

## Tenure and Access Rights as Constraints to Community Watershed Development in Orissa, India

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Watershed development is the focal point of efforts for agricultural development, natural resource conservation and poverty alleviation in rainfed areas of India, with an annual budget of about \$500 million. The watershed approach aims to integrate the use of land, water and vegetation resources in an area that drains to a common point. These resources have multiple users and multiple, possibly conflicting uses, making what is otherwise a relatively simple technical undertaking into one that is socially very complex.

The watershed approach focuses on ecological and economic restoration of both private and state owned lands in microwatersheds through community capacity building, soil and moisture conservation, and management of common pool resources such as irrigation, forests, etc. As an integrated approach, it tries to leverage local social capital to sustainably manage watershed landscapes. Forms of co-management and community management of common resources are core ingredients of watershed development programs.

However, the watershed development approach as practiced in India has not taken into account the complex and fragmented tenurial rights on common pool resources, both formal and informal in nature. Jurisdictions over resources like water and forests overlap between different state agencies and departments as well as constitutionally created local bodies like Panchayats (village-level government units), and formal tenurial rights are often embedded in complex legal provisions. Informal resource use systems also exist and appear to have greater legitimacy in the local communities. Both formal and informal tenure systems are embedded in wider social, economic and cultural contexts and may have been the result of historical contestations or coercion.

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<sup>5</sup> The undivided Koraput district was one of the largest in the country. In 1990, Koraput district was subdivided into four districts – Koraput, Rayagada, Nowrangpur and Malkangiri – but the area is still often referred to as undivided Koraput.

There is little appreciation of these complexities in the design and implementation of watershed development programs that are based on simplistic ideas of soil and moisture conservation and management of common pool resources. Management interventions that fail to take into account the complexities of tenure arrangements can generate conflicts and lead to unintended outcomes affecting sustainability and equity. This seems to be one of the most important reasons for difficulties facing sustainable watershed development in India, especially in hilly areas with a high concentration of land controlled by the Forest Department.

This paper examines the performance of watershed projects in hilly areas of Orissa, India, characterized by conflicts over land rights primarily between the Forest Department and local tribal communities. The study area is notable for the government's attempted use of mechanisms to reward land users in upper watersheds for adopting perennial vegetation that would provide various environmental services; this approach is virtually unknown in the rest of India. However, the approach has met limited success due to conflicts surrounding the status of Forest Department land and failure to appreciate existing systems of customary land tenure. The paper demonstrates the perverse outcomes that result when project interventions fail to appreciate these issues and discusses some approaches to resolve the problem.

## ***1. Conceptual Framework and Literature Review***

To be written (draw on literature on rewards for environmental services and the problems that can arise regarding the distribution of benefits; literature from other countries about clashing tenure systems and the fact that it gets very little attention in India; also ideas about the unintended consequences of natural resource management interventions.)

## ***2. Background of study area***

The field work for this study was conducted in the undivided Koraput<sup>5</sup> district of southern Orissa. All the cases are located in scheduled areas with a majority of Scheduled Tribes and Scheduled Caste households (STs and SCs).<sup>6</sup> Most of the case

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<sup>5</sup> Scheduled tribes refer to adivasis, or ancient indigenous groups outside the mainstream of Indian society. Scheduled castes refer to dalits, sometimes referred to as untouchables. The Indian Constitution provides special protection to tribal communities through Schedule V and VI. Schedule VI areas are located in North

study sites share ambiguity in land tenure, with customary or informal systems diverging quite widely from the formal system. Like most watersheds in tribal Southern Orissa, shifting cultivation (known locally as *podu*) are a major land use, and the watersheds tend to be steep with narrow valleys.

The socio-economic indicators in these areas are comparable to the worst in the world with the percentage of people below the poverty line ranging from 72% to 83%, compared to 47% for Orissa and 26% for India. Unlike the rest of Orissa and India, the poverty incidence in the study areas has increased in the last two decades (Haan and Dubey, 2003). The extreme backwardness of these areas has led to a plethora of development interventions, including watershed development and other natural resource development projects.

The region consists of large areas of rugged hills with deep valleys interspersed with wide river valleys and large plateaus. The altitude ranges between 150-1500 meters above mean sea level. Mean average annual rainfall is 1521 mm, giving it a potentially productive agroclimate.<sup>7</sup> Forest types range from semi-evergreen to dry deciduous. This region is endowed with impressive biodiversity and is one of the primary centers of origin of rice.

The official net sown area ranges around 25% of the total area of the region, and is concentrated in plateaus and the wide river valleys. In the hilly areas, permanently cultivated areas can be as low as 10% of the landscape. 33% of cultivated area is irrigated. Paddy occupies around fifty percent of the cultivated lands. Upland paddy and ragi (finger millet) are cultivated on around one third of the cultivated area.

In the areas taken up for the study, three types of agricultural land uses predominate. First, traditional cultivation on and along streambeds called Jhola cultivation is used for growing paddy. The Jhola systems are sophisticated water management systems in which terracing, leveling and channeling of perennial stream flows provide sufficient water and nutrients (leachates from upper catchments) for paddy

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East India, whereas tribal community concentrations in rest of India come under Schedule V. In Orissa, Schedule V areas cover 45% of the state with a population approaching ten million, out of which 68% are Scheduled Tribes and 20% are Scheduled castes. The major tribal communities in the Koraput and Rayagada districts are Kondhas, Saoras, Parojas, Gadabas, and Gonds.

<sup>7</sup> Agro-climatically the region lies in Agro Ecological Zone 12 (NBSSLUP, 1992) and in a NARP (National Agriculture Research Project) zone called 'Eastern Ghat High Land Zone' of Orissa.

cultivation, mostly without fertilizer. Second, medium lands and uplands are used for cultivation of upland paddy and various other crops. Third, steep hill slopes are used for shifting cultivation and its variants. The land use system is dynamic, i.e. new land is created along the streambeds and rotational agriculture is followed on the hill slopes. Almost all agriculture is rainfed, and irrigation is primarily through diversion of perennial streams through the Jhola systems or small diversion weirs. Apart from the Jholas and some medium land, agriculture including shifting cultivation is carried out on sloping lands, which given the soil type and high intensity rainfalls, are highly vulnerable to soil erosion and gully formation. Loss of vegetation on slopes and upstream areas also make the jholas and medium lands vulnerable to sand casting and crops being washed off in intense rains.

Natural increases in population, immigration, displacement through major development projects and reservation of land as forests have increased the pressure on land in the last fifty years. This has especially affected the higher hill slopes where the shifting cultivation cycle has been reduced, leading to soil and vegetation degradation. There is little research on the ecological and social dynamics of land and forest degradation in the area. The watershed case studies brought out the complex dynamics behind degradation of natural resources and its linkages with poverty and livelihoods. However, the official discourse lays the primary blame on shifting cultivation and poor agricultural practices by the tribal inhabitants. This discourse needs to be treated with skepticism as much of the recent literature from South East Asia, Africa and Latin America accepts shifting cultivation or forest fallow as a valid land use practice.

