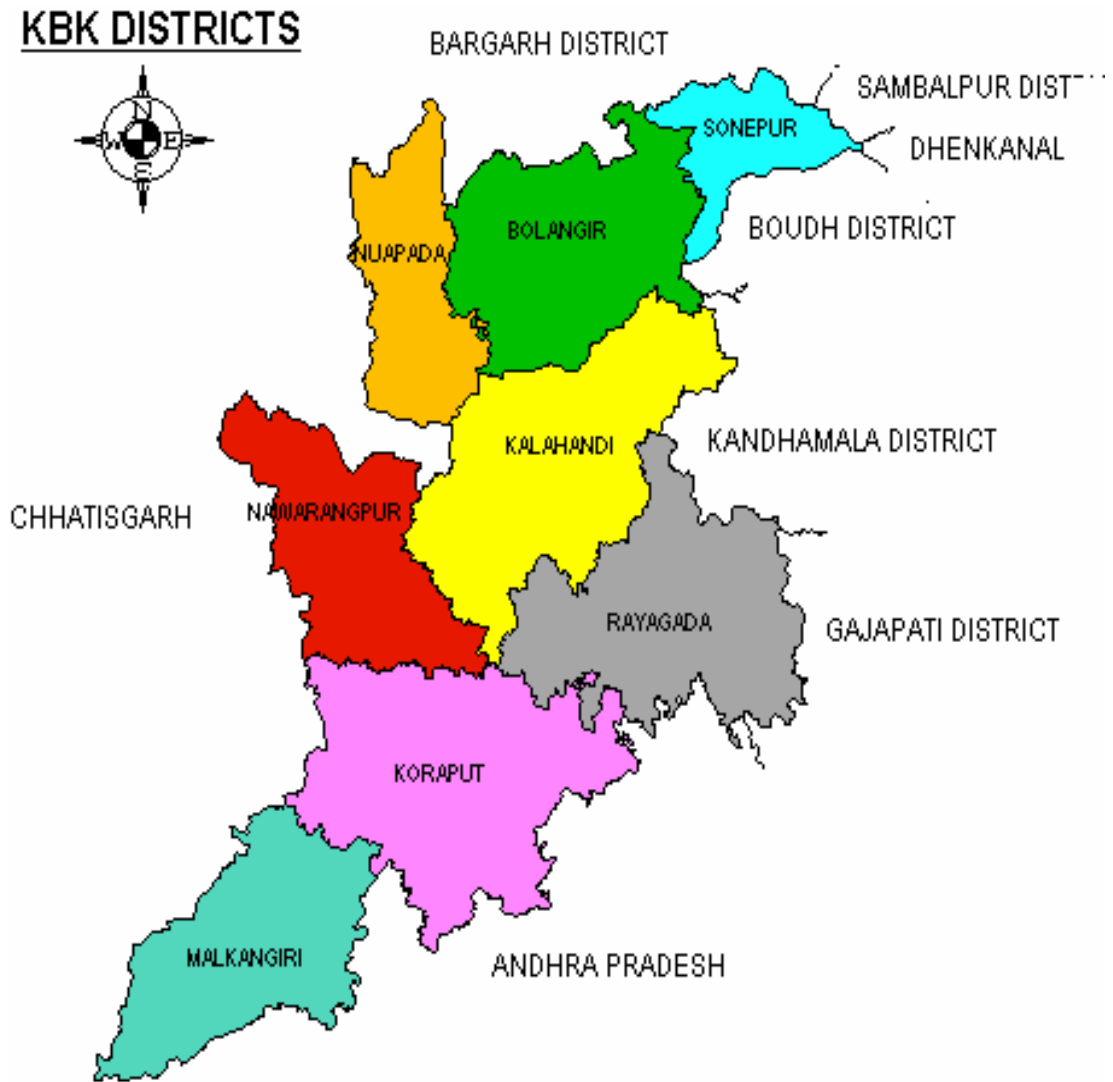
Forest has been the key resource base of the villagers. People usually collect bamboo, grasses or reeds that are converted into mats or brooms. They also get poles and wood needed in household construction and for fencing purposes. Forest has also served as a source of medicinal plants. With the government taking charge of the forest, the dependency of the rural population on the forest has been regulated. The Afforestation Scheme has been to improve the livelihood of people through the process of afforestation. The management team interacted with the different cross section of the people in the village, to find about the impact of the programme. A few excerpts of the interview discussion are provided below.

