

Conservation Reserve and Community Reserve in Odisha: A Study on the Potentials and Initiatives Taken so far

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This report titled **Conservation Reserve and Community Reserve in Odisha: A Study on the Potentials and Initiatives Taken so far** is an outcome a series of case studies, with collection of information through RTI, other sources like web-portal & literatures, discussion with forest officials, and its detailed analysis.

One of the challenges faced during compilation of this report was the lack of availability of a consolidated information about the status of Community Reserve and Conservation Reserve in Odisha and initiative taken so far. Even though RTI was used to extract relevant information from the office of the PCCF(WL) the queries made by the applicant(consultant) were not properly responded to in some cases thereby leaving many of the same only incompletely answered.

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As the editor of this report I have not been able to devote much time because of my busy schedules and other engagements, which in fact took few more months in actual release of the same. Still I hope the report will be very useful atleast in view of the absence of consolidated information about the status of Community Reserve and Conservation Reserve in the state.

Last but not the least I thank our consultant Sri Prasant Mohanty for getting involved in his assignment beyond the professional spirit so as to make the study a qualitative one.

Bikash Rath
Sr. Programme Manager

ABBREVIATIONS

BMC	Biodiversity Management Committees
CBD	Convention on Biological Diversity
DPF	Demarcated Protected Forest
ESA	Ecologically Sensitive Areas
FRA	Forest Rights Act
JFM	Joint Forest Management
NH	National Highway
PA	Protected Areas
PCCF	Principal Chief Conservator of Forest
PRF	Proposed Reserve Forest
VSS	Vana Surakshya Samiti
WL	Wildlife
WLPA	Wildlife Protection Act
WLS	Wildlife Sanctuary
WSHG	Women's Self Help Groups

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Introduction

There are Protected Areas intended for conservation of wildlife, which are proving to be islands of conservation. The Protected Area approach keeps local people away from benefits of conservation and imposes cost of conservation on them, banishing their fundamental rights, resulting into hostility of local community towards conservation affecting the whole goal of conservation. India made commitment to CBD that by the year 2007 it would ensure fully participatory mode of Protected Area management. While nowhere in the country a partial mode of participatory Protected Area Management had been formally experimented or established, the amendment to WLPA in 2002 for constituting Conservation Reserves was much appreciated with the belief that at least participatory management of Conservation Reserves that lie outside the Protected Area boundary would build up systems for introducing such management practices in Protected Areas. However, in practice the initiatives towards identifying conservation reserves seem to have been very much uncared for.

In this wretched condition, there is a strong ray of hope, proving potential of communities in conservation. In Odisha we can find hundreds of examples where communities are actively protecting and conserving forest patches thereby helping in the conservation of biodiversity. Examples of wild life protection by communities are relatively few but not rare(annexure-3). These efforts cover conservation of vast array of ecosystems existing on private land, community owned lands, lands whose ownership is disputed, as well as government owned lands. These community led initiatives have created habitat spaces managed with great care that have enough merit to qualify for declaration as Community Reserves under scope of the WLPA amendment Act 2002. However, irony is that no significant initiatives have been taken towards at least making assessment for their potential to be declared as Community Reserve.

Conservation Reserves and Community Reserves have great potential for protection of biodiversity, maintenance of ecological services and gene flow of wildlife as these areas function as corridors between important wildlife habitats. Thus these reserves can be sighted as community based conservation models. They synergize the links between traditional agricultural system and forest ecosystems harmonized by interactions among the agricultural biodiversity and wildlife, and thus provide larger landscape level integration. Although there have been legislations (WLP Amendment Act 2002) to delineate and declare such spaces as Conservation Reserves or Community Reserves for protection and maintenance of local biodiversity with participation of local communities, yet unfortunately, neither has there been any significant initiative from the forest department nor any recognition given to these initiatives formally by the state as areas important for local economies or habitats for wildlife conservation. Lack of such recognition is resulting into destruction of more and more such areas because of mining, commercial leases, urban expansion and other development projects.

Till the year 2002, the Wildlife (Protection) Act had little to encourage or mandate peoples' participation in conservation, or to recognize areas conserved by communities. Two new categories of Protected Areas were introduced into the Wildlife (Protection) Amendment Act of that year, namely Conservation Reserve and Community Reserve. Acknowledging the fact that peoples' participation and traditional management systems have enormously contributed to

forest and wildlife conservation in India, such a new direction to conserve patches as people conserved Protected Areas carried lot of meaning. It was expected that having declared certain areas as Conservation Reserves and Community Reserves and building up institutions around such Reserves for better protection and management there would be new learning for forest and wildlife management, and that such learning may pave way for Joint Protected Area Management. While the Protected Area Management alone by Forest Department in a more custodial way curtailing the traditional rights of the local communities on extracting resources from PAs is adding up institutional, managerial and knowledge conflict issues, it was expected, the management of conservation and community reserves would add up new elements that may be incorporated in the framework of participatory Protected Area Management¹.

There have been continuous debates and demands from civil society at large who have been raising the issue of tribal or forest dwellers inherent rights on forest resources, under whatever category the forest may have been officially recorded, and the Forest Rights Act, 2006 strengthened their stand as it provided for adequate attention to the rights of local communities even inside PAs. The Government of India therefore had to issue protocols/guidelines so as to ensure that the mandate of FRA is honored duly. The latest version of the protocol for Critical Wildlife Habitat(CWH) areas provides for an option for the eligible local communities to stay back inside the CWH with a modification of their rights so as to ensure an effective wildlife management.

The Joint Forest Management system provides for community participation in PA management in the form of eco-development committees (EDCs). The counterparts of such committees outside PAs are called VSS(Vana Surakshya Samiti) in Odisha. However, whereas the VSS members were entitled for a lot of privileges in respect of collection of forest produce, the EDCs did not enjoy that simply because the Wildlife Protection Act doesn't normally allow this. The Forest Department therefore tried to provide some alternative benefits to the EDCs but these were often quite poor and less encouraging which was why the EDCs hardly took pride in their work. There was also no sincere and state-wide attempt to implement the Periyar model here. In fact the EDCs existed more for a namesake in many cases and were hardly active on their own. In the revised JFM resolution of 2011, that incorporated the principles of Forest Rights Act and PESA, the EDCs have been allowed for collection of all those forest produce that are allowed to VSS. Moreover, the role of Palli Sabha has now been recognized which may be used effectively for greater involvement of the community in PA management.

However, there is yet to be established a full satisfactory participatory PA management model partly because the orthodoxy in approach of the concerned authorities, and partly because of the limitations of the present legal framework.

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DILEMMA – DIVERSE INSTITUTIONAL DENOMINATIONS VRS. SIMILAR LEGAL PROVISIONS

Conservation Reserves

The WL(P) Amendment Act, 2002 contains the following provision regarding establishment of conservation reserves:

Declaration and Management of a Conservation Reserve

"36A. (1) The State Government may, after having consultations with the local communities, declare any area owned by the Government, particularly the areas adjacent to National Parks and sanctuaries and those areas which link one protected area with another, as a conservation reserve for protecting landscapes, seascapes, flora and fauna and their habitat:

Provided that where the conservation reserve includes any land owned by the Central Government, its prior concurrence shall be obtained before making such declaration.

(2) The provisions of sub-section (2) of section 18, sub-sections (2), (3) and (4) of section 27, sections 30, 32 and clauses (b) and (c) of section 33 shall, as far as may be, apply in relation to a conservation reserve as they apply in relation to a sanctuary

Conservation Reserve Management Committee

36B. (1) The State Government shall constitute a conservation reserve management committee to advise the Chief Wild Life Warden to conserve, manage and maintain the conservation reserve. (2) The committee shall consist of a representative of the forest or Wild Life Department, who shall be the Member-Secretary of the Committee, one representative of each Village Panchayat in whose jurisdiction the reserve is located, three representatives of non-governmental organisations working in the field of wild life conservation and one representative each from the Department of Agriculture and Animal Husbandry.

(3) The Committee shall regulate its own procedure including the quorum.

Conservation reserves are meant to elicit peoples' opinions in declaring government-owned lands protected for wildlife conservation. This category does open up some space in the law for peoples' participation in wildlife conservation. Consultations with local people before declaring an area a conservation reserve is mandatory, as opposed to the situation in other protected areas such as national parks and sanctuaries. Considering that local people do not generally become aware of the changed legal status of an area even after years of it being declared a national park or a sanctuary, any consultation is a step towards some form of democratic decision making.

Community Reserves

Declaration and Management of Community Reserve

36C. (1) The State Government may, where the community or an individual has volunteered to conserve wild life and its habitat, declare any private or community land not comprised within a National Park, sanctuary or a conservation reserve, as a community reserve, for protecting fauna, flora and traditional or cultural conservation values and practices.

(2) The provisions of sub-section (2) of section 18, sub-sections (2), (3) and (4) of section 27, sections 30, 32 and clauses (b) and (c) of section 33 shall, as far as may be, apply in relation to a community reserve as they apply in relation to a sanctuary.

(3) After the issue of notification under sub-section (1), no change in the land use pattern shall be made within the community reserve, except in accordance with a resolution passed by the management, committee and approval of the same by the State Government.

Community Reserve Management Committee

36D.

(1) The State Government shall constitute a Community Reserve management committee, which shall be the authority responsible for conserving, maintaining and managing the community reserve.

(2) The committee shall consist of five representatives nominated by the Village Panchayat or where such Panchayat does not exist by the members of the Gram Sabha and one representative of the State Forests or Wild Life Department under whose jurisdiction the community reserve is located.

(3) The committee shall be the competent authority to prepare and implement the management plan for the community reserve and to take steps to ensure the protection of wild life and its habitat in the reserve.

(4) The committee shall elect a Chairman who shall also be the Honorary Wild Life Warden on the community reserve,

(5) The committee shall regulate its own procedure including the quorum."

These can only be declared by government on private or community lands. Therefore they can be relevant to only a few states like Nagaland, or private forest areas in the Western Ghats, or wildlife that may exist on agricultural lands such as blackbuck. It may be possible to argue that the term 'community lands' should include government lands (particularly those that are being used as common lands), and big patches of private forests as in Kerala. In general, though, it is unlikely that such a broad interpretation will be given by most states. Moreover, in its current form the Act does not recognize existing systems and institutions of management and has a uniform prescription for the composition of the local institutions. This would straitjacket a very diverse institutional reality. Finally, there are no guidelines on how these areas are to be declared.

However, most of the potentially rich biodiversity areas conserved by people since ages qualifying to be declared as conservation reserves or community reserves are under direct control of local people who may not be very happy with the legal arrangement for constituting conservation reserves or community reserves. These lands may have been recorded in the name of government² but the local people have worked out management and regulation institutions, and a high degree of *de facto* control therein. It is unlikely that these established institutions would agree to be a part of conservation reserve where their only role in decision-making would be to advise the chief wildlife warden of the state, who may or may not agree to the suggestions – is a standing dilemma. Additionally, the conservation reserve management committees (CRMC) to be established under the Act mandates representatives from *Panchayats* in an area rather than people actually conserving and managing the area. This could be a good category to initiate conservation in areas where it may not be happening already.

National Tiger Conservation Authority (NTCA)

Another amendment in the Wildlife (Protection) Act in 2006 has resulted in setting up of a National Tiger Conservation Authority (NTCA). This was a result of the dwindling population of Tigers in India. As one of the reasons for decline in tiger population has been identified as lack

² And this reminds of the faulty survey policy and practice adopted since the British period.

of peoples' participation in PA and wildlife management, the Authority has been mandated to explore ways of facilitating peoples' participation in wildlife management. This may help in bringing about a change in the general exclusionary model of conservation, thus paving way for the recognition of reserves in buffer zone of tiger reserves, though considerable advocacy will be needed to make this happen. The actual impacts of this amendment are yet to be seen.

Biodiversity Heritage Sites

The Biological Diversity Act 2003 encompasses all elements of biological diversity, domestic and wild, and provides for protection of all kinds of ecosystems. One of the provisions of the Biological Diversity Act 2002 includes creation of Biodiversity management Committees (BMC) at the village level. The National Biodiversity Authority and the State Biodiversity Boards established under the Act are required to consult local BMCs while taking decisions related to the use of biological resources and knowledge associated with such resources. This provides a space for local communities to participate in the governance and decision-making related to biological diversity to a certain extent. The BMCs are expected to be local institutions for the management, protection and recording of local biological diversity and it may be possible to give existing or new community conserved areas being conserved for agricultural or wildlife biodiversity as Biodiversity Heritage Sites (BHS).