### **3. *Systems of land and forest tenure***

The first detailed Survey and Settlement<sup>8</sup> of the study area took place from the 1940s to 1960s, and except for Kashipur block of Rayagada district, no Survey and

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<sup>8</sup> Survey and Settlement (S&S) are statutory processes which formalize and update land tenure system within the framework of land tenure laws. In context of Orissa, these laws were Orissa Tenancy Act, Orissa Land Reforms Act, Orissa Survey and Settlement Act etc. The S&S formalizes and updates the landownership records and prepares maps of landownership and settles the rights on land. In most tribal areas of Orissa, the first comprehensive S&S took place only after independence – thus the first S&S laid down the framework of landownership and tenure, and the system of formal rights. When the First Survey and Settlements (S&S) in Koraput district took place (1938-1964), there was no proper preexisting formal record of landownership or tenancy in the district. The Survey and Settlement processes defined the land

Settlement has been conducted since. The major legal categories of land created through Survey and Settlement are Forest Department lands, revenue lands, and private lands. Most land is state-owned<sup>9</sup>, but much of the state-owned land is under permanent or shifting cultivation. Cultivators claim these lands on the basis that their forefathers cultivated these lands and that they paid cess or rent for these lands to erstwhile rulers of the area.

The Survey and Settlement did not recognize the claims of shifting cultivators.<sup>10</sup> People who could document that they had been cultivating the land for at least 12 years were able to secure private rights, but those practicing shifting cultivation could not, largely because they moved from one place to another and so could not claim continued occupation. As a result, for many or most of Orissa's tribals an ancient practice was suddenly declared illegal, and they were declared encroachers on what they had always treated as their own land, even paying land tax to the area's erstwhile princely rulers.

The hill slopes were classified as either revenue wastelands, Forest Department land or as unsurveyed areas (often marked as 'Forest Blocks' outside village boundaries) i.e. state-owned lands. Forest Department land refers to state-owned land controlled by the Forest Department, and revenue land is controlled by the Revenue Department. Despite lack of recognition of private claims on hill slopes, the practice of shifting cultivation has continued. With increasing population, shifting cultivation has intensified with fallow cycles reduced to 2-3 years in many areas, leaving vegetation on many slopes completely degraded. However, observations during the field work revealed that in many watersheds, cultivators have started investing to rehabilitate some of these lands.

The Survey and Settlement operation also classified many areas with vegetation as Forest Department land,<sup>11</sup> even though they might have been used for shifting

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owned by individuals and by the State and also categorized them. They determined which land areas were right burdened, which belonged to ryots (farmers) and which belonged to the State.

<sup>9</sup> 68% of land in Koraput is state-owned and 80% in Rayagada.

<sup>10</sup> During the Koraput Land Settlement, the Board of Revenue, GOO, as per a letter dated 12<sup>th</sup> March, 1959, ordered that all lands in continuous possession of farmers for 12 years, on any slope, may be recorded in their names. All land on hill slopes which were not in continuous possession of 12 years was to be recorded as Government land (Koraput Survey and Settlement Report: 198). This automatically excluded all shifting cultivation (as the cultivation was done in rotation with the land lying fallow for a number of years) from definition of continuous possession.

<sup>11</sup> Forest lands are of different categories and different sets of laws apply on different categories. Reserve and Protected Forests are lands declared as such under Indian Forest Act, 1927. As per the IFA 1927,

cultivation at that time. By now, most such areas, lying mostly in the upper reaches of watersheds, are used for shifting cultivation. In some other areas, for example Raighar Block of Nowrangpur district, vast areas of Forest Department land are under permanent cultivation. In view of the Forest Conservation Act, 1980, which forbids conversion of Forest Department lands for non-forest purposes, these lands can be used only for forestry purposes. Only the Ministry of Environment and Forests of the Government of India can allow the diversion of Forest Department land for non-forestry purposes. The diversion of Forest land is contingent on converting the same amount of non-Forest Department land to forest category through compensatory afforestation. This makes legal recognition of the cultivation on Forest land extremely difficult.

In the context of watershed projects, this implies that only forestry activities, i.e. forest tree plantations, can be taken up on Forest Department lands. Also, any trees that local people might protect would belong exclusively to the government, and harvesting them would be illegal. The Forest Department's main strategy to treat these Forest Department lands is through plantations, which tend to fail because of lack of cooperation and active resistance by people they displace. All state-owned land (except Reserve Forests) is under the control of the Revenue Department. The Government has undertaken some initiatives to provide ownership rights to landless tribal and scheduled castes in non-forest<sup>12</sup> state-owned land, though it seems to have covered very little area.<sup>13</sup>

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Reserve Forests can be declared only after a settlement of existing rights has been carried out. In Orissa, during the Survey and Settlements, many areas were settled as forests under different names. These are neither Protected Forests nor Reserve Forests, and the Forest Department designates them as Other Forests. These lands are formally controlled by the Revenue Department. However, large areas of such "other forests" are under settled or shifting cultivation, but due to the restrictions imposed by Forest Conservation Act, 1980, they can't be settled in the name of the cultivator easily.

<sup>12</sup> Non forest land here means land which is not legally categorized as Forest Department land. As per the Supreme Court's interpretation, any land which is recorded in any official record as forest, has to be treated as Forest Land, and cannot be diverted to any non-forest land use without prior permission of the Government of India.

<sup>13</sup> In 1992, GOO issued a circular under which non-forest land up to 30% slope could be settled in name of shifting cultivators in Kashipur Block of Rayagada district. This was done in conjunction with the IFAD-funded Orissa Tribal Development Project (OTDP) and over the project period, 17,175 acres of sloping land (Dongar) were settled in name of 6,137 tribal beneficiaries in 236 villages out of total 412 villages in Kashipur. Each beneficiary was settled with 2-2.5 acres of land on hill slopes. Conditions were: "Land is suitable only for year round fruit cultivation or dry land agriculture. The land is non-transferable. However, it can be mortgaged with govt. financial institutions to avail agriculture loan. If any of the above conditions are violated, the rights would be withdrawn."