- Review Team *How much you do you earn per month?*
- Buduka Jani (Villager) *Sir, we are earning nearly Rs.350/- per month.*
- Review Team *Are you able to meet the needs of your health, education, and nutrition for your family?*
- Sujana Jani (Villager) *No Sir, sometimes we are going to distant health centre. We have no sufficient money to educate our children. Even we are not getting adequate food throughout the year.*
- Review Team *Do you think after RLTA there is some change?*
- Gandharba Majhi (Villager) *Sir, there is some change; but we need much more help.*

## QUESTIONS OF DISCUSSION

1. Why do people from the tribal dominated KBK districts of Orissa migrate to urban areas?
2. How much has the Afforestation Scheme helped the rural poor in improving their earning potential?
3. To what extent has the Afforestation Scheme been helpful towards increasing the forest cover in the area?
4. What are the major institutional problems in the implementation of Afforestation scheme and its objectives ?
5. How well do the local people participate in the Afforestation Scheme?
6. What are the levels of ownership of V.S.S in the Afforestation Scheme?

**Exhibit-1: Map of KBK Districts**



**Exhibit 2: Census of Families Below Poverty Line (BPL), 1992 & 1997\***

Sl. No.	District	HCR (%)	1992 Census			1997 Census		
			Total	BPL	Percent	Total	BPL	Percent
			(lakh families)		(%)	(lakh families)		(%)
1	Kalahandi	80.19	2.41	2.07	85.77	3.08	1.93	62.71
2	Nuapada		0.94	0.79	83.64	1.27	1.09	85.70
3	Bolangir	48.89	2.39	1.81	75.82	3.30	2.01	61.06
4	<b>Sonepur</b>		<b>0.92</b>	<b>0.57</b>	<b>62.29</b>	<b>1.10</b>	<b>0.80</b>	<b>73.02</b>
5	Koraput	92.24	1.88	1.63	86.59	2.65	2.22	83.81
6	Malkangiri		0.80	0.68	84.81	1.09	0.89	81.88
7	Nawrangpur		1.52	1.38	90.56	2.15	1.59	73.66
8	Ravagada		1.42	1.22	86.04	1.88	1.36	72.03
Total (Southern Orissa)			87.14	12.28	10.14	82.60	16.52	11.89

Source\*: Panchayati Raj Department, Government of Orissa.

Note: HCR – Headcount ratio as per 1999-00 NSS data (Manoj Panda: 2002)

**Exhibit 3: Demographic & Literacy Indicators in the KBK districts: 2001**

District	Popu-Density	Population Indicators					Literacy Rate	
		Total (000)	Female (%)	Rural (%)	ST* (%)	SC* (%)	Total (%)	Female (%)
1	2	3	4	5	6	7	8	9
1. Koraput	134	1,178	49.96	83.18	50.67	13.41	36.20	24.81
2. Malkangiri	83	480	49.91	92.79	58.36	19.96	31.26	21.28
3. Nawrangpur	192	1,018	49.81	94.18	55.27	15.09	34.26	21.02
4. Rayagada	116	823	50.71	85.98	56.04	14.28	35.61	24.31
5. Bolangir	203	1,336	49.56	88.45	22.06	15.39	54.91	39.27
<b>6. Sonepur</b>	<b>231</b>	<b>541</b>	<b>49.13</b>	<b>92.59</b>	<b>22.11</b>	<b>9.50</b>	<b>64.07</b>	<b>47.28</b>
7. Kalahandi	168	1,334	50.00	92.49	28.88	17.01	46.20	29.56
8. Nuapada	138	531	50.15	94.34	35.59	13.09	42.29	26.01
KBK Districts	152	7,241	49.91	89.89	38.72	16.63	36.58	24.72
Orissa	236	36,707	49.29	85.03	22.21	16.20	63.61	50.97

Source\*: 1991 Census

Note: Popu-density - population density (persons / sq.km).