The National Biodiversity Rules under the BDA, formulated in 2004, failed to adequately empower the BMCs and thus the local communities to manage, use and conserve natural ecosystems. Under the rules, the BMCs are limited to recording the local knowledge and to help the state- and national boards to grant permission for the use of biological resources and knowledge associated with it in their areas. They also have a uniform institutional structure, which would be inappropriate in the context of community and conservation reserves. Therefore, as per the rules, the space to provide legal backing to conservation and community reserves is very limited. Absence of a comprehensive guideline for declaration of BHS has been one of the causes of delay in implementation of the provision. As some of the states like Madhya Pradesh and Sikkim have taken initiatives to form rule systems for BHS they may act as important references for designing framework for management of community reserves and conservation reserves, once they are declared. However, in Odisha the State Biodiversity Rules being still not notified finally even the BMCs have not been formed, not to speak of the recommendation to declare the Mandargiri hills as a BHS.

Village Forests

Section 28 of Indian Forest Act 1927 has a provision for declaring village forests (VF), under which villages get powers similar to the forest department. But despite being in existence for eight decades, this provision has hardly been implemented. No village forest exists except for a few sites in Uttarkhand, Karnatak and Mizoram. If implemented this can be a strong category to support community and conservation reserves. Many potential sites that qualify for community reserve are not just areas under strict community protection but also areas from where biomass needs are met in a regulated manner. The village forest category entails handing over government-controlled reserve forests to local villagers for conservation and sustainable use and hence suits the purpose well. There are cases where many JFM villages have been demanding that theirs may be declared as village forests. The Gol's steering committee on

Environment, Forest and Wildlife for the Eleventh Five Year Plan (2007-2012), has very strongly recommended that the village forests category be used for giving legal backing to existing JFM sites as well as other initiatives of the communities towards conservation of forests.

Odisha has a Village Forest Rule of 1985, but with critical limitations:

“xxx the rules in Odisha are so framed that the provisions for village forest can be utilized only for the area under social forestry although this has not been clearly stated. The nature and content of the rule are so, evidently because the primary intension was not to provide a proper legal framework to voluntary efforts of the village communities in the area of forestry being done on a large scale. There are some major issues like larger participation of villagers in managing their affairs, downward accountability toward village, ownership of village over resources, recognition of customary and traditional practices, larger involvement of stakeholders in claim settlement process, resolution of disputes and conflicts and clearly defined role of forest and other government officials, which are not clearly stated or laid down in the rule but have their own significance in larger process of decentralization and management of forest.” (Panda 2009)

There are some forest patches inside the village areas, and these are called ‘gramya jungle’ literally meaning village forest, but these have not been declared under the Village Forest Rules of 1985 and hence have not been formally recognized under the Odisha Forest Act.

CFR under FRA

The CFR title under FRA 2006 is an outcome of long-standing demands from indigenous/tribal and other forest dwelling communities for recognition of their rights on forest lands occupied by them and resources or on which they depend for subsistence. The Act mandates establishment of such rights for tribal and forest-dependent communities.

The Act allows for a greater role and empowerment of *Gram sabhas*³ in determining claims, managing forests that they have conserving traditionally, checking processes destructive of forest dwellers’ habitats and protecting traditional knowledge. It also allows for greater livelihood security for traditional forest dwellers who have been unjustly denied tenure, and mandates that the consent of the community is necessary for any displacement and relocation. It provides a greater possibility of community involvement in government PA and also to the conservation reserves on the exterior part of the PA. If applied meaningfully and transparently, this Act could lead towards many forms of co-management and to greater livelihood security than is possible in current management regimes of forests, including in the national parks and sanctuaries in India.

Additionally, community forest is category under which the local communities can protect any forest that they have been traditionally protecting and can establish locally suitable institutions, rules and regulations. This kind of flexibility is not available in other Acts to the conserving

³ Palli sabha in Odisha

communities, and could therefore be very significant in declaration and management of conservation and community reserves depending on the location of the community managed forests. However, this Act has an unclear relationship with existing forest and wildlife laws. The institutional arrangements for enforcement of the forest management and conservation provisions of the Act are also not very clear especially in relation to the areas where the forest department has existing jurisdiction. Although the rights would not rest on the local people, there is unclear provision to assign conservation responsibilities on right holders and *gram sabhas*.

Ecologically Sensitive Areas

Under the Environmental Protection Act 1986 provision has been created to declare stretches of ecosystems as Ecologically Sensitive Areas (ESA). Declaration of ESA would mean that certain identified commercial, industrial and development activities would not be allowed in the area. There are several ESAs in the country which have also importance in the context of conservation reserves and community reserves. The Act is a strong legal tool to fight against commercial and industrial pressures. However, communities know very little about this Act and how this can be used. Its relevance in the context of conservation reserves and community reserves needs to be examined.

In Odisha few ESA were proposed by the Forest Department and these were around some PAs, but no concrete action seems to have been taken for actual notification of these proposed ESA.

National Wildlife Action Plan (2002-2016)

The National Wildlife Action Plan provides significant space for community participation in conservation. Although it emphasizes community participation in PAs, yet its provision may also extend to conservation and community reserves when wildlife is in question. Some of the commitments of NWAP, apart from many other things, include:

- Evolving and prescribing guidelines for local community involvement in different management zones of PAs and adjacent areas. These guidelines would complement the WII guideline for planning PA management and ecologically sound community welfare programs. The implication of the provision may also cover the conservation and community reserves.
- Providing a range of incentives to conserve wildlife in different landscapes across different land and water uses: rewards and public honour for commendable conservation work and actions, granting of biomass and water resource rights for personal consumption for communities that have helped protect or restore wildlife habitats, employment in local conservation works, financial rewards and incentives to protect sacred groves, share in penalties extracted from poachers, share in tourism revenues, and incentives to move away from ecologically ill-advised activities.
- Encouraging people to help protect and manage wildlife outside PAs (including community conserved forests, wetlands, grasslands and coastal areas).

National Forest Policy 1988

This policy deals with conservation and management of forests, afforestation and with the rules governing peoples' access to government owned forests and their products. This policy placed

greater importance on using local forest resources to meet local peoples' needs rather than the industrial needs. It was under this that the government resolution on JFM was passed in 1990. Since then millions of hectares of forests outside PAs have been brought under JFM, aimed at regenerating degraded forests with the participation of local communities and sharing the benefits accruing from timber harvests from these areas with the local communities. Although with peoples' participation in management under JFM has resulted into restoring forests with endemic flora and fauna at many places, yet whether they would qualify for conservation reserves or community reserve, depending upon the location, is still a big question to be answered.

INSTITUTIONAL OVERLAPPING

As discussed earlier, there have been diverse institutional denominations created/suggested to facilitate conservation of landscapes, ecosystems, flora and fauna. In the name of creating space for community participation in forest and wildlife management, number of institutions have been crafted or carved out through legislations and policies. Even today, confusions are widening in the context of wider implications of terms like conservation reserve, community reserve, biodiversity heritage sites, community forest rights, forests under CFM, forests under JFM, Ecologically Sensitive Areas, Village Forests, Eco Development Committees, mandates of National Wildlife Action Plan, provisions of National Forest Policy – all of these pronouncing community participation in forest and wildlife management. There are many patches known with other names qualifying for conservation reserves and community reserves but such patches are also under formal processes of participatory forest management. Would they be converted to units like conservation reserve and community reserve by a single notification of the state government? If it happens so then how and in what ways the community participation and the privileges and sanctions will be different from the earlier process of same community-led management? - are certain crucial questions widening the dilemma. Hence, while looking around to identify patches and declare the patches as conservation reserve or community reserve as the case may be, the state would be confronted with many such institutional, managerial, administrative, ecological and benefit sharing issues. It is clear, at this point of time that assessing the potential of certain sites to be declared as conservation reserves or community reserves would not be that easy a matter in the absence of a clear guideline and management framework.

In the context of Odisha, such confusions are also there with the state government and its functionaries. On the flip side, the community awareness on the legal provisions and management denominations is the least. Now, bringing the state government and local communities to a single platform and facilitating the bilateral processes for declaration of conservation reserves and community reserves looms large. However, profiling certain areas for the sake of avoiding such confusions and to the benefit of management systems may provide insight and issues against declaring certain patches as conservation reserves and community reserves.

THE STUDY

On the backdrop of the above, a study has been initiated to assess the potential for community based wildlife conservation in Odisha especially in the context of conservation reserves and community reserves.

Overarching objective

The objective of the study was to identify and document potential areas in the state of Odisha for community-based wildlife management corresponding to the provisions for Conservation Reserves and Community Reserves under sections 36(A) to 36(D) in the Wildlife Protection (Amendment) Act, 2002, and to study the extent to which this potential has been utilized by the state, so as to make necessary suggestions in case there is an underutilization of this potential.

Specific objectives:

1. To identify potential areas in the state where community-based wildlife conservation is feasible.
2. To critically analyze the extent to which this potential has been utilized by the state, and also factors responsible for underutilization of this potential in five important potential areas.
3. To document the official processes & initiatives adopted so far by the state and central government agencies in context of utilization of the said potential, particularly to declare conservation reserves and community reserves.
4. To document the status of community-based wildlife protection in the declared/proposed conservation reserves and community reserves in the state in terms of legal recognition & limitations, history of wildlife management in the area, performance/achievements of the community initiatives, protection & management system, system of co-existence with wildlife, issues & challenges, future prospects, etc.
5. To assess the role or possible role of PRIs in successful utilization of this potential.
6. To make suitable recommendations so that the said potential can be better utilized.

Study areas and methodology:

The study areas have been chosen carefully and all the areas are in the state of Odisha. Available secondary information was gathered about the selected sites, the conservation initiatives, the socio-ecological processes of conservation and the ecology of the species conserved. Field work was conducted with communities in and around Karlapat, Balipadar, Kodbahal, Hadagarh and Maneswar and the primary observations on the area alongwith opinion of the communities were recorded. Realizing that there is no wider awareness of communities on the declaration of conservation reserves and community reserves, and no such information is available in public domain, a set of questions had been submitted to Forest and Wildlife Department making use of Right to Information Act. The response of the department substantiated the study.

Rationale behind selecting certain sites for the study

Site selection for study on conservation reserves

In strict adherence to the provisions of conservation reserve contained in the WLP Amendment Act 2002 two areas such outer fringe of Karlapat sanctuary and Hadagarh sanctuary have been taken for the study. These two areas are harbouring abundant wild diversity and are well known elephant corridors. Further, these also correspond either fully or partially to the proposed Ecological Sensitive Areas. Both the sites are potential elephant reserves too. Over the years wild life conservationists and human rights activists are on loggerheads with each other over the underlying PA management objectives and operational strategies. There have been hues and cries over the curtailing of local peoples' traditional rights over the PAs. Peoples' rights are, however, not much affected in the periphery of Karlapat and Hadagarh like many other PAs in the State. The physical location of the said PAs also offers the potential for conservation reserves as elephant corridors. Bothe the areas are tribal dominated where peoples' dependency on forests is well realized. However, with the growing man-animal conflicts in and around such PAs, and to provide enough corridors for a range wildlife like elephants, the potential of Karlapat and Hadagarh for declaration of conservation reserves holds ground. Further, as per the provisions under the Act, it may be possible to build up a participatory management model for management of conservation reserves for peaceful co-existence of communities, wildlife and wildlife habitats.

Site selection for study on community reserves

There are certain areas well known and well acknowledged for community efforts in conserving and protecting wildlife. Although the Act to a major extent restricts the community reserves to private lands and community lands, yet there are areas where village conglomerates have been protecting the wildlife over a landscape creating a conservation constituency. One well known example is the Bhetnoi-Balipadar Area where communities have been protecting the blackbuck religiously and caring for their propagation. Although a wildlife yet the herds behave as if they are domesticated. The distribution of blackbucks in the area extends to three forest ranges. Over the years, the local people have institutionalized the conservation of blackbucks by forming a society and framing rule systems for their protection which the communities abide by strictly. Thus it qualifies to be considered as a potential community reserve.

The other site taken for study is Maneswar in Sambalpur district where the threatened Soft Shelled Turtle are conserved and protected by the local communities. Although in a similar fashion there are places like Champeswar in Cuttack district, Narendra Kunda in Puri district and Golia in Ganjam district where communities started conserving and protecting the species, Maneswar has got wider recognition for the initiatives. The communities are conserving the species with a religious bias in a tank measuring around 3 hectares located near the famous shrine of Lord Shiva synonymous with Lord Maneswar. There are both religious and formal rules and regulations that by and large contribute to the conservation of the species. Maneswar has all traits to qualify itself to be declared as a community reserve.

The third site is Kodbahal in Sundargarh district where the villagers are protecting the deer in their own way and with their own religious belief, but are in good relations with the Forest Department and have accepted the JFM mode of forest management.

Case Study-1(Community reserve)

BALIPADAR – BHETNOI AREA FOR BLACKBUCK

Blackbuck (*Antelope cervicapra*), locally known as *Krushnasara Mruga*, *Bali Harina*, or *Kala Bahutia*, is considered to be the fastest animal in the world next to Cheetah. In the hoary past this mammal was found in dense forests, and endemic to most places in India they were a common sight and numerous. However, the degradation of habitats and indiscriminate poaching contributed to the reduction in the population. The animal is listed under the Schedule –I of Wildlife (Protection) Act, 1972 and designated as 'Vulnerable' in the Red Data Book (1994).