On Revenue Land, the government has adopted the strategy of promoting horticulture plantations as an alternative land use and livelihood source for the shifting cultivators.<sup>14</sup> In Koraput region the main plantation crop has been cashew, though sisal, coffee and others have also been promoted. Before 1980, most of these plantations were taken up under various soil conservation programs and there were no provisions for any usufruct rights to local people. After 1980-81, a clear strategy to provide usufruct rights to landless and poor under Economic Rehabilitation for Rural Poor (ERRP) was undertaken and cashew plantations were allocated to the rural poor at the rate of two acres each. Thereafter, it has been government policy to provide usufruct or ownership rights to horticulture plantations taken up under various schemes in tribal areas. Recently a scheme for rehabilitating shifting cultivators has also been taken up by the GOO, which also includes allocating usufruct rights to shifting cultivators over plantations.

There seems to be inadequate follow-up of these policies and it is difficult to obtain data about the areas allotted to landless and the current status of these areas. Our study brought out a number of issues that need to be resolved regarding the creation or exercise of rights over these assets; these are discussed below.

The farmers also create new paddy lowlands (Jhola) by leveling streambeds. Streambeds are often classified as Revenue Land and sometimes even Forest Department land. In Revenue land of certain classifications, such newly created jholas can be allotted to the farmers who have created them, provided they meet certain criteria of land ownership (ownership of less than one standard acre). However, jholas created in areas categorized as Forest Department lands can't be allotted to the farmers. In some cases, pre-existing Jhola land may have been included in Reserve Forests due to faulty settlement.

On private land, it is observed that even though land has fragmented through inheritance, in most cases the fragmentation has not been formally recorded in the Record of Rights. Thus even though a large number of households may be actually within the

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<sup>14</sup>A number of government circulars provided the relevant guidelines. GOO circular No GE(GL)-S-69/79-3755/Rev dated 18<sup>th</sup> July 1980 on conferring usufructory rights on temporary basis; GOO circular No GE(GL)-S-8/81-37565/Rev dated 20<sup>th</sup> July 1981 on implementation of the ERRP program - conferment of usufruct rights on the eligible beneficiaries; GOO circular No GE(GL)-S-17/91-8905/Rev dated 23<sup>rd</sup> Feb 1991 on temporary leasing of land to the beneficiaries for plantation and enjoyment usufructory rights.

criteria of landless (less than one standard acre<sup>15</sup>), it is not reflected in official records. As per current policies, the landless are eligible to get land up to one standard acre as pattas. This also means that the official land records are not very useful as far as ascertaining number and sizes of actual operational holdings in the region.

The complex dynamics of shifting cultivation and jholas in the study area are inadequately captured by the formal land and forest tenure system, creating ambiguities and conflicts with bearing on both livelihoods and sustainability. The disjunctions between the actual land use and the legal categorization of land have major implications on livelihoods and development in the area, including on watershed development programs. Some of the important externalities in watershed development are created because of these disjunctions.

#### ***4. Watershed Programs in the Study Districts***

With the high livelihood dependence on natural resources, subsistence agriculture, hilly and rugged topography, ongoing degradation of resources and high potential for natural resource based development, watershed development has emerged as an important development strategy in the region. Watershed projects date back 40 years and a number of watershed programs currently operate in the study area. At present, in the two districts taken up for the study, 340 watershed projects covering over 180,000 ha are being implemented under various watershed programs. The total outlay of these projects is approximately Rs. 1400 million (approximately \$35 million). A number of other government programs include watershed components but are not counted in these figures.

The watershed development project components in the areas can be categorized as area treatment of common lands (state owned lands), treatment of private agricultural land for intensification and diversification, drainage line treatments and creation of irrigation capacity. In watershed development projects, plantations of cashew, mango etc. and soil and moisture conservation activities like contour ditches and trenches for moisture conservation, gully plugs for water harvesting, etc. are being taken up in state lands. Silvi-pasture is also being taken up on gochars (land settled as grazing areas).

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<sup>15</sup> Most programs and circulars which allow for giving ownership or usufruct rights are restricted to those categorized as “landless”. As per the Government circulars, a household owning less than one standard acre (irrigated) of land should be categorized as landless. One standard acre is equivalent to 2.5 acres of unirrigated medium land or 4.5 acres of unirrigated uplands.



Private land treatment includes support for earthen and vegetative bunds, gully control, provision of horticultural planting material and improved seeds, crop demonstration and other agricultural extension support. In the study area, there has been a concerted effort for crop diversification, including vegetables, banana and other horticulture crops.

Drainage line treatments include gully plugs, small weirs and check dams, percolation tanks etc. Irrigation capacity is created through diversion weirs on streams to provide irrigation along higher contours, though where locations are available, small storage structures are also created.

Following government guidelines, watershed projects operate as partnerships between local people and either government agencies or nongovernment organizations. Most projects in the study area operate through the Block Development Office.

Cashew and other horticultural plantations are widely used to rehabilitate degraded non-Forest Department lands in the study region. As introduced above, there is a policy of granting ownership or usufruct pattas (land rights) to the landless and poor who agree to maintain horticultural plantations in Revenue wastelands and stop practicing shifting cultivation. Apart from the watershed development projects, large areas of cashew, coffee and other horticulture plantations are being carried out on state-owned lands through other programs, all with the aim of being handed over to the landless and poor. Recently, coffee plantations for distribution to Scheduled Tribe households have been initiated, and within the case study areas we observed large areas of land planted by silver oak in preparation for coffee plantations.<sup>16</sup> Sisal has been another important species planted for soil conservation as well as income generation.<sup>17</sup> Large areas of government wastelands were planted with cashew by the Soil Conservation Department since the 1950s, and thousands of hectares of plantations initiated up to 1980 have been handed over to Orissa State Cashew Development Corporation for commercial exploitation.

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<sup>16</sup> Under the Tribal Development scheme, the Integrated Tribal Development Authority (ITDA) through the Soil Conservation Department and Forest Department is taking up coffee plantations in 1214 ha of land for distribution to 1503 beneficiaries under the Additional Central Assistance from Govt of India at a cost of Rs 11 million during 2002-04. One of the main aims is to mobilize tribal communities to refrain from shifting cultivation.

<sup>17</sup> Sisal (*Agave sisalana*) has been planted over 2600 ha of public land in the district during 1996-99.

## **5. Generation of externalities in watersheds**

Most of the watershed externalities observed in the case studies are linked to heterogeneity of property rights and linkages between downstream and upstream users. These externalities are embedded in complex situations comprising of rights and tenure systems, cultural and social practices, imperatives of ecological relationships, state policies, and local economy and markets. We have categorized watershed externalities in the context of various interventions taken up for development of watersheds.

### **5.1 Forest Department land on hill slopes**

In almost all the case studies, it was found that part of the watershed has been declared as Forest Department land of various types. The Forest Conservation Act, 1980, forbids any non-forest use of any type of Forest Department lands and only the Forest Department can develop these areas through forestry activities. Watershed development guidelines issued by various Ministries of the Government of India, also underlines the same<sup>18</sup>. However, in most watersheds, these Forest Department lands are degraded as they are being used for shifting cultivation. The watershed projects do not treat Forest Department lands, thus effectively excluding the top reaches of the watersheds from treatment such as horticulture plantations or agro forestry, which could provide livelihood support to the shifting cultivators who depend on these lands.