**Exhibit 4: District wise Forest Cover (during 1999-2000 as per satellite report)**

District	Geographic area (km <sup>2</sup> )	Total area (km <sup>2</sup> )	Forest area as % of geographical area	Of the total % as		Scrub (Km <sup>2</sup> )
				Dense forest	Open forest	
Angul	6,375	2,650	41.6	62.6	37.4	156
Baleswar	3,806	306	8.0	48.0	52.0	51
Baragarh	5,837	904	15.5	46.8	53.2	112
Bhadrak	2,505	31	1.2	74.2	25.8	0
Balangir	6,575	992	15.1	50.8	49.2	310
Boudh	3,098	1,280	41.3	60.2	39.8	71
Cuttack	3,932	656	16.7	55.2	44.8	183
Deogarh	2,940	1,358	46.2	57.5	42.5	12
Dhenkanal	4,452	1,266	28.4	52.1	47.9	179
Gajapati	4,325	1,552	59.0	56.0	44.0	205
Ganjam	8,206	2,188	26.7	50.0	50.0	870
Jagatsinghpur	1,668	24	1.4	62.5	37.5	1
Jajpur	2,899	259	8.9	47.1	52.9	46
Jharsuguda	2,081	276	13.3	38.8	61.2	33
Kalahandi	7,920	2,139	27.0	54.3	45.7	569
Kendrapada	2,644	217	8.2	90.3	9.7	0
Keonjhar	8,303	3,378	40.7	49.4	50.6	45
Kandhamal	8,021	5,390	67.2	56.8	43.2	376
Khurda	2,813	434	15.4	63.8	36.2	209
Koraput	8,807	1,484	16.9	45.1	54.9	738
Malkangiri	5,791	2,188	37.8	49.2	50.8	11
Mayurbhanj	10,418	4,132	39.7	69.8	30.2	37
Nauapada	3,852	1,237	32.1	47.5	52.5	146
Nawarangpur	5,291	1,150	21.7	59.7	40.3	116
Nayagarh	3,890	1,705	43.8	60.5	39.5	262
Puri	3,479	211	6.1	84.8	15.2	51
Rayagada	7,073	2,733	38.6	47.9	52.1	601
Sambalpur	6,657	3289	49.4	69.7	30.3	64
<b>Sonepur</b>	<b>2,337</b>	<b>313</b>	<b>13.4</b>	<b>55.3</b>	<b>44.7</b>	<b>33</b>
Sundargarh	9,712	4,096	42.2	64.1	35.9	275
Total	155,707	48,838	31.4	57.3	42.7	5,782

Source: Ministry of Environment and Forest, Dehradun, State of forest Report 2001, Forest Survey of India.

### Exhibit 5: Forest Degradation in the Undivided KBK Districts, 1997

District	Total Area (Sq. Km.)	Recorded Forest (Sq. km.)	Dense Forest <sup>1</sup> (Sq.km.)	Open Forest <sup>2</sup> (Sq.km)	Barren Forest <sup>3</sup> (Sq.km.)	Dense Forest/T. Area (%)
Bolangir	8,913	1,611	573	612	426	6
Kalahandi	11,772	5,654	1,592	1,470	2,592	14
Koraput	26,961	8,867	3,308	4,245	1,314	12
Total	47,646	16,131	5,473	6,327	4,332	11

Source: The State of Forest Report: 1997, FST, Dehradun and OFD.