In Odisha, in the past, this species was occurring in Balasore and Puri Districts and very scarcely in Bolangir and Kalahandi districts and also in coastal sand dunes of Bhitarkanika and Kujang area. Up to the 1960s, the Blackbuck number was reported to be 1200 -1300. However, over the years their population has gone down and the estimated population in Odisha, at present, is about 800 to 900. In India the species is wide spread in Rajasthan, Gujarat, Madhya Pradesh, Tamilnadu and other areas throughout peninsular India. Their number reduced drastically between 1982 and 1993, from about 25,000 to as less as 10,000.

In the current situation, blackbuck in Odisha is confined to certain pockets like Balipadar – Bhetnoi and adjacent areas in the Ganjam district and, Balukhand – Konark wildlife sanctuary and coastal plains in Puri district. As a schedule - I animal, they are given attention for conservation; while the government has taken charge of their protection and management through constituting Protected Area in Balukhand – Konark, there are communities who have taken charge of their conservation in Balipadar-Bhetnoi. While the arrangement for conservation in Balukhand is largely on ecological and maintaining species population, the case in Balipadar –Balukhand is largely on socio-ecological and cultural-religious ground. However, looking at the present population of the animal in the State it is evident that the population in Balipadar-Bhetnoi makes a larger percentage of the total in the State. This is particularly important and critical in view of the fact that despite claims made by the Forest Department the actual existence and population of the animal in the Balukhand area is doubtful as the local communities hardly see any black buck there(Rath & Rao 2005).

In Balipadar-Bhetnoi area the favoured habitat of blackbuck covers about 58.402 sq km under Buguda and Aska Forest Range of Ghumusar South Division. This area with *Baghua Nadi* in the East, *Badanadi* (river) in the west and *Rusikulya* in the South is considered to be the most suitable habitat of the antelopes. The area comprises of small hills, scrub forests and cluster of paddy fields, with thickly populated villages. Due to shortage of fodder and construction of roads and canals, the animal have started moving towards *Gholapur*, *Kumpapada* village of Manitara section of Buguda Range. Some of the animals have also migrated towards *Sapuanala*, *Kholkhali*, and *Pangidi* villages under Buguda Range. In Aska Range the animals are found concentrated in the areas adjoining *Gadagada* PRF and meadows of *Narayanpur* and *Bhetnoi*.

The State Government conducted Blackbuck census in Balipadar-Balukhand in 1973, 1980, 1998, 2004, 2006 and 2008 by following scientific procedure. Results of 2004-census indicate that, there is 42% increase in the Blackbuck population over the last count (1998census), and out of three Forest Ranges, namely Buguda, Aska and Khallikote, Buguda Range alone holds 56% of the Blackbuck population at present. The trend through the various census periods indicate that the population of the animal is increasing in number, viz. 523 in 1973, 485 in 1980, 551 in 1998, 786 in 2004, and 1131 in 2006 with the sex ratio (M:F) maintained at around 1.2 except in 1998 when the female population went up making the ratio 1:4. The census result of 2008 indicates that there was 75.93% increase in population of Blackbuck in comparison to the Census done in 2006. This fact indicates that the community conservation initiatives have been contributing to increase in the population by controlling anthropological processes of habitat destruction through socio-religious norms, and by surpassing any sort of natural degradation through sort of domesticating the wildlife.

Though the Blackbucks are found scattered in more than 60 villages of Ganjam district, their concentration is mainly in the Bhetnoi-Dhanjia area in the south of Balipadar-Ramanda area in the north. Basing on the main concentration and willingness of local people an area of 58.402 sq km was proposed for the **Ghumusar Black Buck Community Reserve** in two distinct patches namely; the Northern Block of 10.718 sqkm and the Southern Block of 47.684 sq. km connected by a buffer central zone (Official information availed through RTI).

The Conservation History

Blackbucks are protected religiously by about 70 villages in and around Balipadar-Bhetnoi area coming under three forest ranges namely; Buguda, Aska and Kodala chiefly under the Ghumusar South Division in Ganjam district. Documentary evidence traces this protection to at least as far back as 1918. However, in last fifty years the protection measures have been further strengthened as the population of this animal was dwindling because of poaching and other reasons. It is held very sacred by the locals as they believe, the animal is a representative of *Goddess Laxmi* (Goddess of wealth) who visits their fields to reward them with bountiful harvests. Even when the animals graze over some farmer's standing crops, the farmer instead of feeling annoyed feels happy thinking that *Goddess Laxmi* visited his field. While no damage to crops is lamented or reacted upon violently (despite the fact that it is gradually leading to a



critical situation atleast in some places as the farmers now have either to suffer a significant crop loss or to abandon cultivation), the animals feel it a safe habitat favouring their conservation and propagation. According to another belief, the protecting villagers regard these antelopes are devotees of Lord Rama and Lord Krishna and thus it is a sin to kill them. The villagers also try to stop poaching of bucks; the poachers are either fined or beaten up.

About 60% of their habitat space is crop lands. They survive on fresh tender leaves, grass, crops, cereals, vegetables and leaves of shrubs and trees and hence reside in and around the villages with thin forest cover and grasslands. The local people also protect the young ones from predatory habits of wolf, hyena, jungle cat, jackal, pythons, wild pigs, feral dogs, etc.

There is strong institutional arrangement for the protection of these sacred animals. The conglomerate of villages has been federated to delineate the conservation constituency and have formed a Society governing the local norms for conservation. The village panchayat also plays very vital role in framing and implementation of rules and regulations for blackbuck protection. The village panchayat has also instituted a system of fines and awards to encourage protection of the buck.

Historical accounts also testify that the area was a known habitat of blackbucks and conservation processes had been initiated during the colonial period. In 1918, a British known as "Green saheb" and the 'Sardar' of the locality Sri Madeshi Chandramani Dora took initiative for protection of this species and published a notification in the Oriya news paper "Prajamitra" prohibiting killing of the Blackbuck.

Origin of myth

About a century ago there was a drought spell in the area. Villagers prayed for rain. They conducted all kinds of rites and rituals to satisfy rain god, prayed for mercy and benevolence of Goddess Laxmi. But rain was never to come. Suddenly people sighted a herd of blackbucks in their area. And there came rain. Fields became green, crops grew and smiles came back to the farmers. And that was the beginning, the beginning of deification of blackbucks by the locals and thus started the era of blackbuck conservation in the area. The area also got recognition with blackbuck.

Basing on the realization of community conservation initiatives and backed up by scientific research by Ministry of Environment and Forests in 1995-96, and observation on the rehabilitation of blackbucks in Bhitarkanika Wildlife Sanctuary during 1985-87 that ended up with discouraging result, and subsequent to the amendment in WLPA in 2002; the Government Of Odisha gave larger attention to Balipadar – Bhetnoi to develop it as a "Conservation Reserve" following the guidelines in the amendment. Although no significant efforts have been made as regards to maintaining and managing the area as "Conservation Reserve", yet the area is regarded as a potential Conservation Reserve or gene pool is for the larger sake of conservation of Blackbuck and maintenance of Man-Animal harmonious relationship.

Reportedly about 60% of the village agricultural land has been left fallow, because of lack of water, and crop damage by Blackbuck, yet anyone found hunting the animals is apprehended by the villagers. Increasing water scarcity is the main problem ahead of the villagers; the watershed management measures will not only accelerate agricultural production but also strengthen the efforts of villagers for black buck conservation.

THE INITIATIVES OF GOVERNMENT

Proposals of the Forest Department for declaration of the Community Reserve in this area date back to as early as 2004. The local communities seem to have followed the process suggested by the Department to meet certain formalities to effect this consideration and in 2005 they adopted a resolution requesting the government for declaration of the Reserve. The Forest Department thus proposed to the government to declare the area described in the schedule below which is under Buguda and Aska Tahsil of Bhanjanagar Revenue Sub-Division under Ganjam district situated with the longitude 19°38'S-19°51'N and latitude 84°39'W – 84°48'E to be a Community Reserve named as **“BLACK BUCK COMMUNITY RESERVE” of Ghumusar (South) Forest Division.**



Schedule

Though the Blackbucks are found scattered in more than 60 villages of Ganjam district, their concentration is mainly in Bhetnoi-Dhanjia area in the south of Balipadar-Ramanda area in the north. Basing on the main concentration and willingness of local people an area of 58.402 sq km was proposed for the **Ghumusar Black Buck Community Reserve** in two distinct patches namely; the Northern Block of 10.718 sq.km and the Southern Block of 47.684 sq. km connected by a buffer central zone. For details of Southern and Northern block boundary, please refer the Annexure-1.

The total composition of land within the Community Reserve includes; private land (10,041.661 ha), revenue land (1,675.069 ha), other land (972.630 ha) making a total of 12,689.360 ha. The State Board for Wildlife in a meeting held on 30.11.2004 endorsed the proposals for declaration of new sanctuaries depending on the levels of wildlife and human interference and observed, for example, Devi-Rushikulya mouth areas can be declared as conservation reserves and the black buck areas can be declared as community reserves.

However, the official procedure faced some hurdles particularly in view of some discrepancies observed in the details furnished. Like, the extent of community land and government land that was reported originally differed from that submitted in the latter phase⁴. Such discrepancies

⁴ As the community reserve is supposed to be declared on private or community lands only it was natural for the authorities to focus on the legal status of the land in the area. In his letter dtd. 6th August 2010, the DFO, Ghumusar South Division informed the Conservator of Forest(WL) in the office of the PCCF, Odisha that the area has 11430.685 acres of private land(mostly agricultural land) and 2972.10 acres of government land(belonging to categories such as unsettled/unsurveyed or *bebandobasta*, departmental, cultivable waste, uncultivable waste, community land or *sarbasadharan*, and protected land or 'rakhita'). Total land area was thus 14402.825

forced the Department to modify the proposal in subsequent phases. By the time of publication of this report, the website of the Chief Wildlife Warden of Odisha mentions that the area is 'being developed as a community reserve' indicating that the final notification is still pending.

CONSTITUTION OF COMMUNITY RESERVE MANAGEMENT COMMITTEE



In the meanwhile the Black Buck Community Reserve Management Committee (CRMC) was constituted with the following as office bearers with respective designations. As spelt out under section 36-D of the Wildlife (Protection) Act, (Amended in 2002), it is directed that the Management Committee has been constituted comprising of five representatives of the State Forests or Wildlife Department under whose jurisdiction the Community Reserve is located.

After constitution, the committee elected a Chairman who also is designated as Honorary Wildlife Warden of the Community Reserve. The committee as part of its responsibility shall regulate its own procedure including the quorum. It will be the competent authority to prepare and implement the management plan for the Community Reserve and take steps to ensure the protection of wildlife and its habitat in the Community Reserve. The Committee as presented below submits to abide by the principles and guidelines.

Sl. No.	Name	Designation
1	Sri Amulya Kumar Upadhyaya	Chairman
2	Sri Pramod Kumar Patnaik	Member
3	Sri Aswini Kumar Pradhan	Member
4	Sri Basanta Kumar Raulo	Member
5	Sri Brusaketu Das	Member
6	Range Officer, Buguda Range	Member
7	Divisional Forest Officer, Ghumusar South Division	Advisor

The villages who have submitted their resolution stating consent and affirmation for unanimously participate in conservation and management of Black Buck Community Reserve include: *Sidhanoi, Bajrakote, Bhetnoi, Narayanpur, Balipadar, Danchandanpedi, Santarapur, Phapalpur, Gahangu, Dehuka, Dhanija, Bhejput, Pandiapadar, Kholakhali, Subudhipalli, Ramanda, Burujhola, Talasakar, Laxmipur & Barikpalli and Kanjiapali.*

The Black Buck (Community Reserve) Management Committee (BBMC) by way of a resolution (10.04.2005) laid down the objectives of the management committee as under:

- The committee shall convene meetings time to time for detailed discussion on conservation and management of black buck animals and their habitat and

acres(5831.103 hectares or 58.31 sq.km.) He recommended, "the Government Land may be contemplated as community land".

opinions/suggestion generated in this regard shall be communicated to the DFO, Ghumusar South Division for implementation.

- That, the committee shall immediately act to any report on poaching of black buck and injury/accident/causality to any other animal and take steps as deemed fit in consultation with the Range Officer or DFO.
- Create awareness among people to prevent situations like capturing and domesticating the black buck.
- Create awareness to reduce the pitch of blaring loud speakers as used in various social and cultural functions to not disturb the black buck population.
- Create awareness for not using explosives as used for blasting stone quarries and any other such material/activity causing sound pollution as well as to take steps to put up collective resistance against permissions to do so by any relevant authority.
- To take steps to prevent any epidemics happening to domestic animals so as not to allow its spread to the black bucks.
- To go ahead for wider dissemination of the community efforts in black buck conservation by launching a website on which all information would be hosted.