The Forest Department is taking up forestry plantations of Forest Department lands where shifting cultivation is also practiced. Often these plantations are unsuccessful due to lack of cooperation or even active resistance by shifting cultivators who customarily claim these lands. There seems to be confusion about sharing the production of the plantations with the village communities, providing villagers little reason to protect them. Thus in most cases these forestry plantations fail, and the Forest Department lands

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<sup>18</sup> Guidelines suggest that in case the forest area inside a watershed is relatively small a forest department official may be made a member of the watershed development team with technical sanction from the Divisional Forest Officer (DFO). Implementation will be by the village Forest Committee and in its absence by the Forest Department. The watershed micro-plan should also be in conformity with FCA, 1980. When the proportion of forest area in the watershed is relatively large, the Forest Department may be made the project implementing agency (PIA). However, in practice implementation is far from these guidelines. An example is our study watershed Malkarabandh, where even though the percentage of Forest area exceeds 70%, the Block Development Office is the PIA and there is no Forest Department official in the watershed development team. (The watershed guidelines do not offer clear delineations regarding what constitutes small or large area of Forest land in a watershed (GOI 2001, GOI 2003).)

within the watersheds remain effectively untreated, unless the local villagers have taken their own initiatives to protect such areas.

Forest Protection Committees under Joint Forest Management<sup>19</sup> are being formed wherever the Forest Department is undertaking new plantations or filling gaps in old ones. Under JFM, the villagers are to be allowed 50% of the final harvest from the forest plantations. However, given a number of restrictions on harvesting trees, it seems doubtful that the communities will ever realize profits from such agreements.

## **5.2 Protection of natural forests in the catchment areas**

Most hill slopes in the study area still contain rootstock or degraded scrubs, which could come back as natural forest after being left alone or protected. Over the last 20-30 years, a number of village communities have started to protect forests on their own.<sup>20</sup> A number of villages visited for this study were found to be protecting forest areas. This is a low cost and efficient approach to protect vulnerable upper catchments and is often promoted under the watershed projects. Protection of forests in upper reaches creates positive externalities for downstream users. However, protection of these areas imposes costs on those who used or depended on them earlier. In the study area, conflicting interests become greater as upper reaches are mostly under shifting cultivation by mostly poorer SC/STs, whereas the lowlands may be owned by comparatively better off farmers. The study revealed cases of both inter-community and intra-community conflict due to community forest protection.

## **5.3 Agriculture and water on hill slopes**

Shifting cultivation is the traditional cultivation practice of tribal communities in Southern Orissa. In almost all the case study villages, we found prevalence of shifting cultivation on the hill slopes, though shifting cycles have reduced drastically. This has led to degradation of hillside vegetation, increasing soil erosion and scarcity of forest products. According to villagers, the degradation of hillsides has affected both the quality

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<sup>19</sup> The Joint Forest Management Program is a program for co-management of State owned forests by local communities and the Forest Department. It has been adopted by almost all states in India. In Orissa, Joint Forest Management has often meant formalization of pre-existing community forest protection.

<sup>20</sup> Very large numbers of village communities are protecting forests in Orissa (estimates range from 6000-10000). This community forest management (CFM) trend started back in the 1950s and 60s, and expanded exponentially in the 1980-90s. Most of these have been initiated without any official support or encouragement. For example in Koraput district (new) alone, more than 500 villages are involved in forest protection, including one of the case study villages (Malkarabandh).

and quantity of water flow. In absence of fertilizer usage, the lowland as well as medium land depends on the nutrient flow from hillsides and villagers pointed out that there is reduction of “*rasa*” (nutrient content) in water due to hillside degradation (Phatkijam case study, described below). The streams also carry more coarse silt, which affects the Jhola land through sand casting. Another externality caused due to degradation of hillsides is non-availability of suitable small timber and wood for house-construction, agriculture implements and non-timber forest products including wild foods.

#### **5.4 Treatment of state-owned land through horticulture plantations**

Most state lands taken up for plantations are already under cultivation, either permanent or shifting. Farmers (mostly tribals) claim customary rights over most of these lands. However, the government normally allocates these plantations to the landless (households owning less than one standard acre of land). Externalities were generated in the contexts listed below:

- Usufruct or ownership rights on plantations provided to individuals other than those laying customary claim to the land, leading to conflict.
- Plantations on areas claimed by farmers who cannot possibly be given any usufruct rights as per government policy because they already own more than one standard acre or are non-ST and so are ineligible for tribal welfare schemes.

Handover of plantations to groups of beneficiaries without clarity about internal boundaries.

#### **5.5 Irrigation through diversion weirs, water harvesting structures etc:**

Construction of diversion weirs also leads to state-owned land on valley bottoms becoming irrigable and often farmers develop these lands to get irrigation benefits. Thus new areas come under agriculture. After payment of encroachment fines on these new lands for a number of years, the land can be regularized in the name of the encroacher, subject to certain restrictions.<sup>21</sup>

Unsuitable or inflexible policy or legal provisions may also cause externalities – for instance lack of permission for change of land use by the Tehasildar<sup>22</sup> forced a change

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<sup>21</sup> Only those having less than two standard acres of land can be allocated encroached land.

<sup>22</sup> The revenue head of a Tehsil, a unit of revenue department consisting of few revenue circles which in turn contains few revenue villages.

in the design of irrigation system in Kaveribadi Watershed. Land use change from agriculture to non-agriculture use requires the permission of the relevant authority, in this case the Tahasildar. The particular tahasildar in this case interpreted digging of a water harvesting structure as change of agricultural land to non-agricultural land, and refused to allow it. This forced the project to change the design to a diversion weir.

### **6. Examples of Watershed Externalities: Brief Case Studies**

Seven short case studies from five villages in the study region illustrate some of the points introduced above. All the villages share characteristics of most villages in the area, with high tribal populations and a high percentage for state-owned land.

#### **Case 1: Transition from Shifting Cultivation**

Malkarbandh is a compact, narrow watershed in Pottangi Block of Koraput District. High hills on three sides drain to narrow valley bottoms. Private land in the watershed constitutes only 41 ha or 22% of the watershed area out of which only a third is Jhola land (paddy land). Forest Department lands constitute 71% of the lands in the watershed with the Revenue Department controlling another 6%. The forest areas on the hill slopes have been traditionally used for shifting cultivation. At present, apart from patches of eucalyptus plantations and some natural regeneration that the villagers are protecting, the Forest Department areas are devoid of any visible forest vegetation. A government watershed project has operated in Malkarbandh for four years.