### Exhibit 6: Afforestation Schemes undertaken in Project Mode

#### A. Project- Economic Plantation.

Objective: To substantially increase the value of the growing stock of the forests in KBK areas so as to enable these forests to contribute substantially to the socio-economic development of the region in the future.

Choice of species & activity: The selection of species under this project based on the suitability of the site and the choice of the local people. Teak, Gambhari, Bija, Sisoo, Rose wood, and etc. Most of the plantations are predominantly teak & 1,600 plants/ha is planted on this project.

#### B. Project-Non-Timber forest products plantation.

Objective: The objective of this project is increasing the flow of various NTFPs in the KBK region by strengthening the production base by taking up plantation of NTFP.

Choice of species & activity: About 1,600 plants/ha planted in these plantations like amla, harida, bahada, mahua, neem, kusum, karanj, jamu, tamarind, jackfruit, mango, char, simul, polang, khair, haldu, moi, salai, kasi, arjun, asan, mundi etc. New block plantations over 500 ha in all KBK districts.

#### C. Project-Bamboo plantation.

Objective: To strengthen the bamboo production base by taking up plantation of different species of bamboo. This is the short term provide opportunities for transferring income to the rural poor on a sustained basis.

Choice of species & activity: Bamboo plantation over 500 ha in the KBK districts.

D. Project: Indigeneous mixed fuel wood plantation.

Objective: To augment the fuel-wood base of this region enhancing fuel- wood and small timber production by reforesting barren areas with quick growing indigenous species is the focus of this project.

Choice of species & activity: Nearly 1,600 plants/ha planted in these plantations like babool,acacia, khair, badachakunda, chakunda, sisoo, rosewood, subabool, gambhari, neem, kusum, karanj, bija, amu, sisis, etc. New blocks plantations over 2490 ha in all the KBK districts.

E. Project: Rehabilitation of degraded forests.

Objective: To rehabilitate the degraded as well as the degrading forests in the KBK districts.

Choice of species & activity: Gap planting with indigeneous species suitable to the sites. The VSS motivates to discourage grazing in forest areas to protect for natural regeneration.

F. Project-Aromatic and medicinal plantation

Objective: Removal of constraints that arrests the growth of natural vegetation, planting of Aromatic & medicinal plants collection of leaves, flowers, fruits without affecting the natural regeneration.

Choice of species & activity: The species for green hedge plantation of jatropa curcas. Nearly 12 lakh seedlings planted to cover all the proposed sites. See Annexure I, II & III.

G. Project- Joint forest management

Objective: To strengthen participatory forest management in the KBK areas and to make the VSS viable institutions.

Choice of species & activity: The degraded forest block allotted to the VSS for survey & demarcation on the ground by posting of pillars. Micro plan preparation, cost input for each VSS.

H. Project - Construction of storage space

Objective: Recognizing the intimate relationship between the forest department and forest fringe dwellers, the department proposes to double its involvement in undertaking food for works programme especially in the poorer parts of the state.

Choice of species & activity: Nearly 75 go-downs spread over 8 districts of the KBK area have been constructed.

#### I. Project Research & Development

Objective: This project aim at efficient field based research on technical forestry aspects as well as on socio-economic & market issue.

Choice of species & activity: The newly research stations at Talegumma in Rayagada & another at Padiagarh near Bhawanipatna are strengthened.

#### J. Project Development of protected area & promotion of Eco-friendly Tourism

Objective: Karlapat, Sunabeda, Korapat for wild life sanctuary &Eco-tourism in KBK areas.

Choice of species & activity: Protection of wild life, Construction of a base camp, study of culture &life style etc.

#### K. Project-Human Resource Development:

Objective: It aims at capacity building of VSS, field official training, exposure visits organized for selected staffs & VSS.

Choice of species & activity: Training, exposure & field visit to demonstration centre.