SUGGESTIONS FOR FURTHER DEVELOPMENT

Local communities shared some of their concerns and suggestions for further development in black buck conservation initiatives. They have been summarized as below.

Fodder provisioning: The animals have become like domestic animals. They often graze over our standing crops especially the green gram. With a feeling that they are like our family members we do not go offensive against them. However, *vetiver* is a favourite grass/fodder of the animal. We suggest that *vetiver* be cultivated in the government wastelands so that their browsing over standing crops would reduce.

Drinking water provisioning: All over the 67 villages dedicated to the cause and conservation of the black bucks there are only 50 ponds where they drink water. During the summer season and/or time of dry spell there are difficulties faced for drinking water for the animals. To prevent such situations apart from renovating such ponds, more game ponds need to be constructed. *Baghua nala* is an important water drinking site. Sometimes due to scarcity of water in *Baghua nala* many animals are dying out of thirst. Hence, provision of water bodies need to be created there so that the animals would not have to go in search of water to other places.

Awareness drive: The conservation of black buck needs lot of awareness to be developed among the local communities. Awareness for facilitating peaceful non-violent co-existence between the animals and the local community is of utmost importance. It would be a good move to take the wild life week celebration to the villages so that mass awareness and participation for management can be better harvested.

Safety from poachers: Watch and ward processes need to be geared up to ensure the safety of the animals from poachers. Usually poachers from Rugum and Odagaon areas sneak into the black buck habitat and hunt down the animals. The community is trying its best to prevent such

situations but there is little effort from the forest department side. It would be very useful to appoint a forest guard to link the community and the department in preventing poaching activities.

Relationship with department: There are both positive and negative remarks of the community about the cooperation and interaction between the department and the community on the matters of black buck conservation. It is highly solicited that cooperation and interaction between the community and the department need to increase. There should be no place of hostility or indifference from any side. Black buck conservation is not only an emotion or grace of the local communities but also it is a national agenda. Hence the working relationship and exchanges between department and the conserving community need greater attention.

Case Study –II(potential site for Community Reserve)

Maneswar

An old traditional village called Maneswar, about 8 kms and approachable from the district head quarter Sambalpur has earned fame as a conservation village where the communities have been protecting the **Indian Soft Shelled Turtles (*Asperadetus gangeticus*)** since generations. The village has been denominated after Lord Maneswar – a synonym of Lord Shiva whose shrine converted to a temple is located in the village. Historians believe the shrine is more than 500 years old. In the beginning the temple was known as Maneswar Mandhata temple which is popular as Maneswar temple in the present days. Adjoining the temple is a very old tank measuring about 3 hectares which is a safe habitat of the Indian Soft Shelled Turtles. Local people revere the shrine as a place uniting *Hari (Lord Vishnu)* and *Hara (Lord Shiva)*, attributing to the presence of turtle which is regarded as an incarnation of Lord Vishnu. Hence the turtles are cared and revered religiously to secure the well-being of the village communities. The place is attracting people from far and wide for the turtles and by that the village is getting recognition and reputation as a conservation village.



Indian Soft Shelled Turtles are threatened species although once upon a time were of common occurrence in fresh water bodies of the state. The greed for soft meat of the amphibian is the single largest factor for mass capture and killing making them endangered and rare. However, in Maneswar it is held with high esteem by the local people who believe that any small harm caused to the creatures would bring bad luck to the villagers by the wrath and anger of Lord Vishnu and Lord Shiva.

The habit and habitat of Indian Soft Shelled Turtles

The tank adjoining the Maneswar Mandhata temple that measures about 3 hectare is the safe habitat of the turtles. Over the years the turtles have propagated their population sizably due to high protection accorded by the local communities. The tank is a multipurpose one that caters to the domestic needs of the villagers as well as the religious needs of the temple and the devotees. It is surrounded by temple wall on one side and earthen bund on three sides, with stone made embankments at two places; and is linked with river "Malatizor", one of the tributary of River Mahanadi, the conventional habitat of turtles. Due to the linkage of the tank with the tributary there is never any shortage of water therein. This has shaped the typical habitat for the turtles. This place plays a very crucial role in provisioning better ecosystem services supporting the survival of the species and as a gene pool for the animal. Maneswar Mandhata temple tank is one of the religious places where these otherwise susceptible animals find a safe shelter. The natural habitat has also intermittent rock surfaces projecting out of the water that favours the basking (sun bathing) of the turtles. This water tank is attached with river 'Maneswarjhar' through water channel and a water canal adjacent to tank is attached to river; there is network of water canals meant for irrigation. This network allows movement of turtles outside tank when water level is high, especially during rainy season. Thus, the gene pool of population of turtles is not only confined to tank but, there is gene flow of species ensuring endurance of the species. Moreover, who ever gets turtle in nearby area (generally in rainy season turtles disperse in nearby agricultural fields) releases it into the temple tank. Hence the tank is proving to be a holistic system holding stock of endangered species. However, the temple management committee has engaged a five member team to roam around in 0.5 KM radius during the peak rainy season in search of dispersed turtles and on sighting them they immediate rescue them and release them in the tank.

Local people believe as if God has created the space craftily for the turtles to live there peacefully. The species Indian Soft Shelled Turtles or Ganges Soft Shelled is distributed in large river systems like Mahanadi, Ganges and Indus. These also occur in large ponds and water bodies. From ecological perspective the fresh water turtles are very important due to vast array of their diet, generally they are carnivorous especially attract towards rotting flesh and are known to be fairly adaptive to an array of food including cooked food. These turtles are scavengers and often referred as 'vultures in water' which help in reducing organic matter in the water body by consuming decomposing matter especially dead animals, which otherwise create conducive environment for other annoying pest affecting health. They are intricately associated with the web of life since they release nutrients locked up in dead animal tissue, and thus keep rivers and water bodies clean. They ensure populations of healthy and commercially valuable species by feeding upon dead and sick fish. They also help to control waterweeds, such as the water hyacinth and control pests like mosquitoes. This trait of turtles makes them ecologically valuable, population decline of which can result into dire environmental consequences.

The conservation history:

The conservation history dates back to the period of ruling by king Balaram who was quite fascinated by the natural set up of the area and thought about constructing a temple and a huge

tank in the area that would make the area picturesque. It took quite some time for the tank to be completed. The village was relatively water scarce then and people thanked the king for such a noble thinking to ensure water availability in the village throughout the year. The villagers were suffering from shortage of water during the summer season. The temple also touched the religious sentiments of the villagers.

After the temple and the tank were completed the king brought a couple of turtles from somewhere and released them in the new water of the tank. Some people believe that the king found the turtles from the bank of River Mahanadi and rescued them from the carnivores hovering around. However, the local people feared to do anything with the turtles as the animals were released by the king. The turtles lived happily and propagated their number. The surrounding was also a safer for laying and hatching eggs. The king's dynasty also cared for the turtles across generations.



In course of time people from nearby areas started visiting the temple on religious purposes. Maneswar became a pilgrimage as well as a paradise for nature lovers. For the better management of the temple and the turtle habitat, by the middle of 19th century, the villagers thought about constituting a committee to look after the management of the pilgrimage as well as to take steps towards conservation of the turtles. Finally a temple management committee was constituted in 1855 and reputed persons from

the village and neighboring villages were chosen as office bearers.

The tank where the turtles are living also provides favoured habitat for a number of species of aquatic and amphibian fauna as described by the villagers. According to the temple management committee members the population of the turtles counts more than two and half a thousand leaving apart the young and juvenile ones that are numerous. Winter offers better sighting of the turtles as the young and old ones come out of water and lodge on the projecting rocks for sun bathing. In other seasons the turtles sometimes come out for feeding on the *prasad* and such things that people bring to offer to the turtles.

The temple priest who has been worshipping in the temple for more than 50 years as on now described that it is quite customary that puffed rice is offered to Lord Maneswar in His temple. Devotees visit the temple with puffed rice and other materials like coconut, banana, and other materials that can be offered as offerings. Part of the offerings is kept by the priest that is thrown into the tank two times a day. The turtles feed on those materials. Even on the new grain festival (*Nuakha*), which is a big celebration in western Odisha, some villagers' feel that part of the offerings must be given to the turtles. There is a prevailing belief that nobody should cause any harm or tease the animals in any way lest that the God would cast an evil spell on the person and bring him/her bad luck. Hence, consciously or unconsciously nobody dares to cause

any harm to the animals. People also attest that they might be indulged in several of unbecoming activities but they are always pretty careful about the safety and tranquility for the turtles. No fishing activities are permitted in the tank. Entry of cattle into the tank or cattle trespassing on the bank of the tank is strictly guarded and the turtle eggs are also safeguarded from hovering stray dogs.

The major threat identified by temple committee is siltation of water tank. The tank is facing natural aging process, through accumulation of silt and debris; this is resulting into reduced water holding capacity. The temple committee is proposing renovation of tank with removal of accumulated debris and silt from the tank. The villagers described that of late they had spent Rs 50000/- on cleaning the tank. However, concerned about turtles, the committee is not recommending a complete renovation and deepening of the tank as such operations for sure shall cause harm to turtles and their breeding grounds. Therefore they are planning phase wise manipulation of tank so as to prevent, to the possible extent, any disturbance or harm to the turtles.

Despite the strong protection accorded to the animals and their habitat there are potential risks and dangers associated with the survival of turtles. Eastern India is the prime market for turtle meat, all species of turtles and tortoises in India are under threat owing to their over exploitation for meat, the condition is so bad that now it is difficult to sight single individual where there were thousands of them few years ago. This species is also threatened due to habitat destruction caused by pollution, urban expansions, destruction of nesting areas and such. The increasing use of chemical fertilizers, pesticides is also posing indirect threats to the survival and propagation of the animals.

The people of Maneswar and neighbour villages have been playing very important role in conservation of these turtles. Here turtles get religious importance, affection, sacredness and protection, though this all is due to religious belief attached to this species, but it is proving effective in conservation of otherwise vulnerable species.

Peoples' opinion about constituting a community reserve

There are mixed opinion of the village communities about constituting a community reserve for better management, conservation and natural propagation of the turtles. While some observe that such an initiative would bring further recognition and reputation for the village, some other believe that their years of efforts and noble initiatives would be hijacked by the forest department who have had played no role so far or have done anything to promote the zeal of the communities. The senior members in the community believe that with recognition of the site as a community reserve it would create complex situation, for example, in the name of scientific management the local knowledge and experience of years might be ignored and the local people may be asked to keep on the bay. However, the idea of community reserve is also appreciated to a good score as it would bring in more investments and knowledge systems in the interest of the gene pool and the habitat conservation. But it remains to the bilateral negotiation between the temple management committee on one end and the forest department on the other end. So far no initiatives have been taken by the forest department for a bilateral dialogue on the matter. Despite that the villagers expressed their openness to submit to any

noble idea and initiative in the interest of the turtles that have been very emotionally attached to the peoples' sentiment. Locals also observed that since it is a natural aquatic habitat there may be limiting factors governing the expansion of the habitat.

Case study-III(potential site for Community Reserve)

Kodbahal: Where the villagers pet the deer

Background:

The village Kodbahal coming under Hemgiri Forest Range in Sundargarh District has earned fame as a conservation sensitive village for the efforts the local community has given over the years in conserving the deer population in the area. Hemgiri Forest Range is located within 21°45'00" to 22°01'20" N latitude and 83°31'31" to 83°57'00" E longitude. It comes under Sundergarh Forest Division; about 65 KM away from Sundergarh district headquarter. The present Hemgiri Forest Range covers over an area of 625.65 sq-KM. This forest range is famous for its vast green natural forest with ancient caves and rock engravings.

The forest type of this range is dry peninsular Sal forest and dry mixed deciduous forest with bamboo brakes. The other associates are *asana*, *kurum*, *kendu*, *dhaura* etc. along with bamboo species which fed the Orient Paper Mill during 1980-1990 spontaneously. In addition, the faunal diversity comprises of rabbit, leopards, wild boar, elephants, deer, *sambar* and several varieties of birds.

Hemgiri had the legal status of an Estate(zamindari) during the colonial period under the King of Gangpur(Sundargarh). It was highly forested, and the estate ruler had a strong forest administration. The palace at Hemgiri and the Forest Rest House at Kanika bear some testimonies of the keen interest of the Hemgiri zamindars in their forests. At present, the forest range has 60 numbers of revenue villages with total population of 66291 with 13.62% SC and 46.82% ST community. The major forest dwelling communities inhibited within this range are *Ganda*, *Bhuyan*, *Kishan*, *Oram*, *Munda* and *Khadia*.

Government's strategies:

Hemgiri forest range is divided into 5 sections and supervised by a Ranger, 5 Foresters, 5 forest guards and 12 Watchman. There is a check gate at Kanika towards Belpahad. The Forest Department has 20 Bit Houses and a Rest house within the range. The typical floristic diversity under the dry deciduous mixed type caters a good population of herbivorous denizens with the flagship range animal like elephants. Despite the density of floral diversity there has been degradation of the grazing pastures on the valleys and foothills that posed problems like food scarcity for the wildlife in the forest range. Further, being a comparatively drier area the water scarcity for wildlife is well realized during the dry seasons.