Plantation initiatives by different departments and the watershed project over the years have become successful in almost stopping shifting cultivation in the watershed. Since 1999 the watershed project has provided continuous employment for people in the village. It also created additional irrigation, raised the area under paddy, and introduced vegetables and bananas through water provided by a diversion weir under the project. Jhola lands have expanded by almost 25%, creating an additional livelihoods source. Thus transition from shifting cultivation could take place because the population within the watershed was small, alternative employment sources were available, net cropping area increased through irrigation and cropping intensification and diversification, especially vegetable and banana cultivation provided higher returns. However, the watershed project will end soon and this will close an important employment source. Given the large number of landless and marginal cultivators in the village, it remains to

be seen whether the crop diversification and area expansion under agriculture would be able to fulfill the requirements of all the families in the village, or whether they would return to shifting cultivation on the upper hill slopes.

Prior to the watershed project, a eucalyptus plantation by the Forest Department in 1992 forced the villagers to stop shifting cultivation on one of the hills. This created hardships for many households and led to intensification of shifting cultivation on other hill slopes. Though the villagers effectively protect and manage the eucalyptus plantations as well as some of natural regeneration, there is no clarity on the usufruct rights on these plantations. The village community has designed rules to occasionally harvest trees as per their requirements. However, such harvesting is an offense according to forest laws. The Eucalyptus trees have reached harvestable age but there seems to be utter confusion about who will get the proceeds from these plantations if they are harvested. Lack of clear benefits to the villagers from these plantations carries the serious risk of breakdown in the current protection and management system, and a reversion to shifting cultivation on hill slopes. With almost 70% of the watershed classified as Forest Department land on which the Forest Conservation Act, 1980 is applicable, a related issue is the inability to use these areas for any livelihood supporting activity apart from forestry. Thus the watershed project cannot take up plantations of cashew or other horticultural species on these lands, nor they be allotted to individual households.

### **Case 2: Giving villagers an incentive to refrain from shifting cultivation (Malkarabandh)**

A few decades back, Malkarabandh was seen as a resource rich village, mainly because of the vast stretch of hill slopes available for shifting cultivation. Over last 40 years, six families immigrated into the village, which have grown to 12 households at present. While two of the immigrants had come to the village because their sisters were residing here, others came from nearby villages. Except for two households (who live by wage labor and as livestock herders), other immigrants used to till patches on the hill slopes under shifting cultivation until a few years back.

The diversion weir and the new masonry water channel taken up under the watershed project allowed development of fallow uplands lying between the Jhola and the hill slopes into profitable year round vegetable cultivation plots. However, there was

a feeling that the shifting cultivation land use by the immigrants in the immediate upstream was a threat to sustainable downstream production. A village meeting was called and these families were offered incentives in the form of lease of patches of irrigable private lands for cultivation. The community also allowed three of them to develop government land and utilize the diversion weir water to take up crops on these lands. The terms of the lease were generous as the tenant kept the entire crop output and only had to pay the land cess of about Rs 10-20 per year. Thus an emergent externality when shifting cultivation upstream threatened downstream agriculture was resolved by the villagers themselves by creating new sharing mechanisms, wherein landholders themselves decided to provide alternative livelihood sources by giving high quality land to the landless.

### **Case 3: Conflicts over customary and legal rights (Kudkitunda Watershed)**

Kudkitunda is a small (202 ha) watershed located in the Kashipur Block of Rayagada District. The watershed contains a single tribal village. All the hills in the watershed were used for shifting cultivation. Before Independence, 13 families used to pay tax to do shifting cultivation on the hillsides. Their rights on the hillsides were not formalized during the first Survey and Settlement in Kashipur and the hillsides were settled as state-owned Uncultivable Wastelands.

In the early 1990s, the IFAD funded Orissa Tribal Development Project (OTDP) took up plantation and land development on one of the hill slopes in the village and distributed the land to landless villagers with nontransferable pattas (legal, individual usufruct rights). According to villagers, the OTDP asked villagers to prepare a list of poor households for distribution the pattas. As per the list prepared by the villagers and endorsed by the OTDP, 26 beneficiaries were distributed pattas for 1 ha each with some conditions<sup>23</sup>. Identification of plots to be allocated and demarcation of their boundaries were done in the presence of the proposed beneficiaries. Many cashew plants have survived and have started giving yield, making these trees valuable property.

However, after the project the customary owners (of whom only two had been part of the process) asserted their rights on the lands allotted to new beneficiaries. This

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<sup>23</sup>The pattas were non-transferable, to be used for only raising fruit crops and could be mortgaged for bank loans.

led to conflicts between the customary owners and official owners. The conflict became more intense with the fruiting of cashew and realization of its monetary value. The customary and official owners eventually agreed on a solution. Out of the 26 pattas, thirteen of the official patta holders including two customary owners have been allowed to exercise rights over both the land (i.e. the intercrop production) and the cashew trees, four have rights over only inter crop production; four are getting access to tree and half of the crop production and five have not been allowed to either use the land for cultivation or the produce from the plantations. The sharing systems are quite innovative and seem to have been worked out on a case-by-case basis.

These arrangements were made after detailed negotiations and the different sharing system seems to reflect close relationships between the customary and official owners, and the continued local legitimacy of the customary system of rights. Even though officially only the patta holders have rights, allowing them to share access to the land was seen locally as doing them a favor.

The strength of customary rights and the perceived illegitimacy of official pattas raises a fundamental issue for watershed and related development initiatives in this region. One of the major strategies for development is the provision of rights (both usufructory and ownership) over state land to beneficiaries under various schemes, even though much of this land may be customarily used and claimed. There seems to be little understanding or study of what happens in such situations and the equity or sustainability implications.

The case also illustrates traditional mechanisms for resolving disputes in homogeneous tribal villages. However, the ability to resolve conflicts may not apply in all such situations and perverse outcomes could result. It becomes very important to review what is happening in situations where official rights are superimposed over customary rights and the outcomes thereof, so that the policy could be modified accordingly.

#### **Case 4: Forestry Plantation on revenue wastelands (Kudkitunda)**

A watershed project in Kudkitunda operated by the NGO Agramee with government funds has created 12 ha of mixed plantations with mostly *Acacia auriculiformis*. The plantation is on the revenue wastelands villagers claim through



customary rights. The customary owners had allowed the plantation to be developed as the common property of the villagers. The fast growing trees have matured and could fetch a good price in the market. However, it may prove very difficult to harvest and sell the wood, although the plantation was planted by the watershed project and the village community has protected and maintained it as the plantation is on government land. The plantation has not been formally handed over to the village by the Revenue Department, which owns the revenue wastelands. The village is well aware of the value of the plantation as acacia wood fetches a good price at the nearby Paper Mill. However, transportation of wood is regulated by the Forest Department which maintains check gates and would seize it unless there is a permit for its transport. Such a permit will not be available as the village cannot show any official documents for ownership of the plantation.