#### L. Project- Employment Generation through medicinal plants cultivation

Objective: Promote scientific harvesting, processing& storage techniques relating to medicinal plant products.

Choice of species & activity: The cultivation of medicinal plants is carried out in forest land, private land & community land. Tree species like amla, bela, ashoka, dalchini, harida. Herb species like brahmi, bacha, satavari, safed musli, senna, gudumari &aswagandha etc.

#### M. Project- Monitoring & Evaluation

Objective: To focus on achievement, progress,& drawbacks in Supervision

Choice of species & activity: Efficiency & effectiveness of present monitoring system.

#### N. Project- Combating of Heat Wave in Titilagarh town

Objective: To check forest degradation in Titilagarh area.

Choice of species & activity: Road side land has been planted of mixed tree species.

*Source:* Annual Action Plan RLTA in KBK Districts, Planning & Co-ordination Department, Government of Orissa.

## Exhibit 7: Priority of Species for Cultivation / Plantation

Sl. No.	Botanical Name of the Species	Local Name	Habitat	Parts used for Medicine
1.	Acrous calamus	Bacha	Herb	Rhizome
2.	Aegle marmelos	Bei	Tree	Bark Fruit
3.	Aloe vera	Gheekumari	Herb	Leaf
4.	Andrographis Paniculata	Bhuineem	Herb	All parts
5.	Argyreta nervosa	Briddhadarak	Creeper	Roots, seeds
6.	Asparagus recemosus	Satabari	Creeper	Roots, seeds
7.	Azadiracta Indica	Neem	Tree	All parts
8.	Bacopa monnier i	Jalabrahmi	Herb	All parts
9.	Cardia Macleodii	Panaki	Tree	Leaf
10.	Centerila asiatic	Brahmi	Creeper	Leaf
11.	Chiorophyllum aurindinaceum	Swetamusall	Herb	Tuber
12.	Cinnamomum verum	Dalehini	Tree	Bark
13.	Celastrus paniculatus	Pengu	Creeper	Seeds
14.	Curculigo orchiodes	Talmuli	Herb	Roots
15.	Cusmpogon flexuosus	Dhanwantri	Grass	Leaves
16.	Convolvulus pluricaulis	Shankapuspi	Herb	All Parts
17.	Desmodium gangeticum	Salparni	Herb	All Parts
18.	Elipta Prostrata	Bhringaraj	Herb	All Parts
19.	Embelia ribes	Vidanga	Creeper	Seeds
20.	Gloriosa superba	Panchangulia	Creeper	Tuber
21.	Gmelina arborea	Gambhari	Tree	Bark
22.	Gymemnevna sylvestri	Gudamari	Creeper	Leaf
23.	Litsea glutinosa	Maida/Medha	Tree	Bark
24.	Mucuna pruriens	Baidanka	Creeper	Seeds
25.	Operculina turpethum	Tihudi	Creeper	Root bark
26.	Oroxylun	Phanaphana	Tree	Bark
27.	Phyllanthus emblica	Amla	Tree	Fruit
28.	Premma latifolia	Agibathu	Tree	Bark
29.	Piumbago zeylamica	Swetacheetaparu	Shrub	Root
30.	Plumbago indica	Raktacheeta paru	Shrub	Root
31.	Rauvolfia serpentina	Sarpagandha	Tree	Root
32.	Saraca asoca	Asoka	Tree	Bark
33.	Stereospermum chelomoides	Patuli	Tree	Bark
34.	Symplocos racemosa	Lodhra	Tree	Bark
35.	Termmelia belerica	Bahada	Tree	Fruit
36.	Terminelia chebula	Harida	Tree	Fruit
37.	Tinospora cordifolia	Guluchi	Creeper	Stem
38.	Tribulus terrestris	Gokshura	Herb	All Parts
39.	Uraria picta	Krishnaparni	Herb	All Parts
40.	Vetiveria zizanuoides	Bena	Grass	Root
41.	Withania somnifera	Awagandha	Shrub	Root

Source: Annual Action Plan RLTP in KBK Districts, Planning & Co-ordination Department, Government of Orissa.