Looking at the needs like pasture development and provisioning of water for the wildlife the department with the help of local community has constructed dug outs at many places within the forest and has also constructed check dams on the perennial streams flowing through the valleys in the grazing zones. These small game tanks and small reserves at the check dams are perceived by the local community as life line for the wildlife. For the development of canopy intensive plantation of endemic and economic forest species has been done within the rangeland that also has contributed to the habitat development of the wildlife. However, amongst the plantation species teak outnumbers others and adequate attention is also given to survival of teak. The teak plantation is seen as an asset as well as a threat also. According to Mr. Kuber Chandra Naik, a forester in-charge of Kanika section, it is a fact that adequate attention is given towards survival of teak plantation but that apart teak is not a browsable species for which the survival is comparatively better. However, as he viewed it, teak plantations may be the major cause of man-elephant conflict in future. Due to shortage of the fodder varieties in the forest and with adequate space given to teak plantation the elephants might raid over the standing crops of the community in future. As such no strategy has been laid down as on yet to prevent the man-animal conflict and no compensatory mechanism for losses due to crop raiding, if at all it happen so, is in place. The functionaries in Forest Department also admit that crop raiding is happening even now and there have been cases where damage up to 50% of standing crops of many villages within the rangeland is happening by the elephants. However, VSSs have been constituted in all sixty villages, of which only 20 are involved in active conservation activities; especially, the village Kodbahal is very special involving in protection of the spotted deer (*Cervus axis*) and conservation of forest.

About the conservation initiative:

The village Kodbahal comes in Kendudihi GP of Hemgiri community development block. The village shares its boundary with Gopalpur range (of Sundergarh district), Jharsuguda district and Chhattisgarh state. Dependency on forests by local inhabitants is very well marked in the area. Particularly, the *Khadia* community which is well known as a hunter gatherer community inhabit these areas and they exhibit both exclusive and subsistence dependence on the forests. Along with fulfilling their basic necessities, forest produces provide to their cash needs for survival.

The villagers belong to Dehuri title group, a sub-group of Gondo-Bhuyan; they do believe that the wild animals are adored by the village deity and hence shouldn't be harmed. This belief has driven them towards protection of spotted deer population in two hundred hectares of mixed deciduous forest that has been conserved and protected by them.



A village elder of 79 years explains how they fought with the British against the contractual forest clearance in late 1945. However, the conservation measures took shape in late nineties when villagers started forest protection

In February-March 2004, a deer was found unconscious; and the villagers took it under treatment. The doctor found that the deer had consumed ground nut leaves. The villagers claimed that was from the neighbouring village as nobody from Kodbahal cultivated the crop. Later, they got to know that the crop was poisoned especially to catch the animal and found the poison Hyasulfan. They reported it to the forest guard, pushed the incident up to the Ranger, but the case was dissolved then after.

to make sure sustenance of forest that ensures their lives and livelihood. Spotted deer are the natural inhabitants of this area; people have developed a symbiotic relationship with deer's over a period of time. The actual deer protection measures became intense after 1998, when villagers started protecting their forest though forest committee development initiatives.

The Kodbahal VSS is still in active function for the last 12 years with 15 strong articulating members chosen by the villagers itself on rotational basis. The regenerating forest provided suitable habitat to deer and other wild animals and rotational patrolling by villagers checked the frequency of logging and poaching. Deer depredation on crops is a common experience in this village where agriculture is the prime livelihood source. Moreover, deer and peacock never hesitate to invade in human habitations and to pet within the villagers embrace. A herd of deer roaming around village is a common site for villagers.

Constraints:

There is no deer census data available or maintained in the Hemgiri range. However observation of local people especially the villagers of Kodbahal indicates that, the deer population is declining. Therefore the question is, despite these protection efforts, how population of this species is declining? The villagers' remark upon the adjacent villages' hunting activities is the main reason for deer population decline. The *Dhanuar* clan from the neighbouring villages is into regular poaching activities. 'We arrest them, levy penalties, but still they are unstoppable,' adds Babrubahan Bonchhor, Forest Guard. There are ten other villagers surrounding Kodbahal. The Kodbahal villagers have their own traditional domain (boundary line) around the village and started conserving the forest through natural regeneration and planting neem, pongamia, mahua, mango, bamboo etc. However, the neighbouring villages never agree with the agreed limit-points and encroach into the conserved areas which resulted in inter-village conflicts. The villagers have been demanding a 'demarcation zone' for protection within the village boundaries, but never get answered by the department. Many at times, the Kodbahal villagers asked a mutual discussion with the neighbours facilitated by the Forest department, but failed to such arrangements replied Loknath Dehri, President, Kodbahal VSS.

Major threats:

1. Illicit and exploitative hunting practices resulting into depletion of deer population
2. Habitat destruction due to mining activities and illegal tree cutting

CONSERVATION RESERVE

The State government has been vested with the power to declare areas as Conservation Reserve as per provisions under Section 36A. No corresponding power has been vested either on Central Government (as in the case of National Parks and Sanctuaries) or any other authorities. In Odisha there are few sites identified those qualify to be the conservation reserves. Conservation reserves technically are a contestant to the idea of Ecologically Sensitive Areas as defined under Environment Protection Act 1986. Under the purview of section 36A of WLP (amendment) Act 2002, the State Board for Wildlife has taken some initiatives to declare certain potential areas as conservation reserves. While endorsing the proposals for declaration of new sanctuaries it has been decided by the Board that a stage wise approach would be taken for different areas depending on the levels of wildlife and human interference, for example, Devi-Rushikulya river mouth areas can be declared as conservation reserves for olive ridley turtles (vide minutes of the meeting held on 30.11.2004). The Chief Minister of Odisha desired that different bio-geographic zones should be represented in the protected areas.

While there are many potential areas in Odisha, especially the outer fringe of sanctuaries in the state, not much headway has been there to declare areas as conservation reserves. The major challenge that is facing the government is the rehabilitation and re-location of the communities displaced from the core area of sanctuaries as well as in developing a framework for co-management of the conservation reserves, once after declaration of an area as a conservation reserve. However, the concerned department has received proposals for constitution of conservation reserves in few areas. For instance, in 2007 the then Honorary Wildlife Warden of Nuapada district proposed to declare the Patdarha Forest Block, that serves as an important ecological link between the Sunabeda Sanctuary of Odisha and Udanti-Sitanadi Tiger Reserve of Chhattisgarh, as a Conservation Reserve for adequate protection and conservation of the same. The office of the Chief Wildlife Warden responded to this request by asking the DFO, Sunabeda WL Division to provide necessary details with a remark that "motivation work needed to be taken up as gramsabha resolutions of these villages would be required in favour of constitution of the Conservation Reserve"⁵. Similarly, referring to the recommendation of the Bombay Natural History Society for supplementing the conservation effort for the biodiversity and ecological treasures of Chilika through creation of another sanctuary at Mangalajodi because of the problems and changes observed in the biotic and hydrological regimes of the lake, **Wild Orissa**, a locally active NGO working for wildlife conservation suggested to the PCCF(WL) in 2007 that it would be more useful if a Conservation Reserve or Community Reserve was considered at Mangalajodi instead of sanctuary because a participatory mode of conservation would be more feasible there. The office of the PCCF(WL) asked the DFO, Chilika (WL) Division to furnish necessary details alongwith a proposal for constitution of a Conservation Reserve at

⁵ Vide letter dtd.10th June 2008 of the Deputy Conservator of Forest, office of the PCCF(Wildlife)

Mangalajodi⁶. However, none of these proposals seems to have been effective with a final notification.

However, many of the potential sites for Conservation Reserve have not been looked down upon by the informed community in the state. Simultaneously with the protection of proposed elephant reserves opinions have been generated to protect the known elephant corridors through declaring the areas as conservation reserves and by settling with the rights of the local communities so that there would be participatory management geared up towards integrating both larger ecological and local economic causes. For the purpose of the study here, the potential sites lying exterior to Karlapat and Hadagarh sanctuary has been studied.

Case Study - IV(potential site for Conservation Reserve)

Conservation Reserve in the periphery of Karlapat Wild Life Sanctuary

Ecologically diverse, the Karlapat Wildlife Sanctuary (KWS) in Western Odisha is a treasure trove. The Sanctuary is under the range of Kalahandi South Division, Bhawanipatna Circle; Notified vide Notification No-10772-8F (W) 40/88 dated 10.5.1988. KWS is situated in the South-west corner of Kalahandi district, the western fringe of Odisha bounded by Navarangpur and Rayagada districts. Karlapat Sanctuary has been notified as Wild Life sanctuary under section – 18 of the Wild Life (Protection) Act, 1972 .

The sanctuary area comprises of sections of various Reserve Forests - Karlapat RF: 7077.0 Ha, Nehla RF: 3956.0 Ha, Jugsapatna RF: 2084.0 Ha, Jerka RF: 2754.0 Ha, Sagada PRF: 1069.49 Ha, Jugsapatna extn. PRF: 609.83 Ha.

Location:	Located in the District of Kalahandi between Longitudes 82 ^o -45' and 83 ^o .15'(east) latitude 19 ^o .30' to 19 ^o .50' (north)
Date of notification:	15 Oct. 1992, Notification No. 24498–8F WO–41/92– F&E
Area:	147.66 sq. kms, boundary length 141.1 Km, working plan area 175.50 sq Km
Forest type:	Sal, Asan, Bija and other mixed vegetation
Villages:	15 villages, 1455 population
Climate:	Moderate
Wild animals to be seen:	Tiger, Leopard, Elephant, Wild boar, Gaur, Sambar, Nilgai, Barking Deer, Mouse Deer, varieties of colorful birds, and reptiles (snakes & lizards)
Convenient approach:	12 km from Bhawanipatna
Administration:	D.F.O., Kalhandi South Division, Kalahandi.

⁶ Vide letter dtd. 18th December 2007 of the Deputy Conservator of Forest, office of the PCCF(Wildlife)

It is located between 82° 45' to 83° 15' East Longitude and 19° 30' to 19° 50' North Latitude. It covers an area of 175.503 sq. km comprising 6 Forest Blocks namely 70.77 sq km of Karlapat R.F., 39.56 sq. km. of Nehela R.F., 20.84 sq. km. of Jugsahipatna R. F., 27.54 sq. km. of Jerka R. F., 10.69 sq. km. of Sagada P. R. F. and 6.10 sq. km. of a part of Jugsahipatna extension P. R. F. The hills rise to the elevation of 400 to 915 meters.



Karlapat gets its name from "Kalra Patria Bagha" meaning tiger with stripes resembling Bitter Gourd leaves, i.e. the 'leopard'. The name itself demonstrates the rich biodiversity that includes many floral and faunal species. The forest is dry deciduous type with patches of riparian semi evergreen forest along the hill streams. It is a water rich area with 18 waterfalls & 36 streams and is home to several species including leopards, tigers, elephants, black panthers, deer, sambar and several varieties of birds. Around 30 species of mammals including the Small-Clawed Otters and a healthy population of Indian giant squirrel is also be found there. It is also rich in floral wealth with ever-dominant Sal and bamboo species and is a habitat for more than 25 types of orchids.

There are 19 villages having approximate population of 2000 inside the sanctuary which can be termed **Traditional Use Zones**. This would extend over a distance of 8-10 KM. The indigenous tribe inhabited in the forest belongs to Kondh community obviously sustains upon NTFPs and hill agriculture mostly shifting cultivation. Thus, Karlapat represents an immense diversity of topography, species association and socio-economic practices.

Details of villages inside the sanctuary area:

As reported by the District Collector, Kalahandi, there are 10 revenue villages and 9 un-surveyed villages inside the sanctuary area. The details are given in Annexure- 2.

Community concerns: to what extent conservation reserve would be able to accommodate their problems and difficulties

Since the declaration of Karlapat as a sanctuary, issues around the rights and concessions of people on the sanctuary forest are on rise. The rights of local people have been curtailed by the sanctuary management. There have been issues like- rights settlement with the villagers has not been made properly; the traditional access to forests for agriculture and forest produce collection has been strictly denied; no exploitation even for *bonafide* requirement is officially allowed; crop raiding by wildlife is a regular phenomena but as local people do not have record of rights on the forest land no compensation is admitted by authorities; the local Gram Panchayat and tribal self-rule has no meaning as they remain sub-servient to the sanctuary management. These kind of issues have become persistent and prominently being articulated in the locality. Hardly any proper initiative has been taken to sort out these issues in consultation with local communities. The ideals of a possible co-management option have been hardly tried. In such a situation local people are at a loss to understand how to limit their activities so that they live and earn their livelihoods in the same villages and on the other hand how to negotiate their rights on the forest resources.