#### **Case 5: Cashew Plantation on hill slopes (Phatkijam Watershed)**

Phatkijam has a heterogeneous population in which the local Scheduled Caste (SC) group known as Dombas form a majority that dominates the Adivasis (Scheduled Tribes or STs). More than 50% of the land in the watershed is designated as state-owned land, even though all these areas are customarily cultivated by local farmers.

Cashew plantations are being taken up on 51 ha on the hill slopes under a watershed development project through the National Watershed Development Programme for Rainfed Areas (NWDPR), and a plantation scheme under the Integrated Tribal Development Agency (ITDA). In the ITDA plantations, as per government norms, the beneficiaries will only be tribal families and they will be given usufruct rights following plantation and maintenance for three years by the executing agency. The lands for these plantations were delineated as per the legal status of land (cultivable or uncultivable waste land) in the official Record of Rights. Unfortunately the land so chosen has plots traditionally tilled by poor scheduled caste families. These SCs complain that they are not even allowed to engage in wage labor in these plantation projects, since the project is for tribal development. After three years the plantations will be handed over to ST beneficiaries, effectively evicting the SCs. This is going to create conflict and division between the communities. In this case unlike Kudkitunda,

resolution will be difficult since the conflict crosses community lines. Ultimately, the process is pitting poor SC against poor ST.

Under the watershed project the cashew plantation has been taken up in consultation with the stakeholders and the lands have been identified through a participatory process. But looking at the customary ownership on the upper slopes and legal ownership in the lower slopes, it seems there is some influence of relatively powerful SC families as they cultivate most of the land taken for plantations under customary rights. As per the present policy regime, it is expected that this plantation will be distributed to the poor and landless. Most likely, this process too will lead to conflict as the present SC customary owners are not going to easily give up or share their rights with poor and landless from other communities.

#### **Case 6: Marginalizing the marginalized (Maliguda-Gunji)**

The DANIDA funded watershed project supported forest protection in Maliguda Village (consisting of Mali Community). Earlier, a few Adivasi (ST) families had settled in a hamlet called Gunji on the upper slopes of Maliguda. These Adivasi immigrants practiced shifting cultivation in forests on revenue land lying immediately above Maliguda. There used to be some mild conflicts, but the Maliguda villagers allowed the STs to cultivate the land.

With grant support from the watershed project, the Mali people got interested in forest protection to ensure availability of fuel and construction timber as well as continuous flow of water in a stream on the hillside. As a result, with persistent effort, they evicted the tribals of Gunji from this forest and no longer allow them to cultivate these lands. The Gunji tribals had to shift to other slopes further up in the hills. These slopes are still within the boundary of the same revenue village, so there is a chance they may be evicted from that area also.

#### **Case 7: Rights over Plantations? (Phuljhola Village)**

In a plantation raised by the Forest Department in the late 1980s, a village forest committee was created for protection and upkeep of that plantation. There was a verbal commitment from the Forest Department to give the committee a share of the return from the harvest and thus the villagers were strictly protecting the forest. But when the harvest

took place in 1996-97, no such share was given. The villagers have now completely destroyed the coppice crop.

### **7. Analysis**

Externalities in watersheds are embedded in the larger social, economic, cultural context. By their very definition, externalities emerge when the existing system of rights is unable to take into account the costs and benefits arising out of economic processes. Thus economists see externalities as obstacles to be overcome by bringing the externalities within the system of rights.

In the context of the case studies discussed, it has become clear that most of the important externalities with serious implications for sustainability and equity arise from the divergence between the customary and formal rights systems, as the formal rights system has failed to capture the actual land use system in its complexity. This divergence frames the externalities identified in Kudkitunda, Phatkijam and Malkarabandh.

The major externalities in the context of tenure systems in the study watersheds arise from the fact that shifting cultivation was considered illegitimate, even though it was extensive and an important source of livelihood to the tribal communities, covering most of the area under forests in undivided Koraput (Pattnaik 199\_). Lack of recognition of shifting cultivation meant that all the shifting cultivation areas on the hill slopes were declared as either revenue land or as Forest Department land in the Survey and Settlement, and the rights of shifting cultivators were overturned. This lack of recognition was based on a strong belief that shifting cultivation is highly environmentally destructive, as evident by the various government documents and circulars.<sup>24</sup>

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<sup>24</sup> To a great extent, this seems to be an outcome of seeing shifting cultivation areas as forests instead agroforestry spaces highly modified by human agency. This aspect is discussed in historical context of West Bengal and Bihar by Sivaramakrishnan and for MP by Rangarajan (Sivaramakrishnan, 1999, Rangarajan, 1996). To quote the Koraput Survey Report “Shifting cultivation commonly known as podu cultivation is causing incalculable damage to forest growth and soil conservation” (GOO, 1965) or a Government Circular “the practice is thus ruinous and wasteful, dries up springs in the hills, causes soil erosion, destroys forests, affects rainfall and deprives the people from the benefits of forests and forest produce (GOO, 1980) or a more recent one “Podu cultivation practiced by tribal communities in certain areas of the state has been since long recognized as both an inefficient and a harmful practices, which operates against the interest of the practitioners themselves’ (GOO No 23183/SSD date 2<sup>nd</sup> July 2002). Thus shifting cultivation (podu) has been seen as an unmitigated evil to be eradicated. However, there has been little actual research to substantiate the “evil” effects of shifting cultivation in context of Orissa. However, much of the recent literature on shifting cultivation in North East India, South-east Asia and Africa brings out that in many ecological contexts, it is a highly sophisticated and sustainable agricultural system.

However, it has been impossible for the State to eradicate shifting cultivation, despite many efforts and initiatives, through coercion or incentives. Increased population and creation of Reserve Forests and plantations have meant that the area of shifting cultivation per household has declined, leading to intensification of shifting cultivation and consequent degradation of hill slopes. The high level of displacement in Koraput district by reservoirs and other development projects as well as alienation of tribal owned lowlands through debt mortgaging may also have contributed to this process. There is little research to understand the processes of ecosystem degradation and its links with shifting cultivation in the region.