### Exhibit 8: List of Medicinal Plants listed under the project

Sl. No.	Botanical Name of the Species	Local Name	Habitat	Parts used for Medicine
1.	<i>Aegle marmelos</i>	Bel	Tree	Bark
2.	<i>Argyreida nervosa</i>	Bridhdharak	Creeper	Root
3.	<i>Desmodium gangeticum</i>	Salparni	Herb	All
4.	<i>Gmelina arborea</i>	Gambhari	Tree	Bark
5.	<i>Operculina turpethum</i>	Tihudi	Creeper	Root
6.	<i>Oroxylum indicum</i>	Phanaphana	Tree	Bark
7.	<i>Phyllanthus emblica</i>	Amla	Tree	Fruit
8.	<i>Premna latifolia</i>	Agibathu	Tree	Bark
9.	<i>Stereospermum chelonoides</i>	Patuli	Tree	Bark
10.	<i>Terminelia belerica</i>	Bahada	Tree	Fruit
11.	<i>Terminelia chebula</i>	Harida	Tree	Fruit
12.	<i>Tinospora cordifolia</i>	Culuchi	Creeper	Stem
13.	<i>Tribulus terrestris</i>	Gokshura	Herb	All
14.	<i>Uraria picta</i>	Krishnaparni	Herb	All
15.	<i>Solanum xanthocarpum</i>	Ankaranti	Herb	All
16.	<i>Solanum indicum</i>	Bhejibaigana	Herb	All

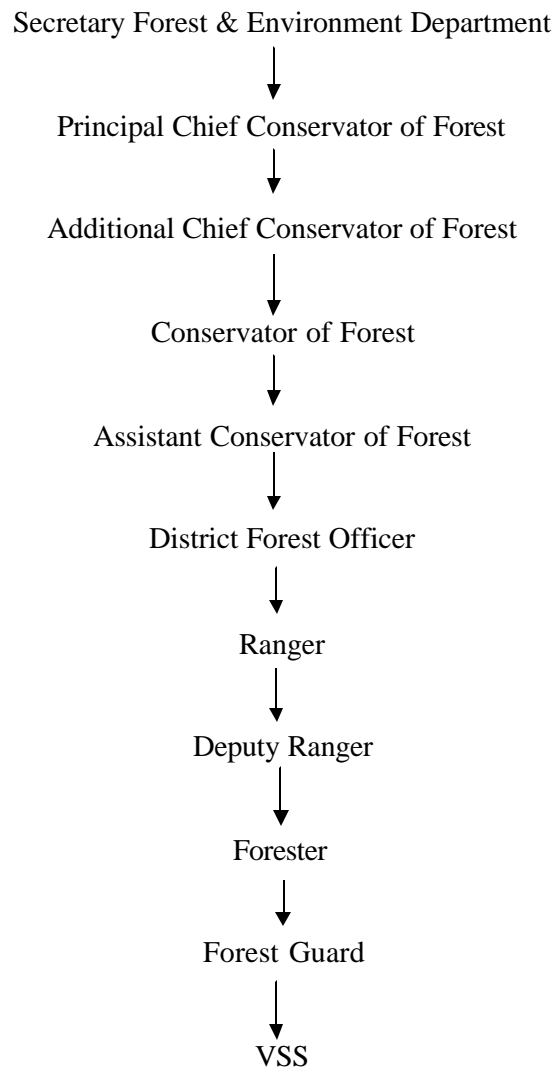
Source: Annual Action Plan RLTA P in KBK Districts, Planning & Co-ordination Department, Government of Orissa.