Having been deprived of their rights over the forest resources available within the sanctuary forests the local inhabitants are in the lookout for a better arrangement so that they can have access to resources without interfering with the wildlife management plan in the area. The idea of a conservation reserve wherein people get entitlements for their contributions to the wildlife management has the potential to meet the aspirations of the local communities as well as the forest department in the context of sanctuary management and peoples' access and control over forest resources that has held their lives since generations. To avoid the conflicting situations and ensure biodiversity management along with developing the fringe areas by co-management options with the communities is a feasible perspective to establish harmonious co-existence between the local communities and wildlife. The provisions under conservation reserve has the potential to accommodate such issues and concerns and hence is regarded as a relevant proposition for much wider negotiations between communities and sanctuary management authorities around wildlife and larger biodiversity conservation.

During the study discussions were made with village communities in the periphery of the sanctuary who aspire to be part of the forest and wildlife management and in return get access to their livelihood resources from the sanctuary periphery and fringe forests. There are ranges of NTFPs available abundantly across the seasons and the NTFP collection happened to contribute to 50% of their livelihoods requirements in the past. Traditionally people are adept to collection of NTFPs. The sanctuary management has snatched away their traditional rights and access. However, there is still bountiful resources available in the outer pockets of the sanctuary that are gradually deteriorating due to over and unscientific exploitation under conditions of competition to collect the maximum within unit time and labour input.

The local village communities remain lame spectators to wanton destruction of the sanctuary forests by outsiders who also intrude with the interest of mass poaching of wildlife. The local communities often do not dare to confront such agents and as such the sanctuary management has not deployed enough guards for safety of wildlife from poachers. Under such conditions the communities are willing to come forward and contribute to the cause in a more meaningful way through bilateral negotiations. At the same time people are apprehensive that the idea of a conservation reserve might end up with expansion of the sanctuary and thereby grossly curtail their rights to live and earn a livelihood in the same area.

While the above depict the larger scenario of the deprivation and difficulties faced by the traditional dwellers in the area, specific discussions were conducted with village communities in *Karlapat, Jilagaon, Kuanga, Amthaguda, Lilingpadar, Bada Tikraguda, Surmel, Bhejiguda and Chancharaguda* to enlist in detail the kind of problems they have been facing and what they would aspire for if a conservation reserve is constituted covering adjacent areas and the major elephant corridors. The people cited the various ways their living has become difficult in the area. They also expressed that their willingness for constituting conservation reserve is always there provided that the conservation reserve formalities can suitably accommodate their major concerns for living and livelihood earning. In a much precise way it implies that the negotiations for constituting a conservation reserve should by no means ignore the present day problems and must bring long term remedial measures not simply a short term relief.

Excerpts from discussion with people in different villages

- Karlapat was declared as a sanctuary in 1992. Immediately after declaration the sanctuary rules were not strictly imposed upon the people. It is being implemented strictly since last five years when a notice was served to the local people informing them about the restrictions on their dealing with forests.
- *Podu* cultivation has been abandoned since 2004. This has resulted in acute food shortage. Forest department is keeping strict vigil on *podu* cultivation. People have very marginal land holding. Production from *podu* supplemented to their annual food needs. Now after abandoning *podu* cultivation people face severe problems, mainly at subsistence level.
- Forest department functionaries often seize axe and other weapons from people who carry such things into the forest. That makes people helpless in the case of countering the attack by wild animals for self defense.
- Whatever crops are grown on available low lands are being grazed over by animals like elephants, barking deer (*kutra*), monkeys, peafowl, etc. They particularly destroy paddy and other cereals and millets.
- Blanket ban on NTFP collection and non-harvesting of bamboo that once upon a time provided enormous employment opportunities for the local communities have made their life difficult for a survival.
- The way sanctuary management rules are implemented, people become apprehensive that a time would come when collection of fuel wood from the forests will be restricted.
- There are forests within the sanctuary, which people have been using as village forests since years. There is demand from people if such forests could be handed over to local villages for management. For instance, people of village Kuanga demand that Kakidighati

jungle be handed over to them for management from where they would sustainably extract resources for survival.

- Most of the households do not have *patta* over the land they have been cultivating since generations. In the absence of *patta* they are not even eligible to take a loan from bank for starting a trade or other options. Further, they apprehend that it will be easier for the forest department to drive away those who do not have *patta*. At the same time, they also argue that they have traditional and customary rights and legitimate stake over the land they have been using since years and under this condition their rights should be recognized and they be provided with *patta* rights. That would increase their ownership in a management process.
- Many families have not received BPL cards for which they are not able to utilize the facilities like under Public Distribution System. A BPL card at least ensures their right to avail PDS rice at a subsidized rate. In absence of that their survival is at risk.
- There has been no development work since last five years. Government sanctions to Gram Panchayat for development work remains unused as otherwise the sanctuary rules are sure to be violated. People are losing the wage earning opportunities what they would have got from Panchayat works.
- Out migration for wage employment is increasing day by day. Mainly the men migrate leaving their families to survive through difficulties. Roughly 70% of the people are daily wage labourers now. In search of a livelihood they go to other villages.
- There is acute shortage of drinking water. While the forest department is creating facilities of drinking water by constructing game ponds, there is no consideration for local inhabitants.
- Healthcare is a great problem. There is no facility for emergency management. The nearest hospital is at Bhawanipatna. There is no transport facility for patients. In case of accidents and incidents of animal attacks people fail to provide minimum healthcare services to the patient.
- Wood smuggling is going on unchecked. Local people believe that this is happening in the knowledge of forest department staff deployed at check posts. There are also cases when local people have caught the smugglers at the site of tree felling and handed them over to the forest department staff. The smugglers make easy escape from the hands of forest department staff.
- Given the problems, people suggest that a bridge of partnership between sanctuary management and conservation reserve management and the local people must be built. Instead of keeping local people away from the management processes, ways is explored how and in what ways they could utilize the local people to accomplish the survival and co-existence of wildlife and local people. People are ready to extend all sort of cooperation to for biodiversity conservation and at the same time demand that their interest should not be overlooked.

Suggestions for development and co-existence through Conservation Reserve declaration

Declaration of a conservation reserve covering forests on the exterior part of the sanctuary is seen with hopes and aspirations of the local communities. Local people express their willingness for all cooperation believing that in exchange of their contribution their life and livelihoods would be taken care of. However, the point of doubt is how to demarcate the

boundary of the conservation reserve. There has to be adequate process to demarcate a realistic boundary keeping in mind the range animals, the foraging species and their occasional habitats outside the sanctuary.

Problems seem to be interlinked with each other. One major hurdle is differentiating the conservation reserve boundary from the sanctuary so that the animals remain confined to a certain zone and the normal co-existence of communities and wildlife can be geared up in the area outlined as conservation reserve. People argue that wildlife get free access to standing crops in fields rather easily since the agricultural fields do not have a fence around. If **barbed wire fencing** is done encircling the agricultural lands the crops can be saved. In usual practice, while providing watch and ward to crops when wildlife is sighted people first try to drive them away and in the worst case people hunt them down.

People lament that they are being framed by sanctuary management for game hunting which they hardly do unless confronted with situations. In most cases people from villages outside the sanctuary area enter into the sanctuary for game hunting. If power is conferred to local people by forest department to check outsider poachers it will **reduce the game poaching and casualty** to a great extent.

There is sheer lack of wage earning opportunities inside the sanctuary area. Construction of game tanks occasionally provides **wage-earning** opportunity. If more employment opportunities are created by forest department people would get income opportunities and that would to a great extent help their survival needs.

People put it logically that without their cooperation wildlife management outside sanctuaries cannot be thought about. To facilitate the process it is required that a **committee** is formed with active participation of neighboring villages and border villages along the sanctuary limits that would help protection of wildlife better.

There should be some compensation, the forest department must consider, towards damage of crops by wildlife. For this the forest department should first **assess the loss** and then fix a compensation for the same. If it is not easy for forest department to augment the loss at each site then that may be dealt by a village committee duly empowered by forest department.

Community initiatives and self-restraints:

The Kondh community is the major stakeholder in KWS region. The local people, the forest dwelling community of the sanctuary zone have been relying upon NTFPs



collection and agricultural activities for their livelihood maintenance. The community has different deities at different places in the dense forest according to its clans. The community's culture of worshipping deities proves itself to be what we may call an eco-religious practice because they offer food prepared with rice & millet to the deities' along with liquor & meat. Village communities usually come out on hunting expedition once in a year especially during Chaita Parav as part of their religious culture. Moreover, peoples of Jakum, Tentulipadar, Kiapadar, Jugsaipatna and Simeipadar have religious belief in wild animals. The tribes believes that, if anybody killed or ate otter, their body will not burn after death.

The tribal community mostly depends on agriculture activities especially shifting cultivation. All the villages cultivate varieties of cereals (paddy, millets and maize) and legumes (arhar, cowpea, rice bean, country bean etc.) with few oil seeds (mustard, sesame & niger), most for their household consumption. For such activities, they clear patches of forests. The preliminary observation at Jakum & Tentulipadar site estimates near about 3 hectares of land cleared for agriculture purposes. Big timbers are usually not felled but girdled so that the communities would not be held guilty for felling trees. Over the years gradually people are restraining from shifting cultivation and have been showing interest for regular agriculture on specific areas. This self-restraint would go a long way in preserving the forest patches around the sanctuary.

The loss of forest coverage and number & species of flora & fauna recorded in the sanctuary has raised concern over decades. The village communities inside the sanctuary (19 villages) and villages in the exterior part of the sanctuary such as Jakum, Kiapadar, Tentulipadar, Purunaguma, Sagada etc. have been engaging themselves in protecting the forest and caring for harmonious co-existence of both wild life and human population. They unite to put off the jungle fire. On the other side, the same community clears forests for agriculture activities.

There are both positive and negative interactions of local communities in relation to forest and wildlife management in the area adjacent to the Karlapat wildlife sanctuary. However, the community-wildlife interaction can be made better through a dignified negotiation with the local communities in order to ensure their full participation in the conservation and management of forests and wildlife for accomplishment of the desired goal. Karlapat has got tremendous potentiality and qualifies itself to be declared as a conservation reserve. Necessary initiatives in this regard may be taken up.

Case Study - V (potential site for Conservation Reserve)

Conservation Reserve on periphery of Hadagarh WLS

Location, biodiversity and people

Hadagarh wildlife sanctuary is located in the district of Keonjhar only at a distance of 20 Km from Bhadrak on NH-5. It is also approachable from Anandpur in Keonjhar dist. in North-East direction. It is a biodiversity rich zone in Odisha especially known for the wildlife. The Hadagarh wild life sanctuary is contiguous with Similipal Biosphere reserve on one side and with Kuldiha Wild Life Sanctuary on another side. Hadagarh forest zone was declared as Hadagarh Wild Life Sanctuary on 6th December 1988. Afterwards, it was on 29th September 2001, declared as

Mayurbhanj Elephant Reserve. The total forest coverage is about 608.902 sq.km., out of which the core area is 191.6 sq.km. The sanctuary is located in between 21°12'-21°23' N latitude and 86°12'30"-86°21'30" E longitude.



The forest type ranges from tropical deciduous forest to dry deciduous forest. The forest Sal and its associate species dominate the forest flora. Besides, another 40 species of plants including 6 species of climbers have been identified. The area is well known for the conspicuous animal diversity. As per the government record, a list of 30 species of mammals, 38 species of birds and 15 species of reptiles & amphibians are available in the sanctuary. A recent wild life census data suggests that the sanctuary has 27 elephants, 2 leopards,

120 *sambar*, 300 spotted deer and 250 wild boars. The Salandi Dam here is an ideal habitat for the mugger crocodiles. The Boula hill range lying on the East and west of Salandi River, the valley engaged by the reservoir and the catchment are main features.

According to the locals, the name was coined after its location at '*sarhad*' (the boundary line) of *Keonjhgada* (Keonjhar dist.) and *Mayurbhanjgada* (Mayurbhanj dist.). Moreover, the green diversity in flora, fauna and tribes living within and adjacent to the sanctuary along with the *Salandi* reservoir has made it as one of the tourist hot-spot of Odisha with a quotation "Hadagarh Wildlife Sanctuary: Experience the water & wild".

There are four villages namely Dalki, Pitanau, Jhunaposhi and Ratanmara located within the sanctuary. Kundei, Masaghati, are also known villages on the Satakosia side of the sanctuary that remain on outer fringe of the sanctuary. Besides, there are eight adjacent villages. Tribal population is dominant in the villages. The majority tribes live in & around the sanctuary zone are Ganda, Bathuli, Saoti, Munda, Santhala, Dehuri etc. The community lives within the sanctuary or at adjacent specifically depends on forest coverage for their livelihood maintenance. The villagers shared that they raise about 20-25% income annually from the forest.