### **7.1 Plantations with usufruct rights as a strategy to reduce shifting cultivation**

As introduced above, the Government has a policy of providing usufruct rights over cashew and other plantations (rubber, mulberry, sisal, etc. under different schemes) on state-owned, non-Forest Department lands to individual poor households. However, as evident from the situation in Kudkitunda and Phatkijam, little thought has gone into aligning the allocation of these areas with the existing customary ownership rights, leading to conflicts and poor survival of plantations. There seems to be no review of the processes and outcomes of such allocation of rights and their effectiveness. We observed that in many cases, innovative cashew-based agroforestry systems have evolved at farmers' level, i.e. the shifting cultivators are using the space between plantation trees for taking annual crops (as in Kudkitunda), and sharing mechanisms have emerged between customary land owners and the formal allottees. There is little documentation of such emergent systems. On the other hand new systems of plantations are being imposed upon people, for example the ITDA's ambitious coffee plantation program.<sup>25</sup>

The Forest Department has also been taking up forestry plantations on Revenue Land. In the late 1980s and early 1990s, the Social Forestry Project promoted village woodlots on revenue lands on a large scale. The proceeds from harvesting these plantations were to go to the Village Forest Committee (as per the Orissa Social Forestry Rules formulated under the Orissa Forest Act, 1972). However, the current situation in this regard is not clear. The Forest Department is also carrying out forestry plantations

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<sup>25</sup> Please refer footnote number 16.

under the Revised Long Term Action Plan (RLTAP) funded by GOI. The rights situation on such plantations is again not clear. The reaction of local people to forestry plantations on Revenue land vis-à-vis horticulture plantation is not being gauged – our preliminary investigations suggested that forestry plantations are not welcome. In addition, it seems that land under forestry plantations will be converted to the category of Forest Department lands, making it off-limits to local people as per the Forest Conservation Act, 1980.

Revenue Land, on the other hand, is available for providing usufruct rights to the tribal people and can be used for various alternative livelihood options like cashew or other plantations – many of which allow continuity of intercropping. We also observed that the increasing importance of cashew as a cash crop with a ready market is attracting shifting cultivators, many of whom are now planting it in hill slopes customarily cultivated by them (Kudkitunda and many villages in Koraput district).

However, large areas of land under shifting cultivation have been classified as Forest Department land, which, in several of the watershed case studies, formed a major chunk of the area and yet were devoid of trees (except in Malkarabandh where villagers are protecting a eucalyptus plantation and natural forest regeneration). This seems to be common throughout the study region. As per the FCA, 1980, these areas cannot be diverted to any non-forestry purpose and therefore cannot be used for either cultivation or horticulture. Thus the possibility of using these areas for livelihood generation activities is seriously limited. The Forest Department has been carrying out plantations under various schemes on these Forest lands. Most of these schemes have no provision of sharing of produce with local communities (e.g. the eucalyptus plantations in Malkarabandh and in Phulajhola described in cases 1 and 7). Recently, the Forest Department has started forming Forest Protection Committees and started doing plantations on Forest Department land under the Forest Development Authority Program. Under these schemes, 50% of the final produce from the plantations has to be shared with the local Forest Protection Committee. However, at no place within the study area does such sharing appear to have taken place. Also, no cases of involvement of the Forest

Department in watershed development projects were observed in the study area in spite of a very clear prescription in the government watershed guidelines that they should be.<sup>26</sup>

Thus conversion of traditional shifting cultivation areas into state property has led to creation of externalities for the local people, especially in the case of conversion to Forest Department land. These externalities have important consequences for their livelihoods and wellbeing, as well as their social and cultural lives. These conversions took place because policy makers perceived shifting cultivation as causing environmental destruction, i.e. creating environmental externalities that harmed public interests. However, the policy of conversion to Forest Department land seems to be based on a failure to understand that this approach does not succeed in changing local land use practices, and if anything discourages long term investment in land improvement while encouraging short term approaches like shifting cultivation.

## **7.2 Grassroots initiatives to manage externalities**

We also observed that with intensification of shifting cultivation, in many areas the cultivators have started developing stone bunds and/or retaining vegetative growth strips to stabilize the slopes. As seen in Kudkitunda, tribals are also slowly starting to plant cashew and *Simaruba glauca*<sup>27</sup> trees on slopes. This implies a process of local innovation that can lead to sustainable intensification of agriculture on hill slopes. However, lack of rights on these lands is an important inhibiting factor in investing time and labor to develop and maintain them. There is no study of these local practices and no attempt to understand and build on observed initiatives. Understanding these changes and processes is needed to facilitate sustainable intensification and speed up the process through suitable incentives.

One also needs to understand that the same tribals accused of destroying hillsides through shifting cultivation create new land out of streambeds through high quality soil and stone works. They tame the raging torrents in this region with high intensity storms and convert gullies to terraced paddy lands, with sophisticated water management system

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<sup>26</sup> Please refer footnote number 18.

<sup>27</sup> Introduced from El Salvador, this tree also known as 'King of Oilseed' tree with an oil content of 58% in its seed butter, which is edible and tastes like ground nut oil, has been now finding acceptance in many tribal villages including Kudkitunda, where villagers prefer domestic extraction and consumption to purchase other oils from the market, resulting in net savings. It is a promising tree for future plantations for usufruct sharing!

at a much lower cost than the science of soil conservation would prescribe. They do this without reducing soil fertility as happens in cut and fill systems of terrace formation. This shows the depth of understanding and adept skills of soil and water management of these communities. However, there seems to be no effort to understand the dynamics of the Jhola system and its linkages with hill slope cultivation.

Another important local initiative is the increasing trend of protecting and regenerating forest patches. Many communities have started regenerating forests in this manner – the major reasons quoted are scarcity of small timber and fuel wood, reduction of water flow in streams, greater sand casting, reduction of nutrient content in soil and water, etc. Protection relies on rotational watch and ward (each family contributes one member for rotational watch) or paying a full time watchman. Protection of forests on slopes may create its own externality in terms of displacement of shifting cultivators; however, as seen in Malkarbandh, these problems can be resolved in homogeneous communities through negotiations and incentives. Intercommunity conflicts as in Maliguda-Gunji are more difficult to resolve and may lead to major disruptions in affected parties' livelihoods, with serious equity and sustainability implications. The Joint Forest Management program does not take such externalities into account.

### **7.3 Implications for watershed development:**

Unclear rights and tenure reduce the effectiveness of watershed development projects and the extent to which they can fulfill their objectives of conserving natural resources, increasing productivity, and alleviating poverty. For instance, even though most Forest Department lands in the catchments are degraded, watershed projects can do little to treat these vulnerable areas. Much of the most vulnerable upland area is Forest Department land or Revenue land under permanent or shifting cultivation. Under the status quo such land is permanently degraded; a technically better and socially more acceptable treatment for these lands would be to encourage perennial vegetation that supports local livelihoods, intercropped with annual crops. Even providing protective measures in support of purely annual crops would be a major improvement over the status quo. On steep slopes this would imply stone, earth and/or vegetative barriers or hedgerows to reduce soil and moisture loss. On Forest Department lands, however, such approaches would be illegal.