### Exhibit 9: List of Species Suitable for Green Hedge

Sl. No.	Local Name	Botanical Name
1.	Chillar	<i>Acacia caesia</i>
2.	Basanga	<i>Adhatoda vasica</i>
3.	Begunia	<i>Vitex negundo</i>
4.	Ramjada	<i>Jatropha curcas</i>
5.	Baigaba	<i>Jatropha gossypifolia</i>
6.	Bilati babul	<i>Prosopis juliflora</i>

Source: Annual Action Plan RLTA P in KBK Districts, Planning & Co-ordination Department, Government of Orissa.

Exhibit 10: The implementation mechanisms of VSS  
(A top-down decision making structure)



**Exhibit 11: District-wise Distribution of Forest Fringe Villages, Existing VSS and New VSS 2004-05 and 2005-06**

Sl. No.	Old District	New Districts	Forest Fringe Villages (No)	Existing VSS (No.)	New VSS (No.)	
					2004-05	2005-06
1.	Koraput	Koraput	4,291	481	100	15
		Rayagada		970	80	15
		Nawarangpur		97	75	10
		Malkangiri			-	10
2	Bolangir	Bolangir	2,105	378	65	15
		<b>Sonepur</b>				<b>20</b>
3	Kalahandi	Kalahandi	1,807	681	100	15
		Nuapada		381	60	10
	<b>Total</b>		<b>8,203</b>	<b>2,988</b>	<b>500</b>	<b>100</b>

Source: Annual RLTA report, planning & co-ordination Department Govt. of Orissa.

**Exhibit 12: Figures Achieved in the Afforestation Programme in  
KBK districts under RLTA P (Area in ha.)**

Scheme		1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	Total
IAEP	Block – Plantation- Teak	3340	3000	2177	4405	4750	3670	21342
	RDF	10905	10000	8000	6000	4550	5000	44455
AOFFP	Block Plantation	3042	3040	2000	Not continued during Tenth Plan			8080
	RDF	10515	10000	5848				26363
	Silvi pasture	500	300	150				950
NTFP	Block Plantation	2025	2640	1800	1000	1000	770	9235
	Bamboo	1125	1220	900	500	1000	905	5650
Indigenous Mixed Fuel wood		Started from Tenth Plan Period			2000	1800	2490	6290
Aromatic & Medicinal Plantation	In-Situ				2500 (Adv work)	2,500	0	2500
	Ex-Situ				100 (Adv work)	100	200	300
Total		<b>31452</b>	<b>30200</b>	<b>20875</b>	<b>13905</b>	<b>15700</b>	<b>13035</b>	<b>125167</b>

Source: Annual RLTA P Report, Planning & co-ordination Department, Govt. of Orissa.

**Exhibit 13: District-wise and year-wise generation of Man-days  
under RLTA P**

Sl. No.	District	Man-days Generated (Lakh)						Total
		1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	
1.	Koraput	5.61	7.32	5.03	5.03	5.28	5.81	34.08
2.	Malkangiri	2.31	1.86	1.36	1.45	1.63	1.81	10.42
3.	Nawarangpur	2.94	2.46	1.42	2.00	2.00	2.30	13.12
4.	Rayagada	3.84	4.83	2.89	2.41	1.70	2.84	18.51
5.	Bolangir	4.72	5.34	3.90	2.94	3.54	5.72	26.16
<b>6.</b>	<b>Sonepur</b>	<b>0.56</b>	<b>1.39</b>	<b>0.34</b>	<b>1.14</b>	<b>0.61</b>	<b>1.39</b>	<b>5.43</b>
7.	Kalahandi	4.44	4.50	2.84	3.04	2.35	3.67	20.84
8.	Nuapada	2.99	2.76	1.96	3.10	2.30	2.46	15.57
	<b>Total</b>	<b>27.41</b>	<b>30.46</b>	<b>19.74</b>	<b>21.11</b>	<b>19.41</b>	<b>26.00</b>	<b>144.13</b>

Source: Annual RLTA P report, Planning & co-ordination Department Govt. of Orissa.