Importance of Hadagarh WLS

Hadagarh WLS, apart from its tantamount importance from general biodiversity and diverse ecosystem point of view has also got special identity as part of Similipal Elephant Reserve. The elephant habitats of central India are spread over an area of 17,000 sq. km. in the states of Jharkhand, Odisha and a part of southern West Bengal. The 2,500 odd elephants in the range occupy the most fragmented elephant habitat of the country that has been degraded due to mining, shifting cultivation and developmental activities. The elephant habitats in Odisha consist of about 11,000 sq. km. that form about 24 per cent of the forest cover of the state. The

Mahanadi River divides the elephant habitat into two parts. The elephant habitats of the state can be broadly divided into those occupied by four major populations: a) Similipal-Kuldiha-Hadgarh and the adjoining population comprises three Protected Areas, viz. Similipal Tiger Reserve, Hadgarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary and is in continuity with the Noto, Sukinda and Badampahar Reserve Forests and supports about 500 elephants. Once contiguous, now Kuldiha has been disconnected from Similipal. The Mayurbhanj Elephant Reserve has been constituted to strengthen the conservation of elephants in this area⁷.

Potential for Conservation Reserve

The potential for constituting a Conservation Reserve in the periphery of Hadagash sanctuary has gained importance from many research based observations on the ecosystem, biodiversity, wildlife corridors and above all the geographical location and natural setting. There are also community interactions with the forests surrounding the sanctuary which happen as the immediate influence zone for wildlife migration. Since declaration of the sanctuary and impounding of the Dam many village communities have been deprived from their traditional access rights into the sanctuary forests and the rehabilitation and resettlement package for the Dam ousters have not been properly aligned even today. The local communities along with their growing dependency on the peripheral forests have also been organising themselves for better protection and management of the forests lying exterior to the sanctuary.

Similipal lies to the North of Hadagarh and is connected to it by a thin patch of forest rich in Sal and its associates. On the East lie the Hadagarh Dam and again a very thin line of corridor connecting with Kuldiha Wildlife Sanctuary. This means Hadagarh can act as a very vital path for seasonal migration of elephants from Similipal to the forests of Kuldiha and vice versa. Hadagarh sanctuary can act as a solid patch of forests for tigers and leopards of South Similipal which wander in search of new habitats in case there is spillage from South Similipal. The forest watchers of Hadagarh check gate told that there have been frequent sighting of Leopard pug marks in the northern part of the sanctuary. Since the Dam came up they are not sighted any more. However, these are good signs for future of the big cats provided proper focus is given to Hadagarh. Local people describe that the adjoining forests have good number of animals like wild boars which again means that this forest has enough prey base to support at least 10-15 leopards if not more. Boula mountain range focuses the lower edge of the sanctuary and is absolutely a solid demarcation line between the sanctuary and the revenue villages in and around the sanctuary. (Excerpts from blog of Satyesh Naik⁸)

The State Government would come up with an elephant corridor management plan in the next six months to avoid rising conflicts between man and elephant. A decision to this effect was taken at a high-level meeting chaired by Chief Minister Naveen Patnaik at the State Secretariat. At estimated Rs 54 crore would be spent in undertaking such measures for elephant.

⁷Right of Passage: Elephant Corridors of India: Sanctuary Cover Story, April 2011.

[http://www.sanctuaryasia.com/index.php?option=com_content&view=article&id=5268:right-of-passage-
elephant-corridors-of-india&catid=110:home-page](http://www.sanctuaryasia.com/index.php?option=com_content&view=article&id=5268:right-of-passage-
elephant-corridors-of-india&catid=110:home-page)

⁸ <http://satyeshnaik.blogspot.com/2011/07/hadagarh-sanctuary-reeling-under.html>

In order to provide a proper passage to these pachyderms to travel in the forest, the State Government has decided to revamp the virtual defunct elephant corridors. As per the plan, nine such corridors would be revived and some new passages would be earmarked. These nine corridors are Kare-Karampada, Badampahara-Dhobadhobani, Badampahar-Karidapurba, **Similipal - Hadagarh, Hadagarh - Kuladiha**, Kanheijena- Anantapur, Tala-Kholagarha, Nuagano - Baruni and Kotagarh - Chandrapur. Steps would also be taken to provide security to the elephants where they reside. In a bid to save the elephants from electrocution, the Chief Minister asked the officials to constantly monitor the power transmission lines⁹.

'Wild Odisha', an organization for conservation of nature and wildlife, places the following recommendations before the Ministry of Environment and Forests & Ministry of Tribal Affairs Committee on the Forest Rights Act. The recommendations are based on deliberations during a Workshop held on the 28th December 2008 at Bhubaneswar, Odisha, on the issue of 'Critical Wildlife Habitat', apart from the relevant provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 or FRA, Wildlife Protection Act 1972, Forest (Conservation) Act 1980, etc.

One of the recommendations urged that - The Government of Odisha may be requested to take necessary steps for recommending to the concerned authorities for suitably amending the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 as:- Section 2(b) - The phrase "areas of National Parks and Sanctuaries" may be substituted by "Protected Areas as defined under the Wildlife Protection Act 1972 including Conservation Reserves and Community Reserves and Reserved Forests under the Indian Forest Act 1927/Odisha Forest Act 1972 and 'Ecologically Sensitive Areas' under the Bio-diversity Act, 'Sensitive Areas' under provisions of the Coastal Regulation Zone Act and other categories of Forests falling under the purview of the Forest (Conservation) Act 1980".

The report also stated that Odisha has about 57% of the elephant habitat in Central India with 1800-2000 elephants spread over an area that forms about 24% of the forest cover of the state. Nearly 44% of the elephant habitat falls within eleven Protected Areas of Odisha.

Further, Similipal-Satkosia or Simlipal- Hadagarh Corridor connects Simlipal National Park with Hadagarh Wildlife Sanctuary through Nato and Satkosia Reserve Forest. This corridor is being regularly used by herds of 20- 25 elephants and bulls. It is about 15-16 Km long. Baula-Kuldiha or Hadagarh-Kuldiha corridor is being used by small herds of 10-15 elephants. This corridor connects Kuldiha Wildlife Sanctuary with Hadagarh Wildlife Sanctuary. Kanheijena-Anantapur corridor is being used by small herds of 3-5 elephants during October-February. Elephants move from Satkosia Wildlife Sanctuary to Anantapur Reserve Forest crossing through number of reserve forests and forest divisions. (Excerpts from recommendations by 'Wild Odisha' before

⁹Odisha Government announces Elephant Corridor Management Plan, Report by Odishadiary correspondent; Bhubaneswar, Tuesday, September 15, 2009.
<http://www.Odishadiary.com/CurrentNews.asp?id=14459>

the ministry of environment and forests & ministry of tribal affairs government of India committee on Forest Rights Act¹⁰)

The Envis Newsletter¹¹ reported the importance of Hadagarh as part of the Eastern India Elephant Range (South West Bengal –Jharkhand –Odisha). The Mayurbhanj Elephant Reserve covers parts of Mayurbhanj, Bhadrak, Balasore and Keonjhar districts of Odisha and is bounded by the latitude of 21° 10' to 22° 35' N & longitude of 85° 45' to 87° 05' E . This Reserve (2750 sq.km) includes Kuldiha Sanctuary (272.75 sq. km) and Hadagarh Sanctuary (191.06 Sq. km). Besides, it also includes an area of 3529.93 sq. km comprising of Protected Forests, Reserved Forest, Village Forest, DPF and Revenue lands. (Aug-Oct, 2008, Vol -14, No.1, Centre for Environment Studies, Odisha). A report was prepared and published jointly by Wildlife Trust of India and the Asian Elephant Research and conservation centre on elephant corridors of India. A total of 88 elephant corridors were identified being currently in use in the country of these, 14 in northern West Bengal and 22 in north-eastern India. 77.3% of the corridors are being regularly used by elephants. Odisha has about 57% of the elephant habitat in Central India with 1800-2000 elephants spread over about 11 Km² that forms about 24% of the forest cover of the state.

The importance of constituting a conservation reserve on the exterior part of the Hadagarh sanctuary holds importance from point of view of protecting the elephant movement corridors that build crucial ecosystem link between Similipal, Hadagarh and Kuldiha sanctuaries. The villages in and around these intermittent areas between the three sanctuaries have also taken to protection of the adjoining corridors and the forests. Hence the area has tremendous potential for constituting a conservation reserve.

Government's strategies

The 191.6 sq.km. Sanctuary is supervised by 3 foresters and 12 villages with 12 *Jungle Surakhya Committees*. Decreasing forest coverage and increasing water & food scarcity in the forest have become alarming, especially for the large animals, the elephants. Thus, the department with the help of local community digs small ditches and constructs check dams in the grazing zones. In addition, plantation activities are carried out. The short-term plantation is generally with banana plants and the long-term plantation is with trees like bamboo, pipal tree (*Ficus religiosa*), *aswatath* etc. Besides, plantation of *sal*, *asan*, *ashok* etc. is also carried out with the residing community. The department also maintains salt lick at places where animal gathers or near the water sources.



¹⁰<http://fracommittee.icfre.org/StateInfo/Odisha/Recommendations%20To%20Committee%20On%20Forest%20Rights%20Act%20MOEF%20&%20MoTA.pdf>

¹¹ www.envisOdisha.org & www.cesOdisha.org

There are four watch towers in each of Hadagarh, Bahiya, Pitanau and Chakratirtha in order to watch the movement of elephants. The recent construction of solar fencing keeps the animal within the forest area. This strategy also reduced the crop damage due to the animals' encroaching in human zone. The community claims that the solar fencing also reduced the harm to the animal by man. This strategy has been taken at Hadagarh and Tanla forest area.

Strategy and Action plan of the State for elephant management

The following action plan is being implemented by the State.

- Constitution of Elephant Reserves by including contiguous elephant habitats, ranges and corridors between them.
- Management of elephant reserves and other elephant habitats along with conservation of traditional migratory paths. Measures are being implemented to minimize the crop loss, house damage and human kills.
- Management of problem elephants by capture/ translocation/demonstration or other methods.
- Careful measures are being implemented for adoption of animal welfare like demonstration and use of elephants for tourism and patrolling.
- Research in elephant conservation. Education and awareness campaign among the people.
- Set up of veterinary units for sick elephants in reserves.
- Compared to the loss during last decade both on elephant population and human beings, the state is managing to prevent further loss through different management measures.

However, there has been no initiative from the government side about constituting a conservation reserve around Hadagarh sanctuary. With efforts in that direction the elephant conservation action plan may be integrated with the conservation reserve and a perspective of participatory management can be initiated.

Community initiative

The local people, the forest dwelling community of the sanctuary zone has played very important role in conservation of these elephants and forests as well. Moreover, the declaration of sanctuary or reserve only came after the community demand. The elephants get religious importance, sacredness and protection. The community's culture of worshipping deities; this all is due to religious belief attached to this species, but it is proving effective in conservation of otherwise vulnerable species. There is belief in the community that whenever there is killing or an attempt to kill or harm elephants, then the entire kingdom will suffer from 'no rain', therefore nobody dare to hurt them. The elephants are respected as King who worships for the well-being of the kingdom where the community resides. The community offers '*bhoga*' to the large mammal by spreading various fruits and *khichdi* (a type of dish usually made up of rice, dal, vegetables cooked with ghee) in the forest area during festivals.

Furthermore, both the sanctuary within & adjacent community protects the forest, ensuring survival of both the elephant and human population; they clear the reachable forest area,

allowing the timber plants to grow. They collect either small bush or dry wood as fire wood instead of cutting trees down. They unite to put off the jungle fire.

The community from Madhuban village supervises and maintains 3 kilometers length of forest of 9 sq.km. of area. The village has 150 households organized in a *Jungle Surakhya Committee*. The committee has two members each from households. Besides, there are four W-SHGs. All are Schedule Tribes. For them, the jungle provides near about 30% income annually. About 3 years before, the forest area adjacent to their village was a kind of fallow. The forest was a bald alike. The village committee united and prepared an un-written action plan to develop the forest with ensured protection to the elephants. W-SHGs make the forest clean from dry debris and plant litters; so that forest fire can easily be avoided and larger plants will grow faster. They all treat the elephant as *Gajaraj* (the Great King). Each of the years, they face crop damage, house damage by the animal, but their religious belief on the animal drives them offering at least 4-5 quintals each of mango, banana, jackfruit etc. and at least 40 quintals of paddy annually. They usually leave fruit trees near to the forest and the elephant passage un-pluck, so that the animal can be feed upon these. Last year, during summer, they too installed water in 5 large barrels and kept in the passages. The W-SHG meets, decides and acts upon on routine basis in order to keep their forest & the animal risk free. Today, the village has successfully proved its name 'Madhuban', the 'sweet-forest' where both the human and elephant live with harmony.