In Phatkijam watershed, shifting cultivation on Forest Department lands in upper catchments causes serious degradation. However, there is no scope for watershed projects to carry out suitable treatments on these lands. Problems also arise when water channels or check dams need to be constructed in Forest Department Land, as Forest Department can raise objections to them.

Similar legal restrictions can apply on revenue land, as in the example of Kaveribadi Watershed, where lack of permission from the Tahasildar forced a change in design from a water storage structure to a diversion weir. Watershed projects have taken up plantations on government land without paying much attention to the tenurial issues involved. Thus in Kudkitunda, forestry plantations were taken up on government wasteland (under shifting cultivation) without visualizing the problems that would arise in harvesting the trees. In Phatkijam, watershed development projects have taken up cashew plantation on uncultivable wastelands, part of which previously were customarily claimed by large farmers who will not be eligible for patta on the plantation. This will lead to conflict between the customary landowner and the person to whom the patta will be given.

Government agencies implementing watershed projects do take permission from the local revenue inspector before taking up plantations on Revenue land. However, in most cases the watershed project has not taken the next step of providing pattas to individual households except in Nowrangpur district, where the District Collector took the initiative to do so. In other watersheds, for example Malkarabandh, informal resolutions have been passed in the watershed committee meetings to allocate rights over plantations, but these have not been formalized legally.

Regeneration of forest through protection, as practiced in villages like Malkarabandh and Maliguda, is a cost effective means of protecting upper reaches that have the capacity to regenerate. However, in both these cases, there were losers from this practice. In Malkarabandh, the losers were compensated by the villagers through donation of irrigated lowland, whereas in Maliguda-Gunji case, since the losers (tribal shifting cultivators) were from a different community, they were evicted without compensation. Watershed projects often do not consider such problems, but they raise crucial livelihood issues for the most vulnerable sections and need to be taken care of.



## **8. Conclusion: What needs to be done?**

Divergence between formal and informal rights systems seems to be one of the most important constraining factors for both environment and livelihoods in the study area. The situation seems to be similar in other tribal dominated Scheduled areas in Orissa. However, there has been no effort at understanding the implications of this divergence and how they interact with social, cultural and economic variables to create unsustainable futures and high poverty in these areas. The following issues need to be understood more clearly to ensure proper design of development interventions:

- Identifying, surveying and quantifying the divergence between the actual land use and the legal land tenure system, and devising policy measures to reduce these divergences equitably and sustainably.
- Assessing the impact of classification of most of the land as state-owned, especially Forest Department land, even though these areas are being utilized by shifting cultivators.
- Understanding the ecological and economic dynamics of land use in these areas, including linkages between the shifting cultivation and Jhola cultivation.
- Identifying and documenting indigenous technologies and processes used by the local farmers to address the emergent problems of land degradation and soil erosion, and developing incentive systems which can accelerate application of innovations.
- Understanding the extent to which land use restrictions inhibit adoption of indigenous land improvement methods.
- Understanding the changes in the land use in the area over time and the factors driving these changes.
- Documenting the long term impacts of the state government's development strategies, including horticulture plantations and rights given on these plantations.

The most urgent problem that needs to be addressed is the issue of Forest Department lands, given that the FCA, 1980 makes this an irreversible category. By its definition, shifting cultivation is forest fallows. Supreme Court's interpretation of "forest" in the FCA 1980 in its landmark Godavarman case (Government of India 1996)

says that any land which was classified as Forest in any official record or has natural forest growth on it is Forest Department land, and cannot be converted to any other land use. This has automatically ruled out all forms of cultivation including perennial horticulture on such lands, even though such systems may provide the best hope for sustainable natural resource management on these lands. The State Government has taken no stand on this issue. Given the situation in the Scheduled areas of Orissa, this lack of initiative is bound to create massive unrest and upheaval as the strict interpretation of Supreme Court is sought to be implemented in field. Therefore it is absolutely important to investigate the situation and come up with suitable policy prescription.

Some of the tentative policy recommendations we can point out are:

- Revised survey and settlement should be taken up for the government land in tribal areas on a priority basis wherein the shifting cultivation land can be regularized in name of tribal cultivators to set the stage for promoting more sustainable landuse. This needs to be seen as a development intervention rather than an administrative function. Part of the development funds coming to the districts should go into streamlining the Revenue Department and the Survey and Settlement Department to be able to do these operations. A beginning can be made in watershed projects, that this could be the best entry point activity.<sup>28</sup>
- Development funds should also be used to identify and survey the cultivation of Forest and Revenue Land, and investigate the possibility of regularizing these cultivations. There are already available circulars which can help regularize cultivation on Revenue Land, including that on steep slopes under shifting cultivation.
- A review of notification of Forest lands needs to be taken up to understand if correct procedures have been followed, especially in respecting the rights of the tribal communities. The fact that large areas of traditional shifting cultivation areas have been notified as Forest Department land and its implication on the livelihoods of the tribals needs to be acknowledged in public and in the Supreme Court, which is still dealing with the forest eviction case.

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<sup>28</sup> Most watershed projects begin with “entry point activities” that address some compelling need in the village.

- Market support interventions need to be taken for crops like cashew, vegetables etc. grown in the area. The possibility of cashew grower cooperatives could be explored. Before taking up coffee in such a massive scale the market implications and consequent infrastructural and institutional arrangements must be facilitated. Orissa would be ill-advised to follow the example of Vietnam, where massive promotion of coffee in the 1990s led to oversupply in the world market, a crash in the world price, and severe poverty for coffee growers in Vietnam and worldwide (Stein 2002, Oxfam and ICARD 2002).

Thus major policy initiatives need to be taken up to resolve the problems in this area and research is needed to support and guide policy prescriptions. Meanwhile, large investments are being made in watershed development and related natural resources programs, without taking into account these issues. In the section below we summarize some of the changes that can be made in the watershed development approach in the region to help address the issues.

### **8.1 Watershed Development Programs**

We suggest the following changes in the watershed development framework for the region:

- The initial entry point activity and survey should include a “rights regime” survey in the watershed in which the official and the informal rights and tenure situation should be mapped out. This baseline survey could include cases of cultivation on Forest Department land and revenue land and ascertaining the possibility of legalizing the cultivation within law. Such a survey should also find out the land under various kinds of debt mortgage. Officials of the Revenue Department and Forest Department (if Forest Department lands are present) at the local level must be involved in the process of the rights survey.
  - The rights regime survey should also include a survey of preexisting rights provided under various beneficiary schemes and their current status.
  - Plantation activity plans should have clear-cut identification of strategies for providing usufruct rights or ownership rights.
  - The project should also identify the land that can be formally transferred to the customary cultivators under the current policies. In cases where this is not possible,

the project should facilitate the negotiation between the customary owners and the revenue department.

- Training and capacity building programs should be taken up to help the watershed development team members become familiar with land and forest tenure issues.

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