However, the major threat identified by the community is water scarcity during summer. The day by day hot summer is resulting into water crisis. During summer, when the animal comes out of the forest either to the reservoir or *Salandi* river, it faces cruelty of consumerism. The community is proposing afforestation in mission mode; renovation of the forest through plantation of fast growing trees. In addition, provision of water supply through pipes and tanks at the animal most-grazing points will be more beneficial. However, the community's suggestion is pending at various levels of democracy. Moreover, the community also shares their unfaith over the forest officers; many at times, they complained against the foresters helping few anti-socials either for timber or hunting.

Threat mapping

As a cautionary remark the 'Wild Odisha' report stated that it is important that no land rights are issued on such migratory corridors as it will lead to severe human-elephant conflicts entailing serious damage to lives of humans and elephants.

Chromite mines have been leased out to mining companies just outside the sanctuary area. The mine operators need to be sensitive towards the environment. Blasting even takes place at night hours which is disturbing for the wildlife. Highly luminous lights are also disturbing the wildlife for migration through the corridors.

Timber mafias operating in the area are involved in occasional felling of trees. Often one can come across the wood cutters carrying away valuable timbers on their cycles and crossing the Baitarani River at Mukundpur and Dulakhapatna of Jajpur district on boats which are sold at a premium price. What Hadagarh perhaps needs is frequent patrolling by forest staff along with awareness programs for villagers. To motivate the villagers for conservation by way of

participation entry point programs by the government needs to be taken up. Due to protected area regulations development works have been given little importance while it would be beneficial if enough development works are taken up in and around the sanctuary so that dependency on forests would reduce.

The expanding mining activities immediately outside the sanctuary have its own typical impact on forest and wildlife conservation. Hence, State needs to come up with regulations to restrict mining activities.

The dam ousters in many villages such as Dalaki, Pitanau, Kundei, Masaghati and others have not yet got their complete package. These kind of frustrations must be immediately addressed that would increase the ownership and participation of people paving ways for constituting a conservation reserve with all ideals.

RECOMMENDATIONS

The study has been significant in the context of understanding the current status of conservation reserves and community reserves in Odisha and at the same time has limitations that it could not cover the subject in a scale; both horizontal and vertical. The few case studies presented in the text are just hint lines regarding the current conservation practices in conservation reserves and community reserves; the policy directions; and also showcasing pro-activeness and inactiveness of the forest department in dealing with such an important subject wherein the community stakes are recognized in conservation affairs towards meeting the twin objective of livelihoods and conservation. The case studies presented in the study are indicative of the main issues in declaring community reserves and conservation reserves; the differences between the dogmatic scientific conservation practices and the conservation practices standing on the regime of orthodox belief systems; it has opened up dialogues for facilitating a thinking process to consider livelihoods and conservation as mutually inclusive subjects than dealt in isolation; and also has been able to scan through the available secondary literature and official information to reach a timely conclusion that they are simply inadequate. Although, as said earlier the study has certain limitations, yet on the basis of the study the following recommendations have been made.

1. It is a fact that conservation reserves and community reserves are policy subjects seeking community consent and involvement in constituting conservation reserve or community reserve specific to the policy contexts. The reserve – whether prefixed by conservation or community would therefore be an ideal habitat wherein the community and the wildlife can live in harmony. The community would be given larger stakes over the forest resources for the act of their involvement in caring the wildlife, developing and grounding a management practice. During the study it is observed that in all the study areas covered in this report the local community virtually has no awareness on the provisions in the policy documents or the WLPA at large. Except in the case of Balipadar-Bhetnoi black buck conservation community in no other area the local communities have heard of the provisions and so no awareness on the processes. On the basis of this diagnostics it is recommended that awareness on the policy provisions and

negotiations to delineate community stakes be given larger importance. While it is expected that the forest department should take larger initiative in building awareness and sensitizing the communities for an effective participatory management practice, it is also expected from civil society organizations especially those working on forests-wildlife-forest dwelling communities to take this up intensively and help avoiding any ambiguity in negotiations thereby taking a step towards reducing the risk of conflicts and misunderstanding in future.

2. There are many community conserved areas in the State that may qualify to be declared as conservation reserves and community reserves. But ironically, there is no comprehensive study on those areas. Secondary literature and official (scientific and managerial) information are also very inadequate and erratic. Further, creating a comprehensive body of information would mean studying the areas in all dimensions, e.g. sociological, anthropological, geographical, forestry, wildlife and cross-policy analysis to be able to exactly delineate the wildlife habitat, the mode of interaction between human communities and the wildlife, the extent to which the area can be extended so that it would be ecologically sound for the wildlife and economically non-controversial for the community, and many other dimensions. Although at present the potential of declaring an area as a community reserve or conservation reserve is gauged from the material evidence that the community is engaging or involving themselves in conservation, a comprehensive multi-disciplinary study would bring out many effective parameters for assessing an area and also identify management paradigms. In absence of that no area may really be adjudged 'potential' for declaration. Hence, the true potential of an area must be vividly analyzed and studied. This needs a much elaborate study. To make this study realistic, a three step approach may be considered. First; the potential areas may be listed down; second, short listing of such areas may be done in accordance to the policy provisions where the extent of area or the keystone species would happen to be very important criteria; and third, multidisciplinary studies may be piloted and further continued on the shortlisted areas. That would create a body of comprehensive and convincing information to proceed with declaration of areas as conservation reserve or community reserve as the case may be.
3. Database and dissemination: There seems to be lot of disagreement on the database of forest department and any other agency working in a similar line. The local communities are also apprehensive about the ambiguities in database implying to make them deprived of their rightful stakes. This is particularly the concern of people inhabiting adjoining areas of Protected Areas that have potential to be declared as conservation reserve. Hence a single window system to access the database and examine the database in local contexts would be quite meaningful for the larger purpose. The RCDC may take initiatives to build such portal, at least in the context of Odisha, to facilitate better access to information and also help wide dissemination so that people could make informed choices in the larger interest of livelihoods and conservation going together.
4. Cross policy analysis – There are many Acts and Policies beyond WLPA relevant to the declaration of Conservation Reserves and Community Reserves. A cross-referencing and analysis of the Acts and policies assumes importance in this regard to conceptualize synergy among the Acts and Policies in the context of Community and Conservation Reserves. The common space in the Acts and Policies need to be carefully identified so

that no Act or Policy inhibits the progress of any other. This would also help in building a convergence among Acts and Schemes within the forest department and also facilitate resource accumulation for better implementation. This would also help building a strategy line that may be placed before the forest department and State Wildlife Board for further debates and negotiations. Such a task assumes greater significance in the context of the subject under the study.

5. Entry point programs in villages falling under potential areas for declaration as conservation reserves and community reserves must be intensified. The approach should not be very akin to the approach of entry point activities done while constituting or promoting VSS rather they must be innovated looking at the peoples' needs, culture and aspirations. Not necessarily all the funds for entry point activities should be mobilized by forest department, rather an effective dimension would be to integrate implementation with public investments as under MGNREGS, OFSDP and similar other programs. That would help meeting the predictability and confidence of the communities who may in future course come under conservation reserve and community reserve.

Last but not the least, it would be of great effect if the concerned authorities in charge of wildlife conservation can upgrade their conventional approaches at par with the mandate of FRA, PESA, and WLPA with a concrete realization of the fact that local communities have demonstrated in many places that they can protect and conserve the wildlife and their habitats even at the cost of their own livelihood. The Chief Wildlife Warden and other such authorities must utilize their powers to make the norms of the WLPA little more flexible for the local communities so as to cater their bonafide needs. Because, for the communities the legal and tenorial titles for their conservation efforts matter less than a true and sincere recognition supplemented with necessary support for livelihood, skill/capacity building, and strengthening the conservation effort itself.

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Annexure- 1

Details of boundary of Betanoi- Balipadar Community Reserve

The Southern Block

Boundaries:

North: The Community reserve line of Southern Block of the Black Buck Community Reserve begins from the point where river stream of *Badandi* meets revenue village boundary line of village *Gahangu* and moves forward in clockwise direction towards east with common revenue village southern boundary of village *Bishnuchakra* and *Ramanda*. Then it follows the northern boundary of village *Kalamba (Dheuka)*. Then it moves forward contiguous to revenue village boundary of *Balipadar* on its northern boundary and meets *Buguda* to *Aska* State High Way.

East: It starts from the point where State Highway from *Buguda* to *Aska* meets eastern boundary of revenue villages *Balipadar* and moves on southern direction which is also contiguous to *Sandhasulia* Reserve Forest on its north western boundary of revenue villages *Sanabalipadar*. Then it follows the southern boundary of village *Sanabalipadar* and touch eastern boundary of village *Phapulpur* and follows contiguous to the eastern boundary of village *Danachandanpedi* and also the northern and eastern boundary of village and touches again the reserve boundary of *Sundhisulia* Reserve Forest while moving further forward it is contiguous to boundaries of revenue villages like *Santarapur*, *Dhanpunja*, *Bhejiput*, *Pandiapathara*.

South: Southern boundary starts from the southern boundary of village *Pandiapathara*, *Narayanpur*, *Bajrakata* and moves westernly contiguous to village boundary of *Bhetnoi*, *Sidhanoi*, after crossing state highway from *Buguda* to *Aska*. Southern boundary ends at the point where river *Badanadi* touches southern boundary of village *Sidhanoi* at its western most point.

West: Western boundary starts from the point where river *Badanadi* meets revenue village boundary of village *Sidhanoi* at its south western point and moves northward following upstream of *Badanadi*. Then it turns towards eastern direction following northern boundary of village *Sidhanoi* and western boundary of village *Bhetnoi* and southern boundary of village *Dhanapunja* and meets river stream of *Badanadi* again. Then it moves northern following upstream of *Badanadi* and makes a transverse of revenue village boundary of *Dhanapunja* on its western side and meets river *Badanadi* again. Then it moves upstream following *Badanadi* contiguous to revenue village boundary of *Dhanachandanpedi*, *Phapalapur*, *Gahangu* and ends at the common point where *Badanadi* and village boundary of *Gahangu* meets each other at north western point.

The Northern Block

Boundaries

North: The Black Buck Community Reserve starts from the northern midpoint at 84°45' East longitude and moves clockwise contiguous to revenue village boundary of village *Burujhola*, *Ramanda*, and *Kanjipalli*.

East: it starts from eastern boundary of village *Kanjipalli* and ends at the point where state highway from *Buguda* to *Aska* meets the revenue village boundary of *kholakhali*.

South: It starts from the point where state highway from *Buguda* to *Aska* meets southern boundary of village *Kholakhali* and then moves towards western direction along western boundary of village *Talasakar*.

West: It follows the western boundary of village *Talasakar & Burujhola* and meets the starting point at 84°45' East longitude.

Annexure- 2
Details of villages inside Karlapat Sanctury

a) Revenue villages

Sl. No.	Name of village	Household	Population	Area in Acre	Location
1	Sapmundi	69	234	202.21	Karlapat RF
2	Kiapadar	64	316	195.43	-do-
3	Gaudpadar	38	206	96.54	-do-
4	Bundelguda	Included in Sapmundi		102.04	-do-
5	Jakam	30	123	20.11	-do-
6	Belgaon	-	-	13	Jugsaiapatna PRF
7	Mandiabiri	7	51	91	Jugsaiapatna RF
8	Panchkhol	19	45	34.65	-do-
9	Daniguda	7	35	36	Jerka RF
10	Khutulguda	5	23	6	-do-
Total		239	1033	796.98	

b) un-surveyed village

Sl. No.	Name of village	Household	Population	Area in Acres	Location
1	Tentulipadar	8	27	37	Karlapat RF
2	Semilipadar	37	182	200	-do-
3	Betkot	20	88	27.50	-do-
4	Mudguda	16	73	34	Jugsaiapatna PRF
5	Harlaguda	6	24	19	-do-
6	Hardaguda	4	16	10	-do-
7	Rupangpadar	5	26	5.75	-do-
8	Gurpang	11	43	26	-do-
9	Rukunibandhel	11	39	37	-do-
Total		118	518	396.25	
Grand Total		357	1551	1193.23	

Annexure- 3

Some important community-based wildlife conservation areas of Odisha

Place	District	Species
Rugudipalli	Bolangir	Asian Open Billed Stork
Budhikhamari	Mayurbhanj	Peafowl, Rhesus macaque
Mangalajodi	Khurdha	Migratory birds
Humma	Sambalpur	Soft shelled turtle(<i>Asperadetus gangeticus</i>), Mahashir fish(<i>Tor mahanadicus</i>)
Dhanamandal	Dhenkanal	Asian Open Billed Stork
Rushikulya river mouth	Ganjam	Olive ridley turtles
Golia	Ganjam	Soft shelled turtle
Pakidi	Ganjam	Peafowl
Arjyapalli	Ganjam	Sparrow
Baliguda	Kandhamal	Bat

Note: The list is not exhaustive, and excludes the sites already discussed in this report. (This information is based on Subudhi, D. and Rao, Y.G. quoted in Rath, S., The Winged Visitors of Rugudipali, Community Forestry, Issue-24, June 2011; and also on personal communication with Sri Dillip Subudhi.)