

Market Vs Ethics: Need for Mid-path Paradigm of Conservation

Diptimayee Nayak^{#1}, Vrajindra Upadhyay^{#2}

^{#1} Assistant Professor in Economics, Department of Humanities, VSS University of Technology, Odisha, India

^{#2} Professor in Economics, Department of Humanities and Social Sciences, Indian Institute of Technology, Delhi, India

Abstract

Conservation of natural resources is drawing a significant attention worldwide. The researchers and policy makers play a decisive role in adopting different approaches to conservation. This paper analyzes the debate over different approaches like market-based mechanism of conservation and philanthropic/ethic-based conservation. It is more or less a short term versus long term approach of conservation. Each mechanism has been critically analyzed. But the optimal path of market-based mechanism and ethic-based mechanism of conservation depends on different institutions. The study has undertaken primary survey data of an Indian national park, i.e. the Bhitakanika. The focus group discussions at a village, adjacent to the national park find out different perspectives to different questions regarding selling out of nature to save it; hearts or wallets- which one is mightier?; When does philanthropy begin?; and a model for practical and viable path of conservation- a need for trade off between conservation of wildlife species and development of human wellbeing.

Keywords—Approaches of conservation, ethics, institutions, trade-off between conservation and development

I. INTRODUCTION

Conservation of natural resources is becoming a day- to-day drawing room discussion amidst hue and cry against climate change and global warming. The conservationists appeal for conservation as a means to sustain the planet from the expected disasters. Hence, conservation is becoming the quintessence of the society because most of the world's poor live in rural areas and these regions depend on the common property resources or the open access resources (Ostrom, 1992). This paper limits discussion on conservation to biodiversity of nature and natural resources. Most of the biodiversity areas or other forms of natural resources fall under the broad category of common property or open access resources like threshing grounds, grazing fields, forests, woodlands, rivers, streams, coastal fisheries, mangroves or coral reefs. These local natural bases have historically often been

communally owned. However, an asset that is every one's property is in fact no one's property (Gorden, 1954). As biologist Garret Hardin (1968:1244) in his 'Tragedy of Commons' states, 'Freedom in a commons brings ruin to all'. Thus, common property natural resources are most likely to be overused. For a greater interest of humanity, therefore, there is a need to regulate their use. Over time, due to several factors like population and economic growth, unsystematic and over exploitation, degradation of these resources have acquired wearing proportions. In the absence of effective societal control, these resources will continue to degrade, as long as the cost of extraction (mainly the labour cost) is less than the value of resources (Dasgupta, 1982). The primary focus of conservation is maintaining the health of natural world. Hence, there is an urgent need to put an end to these destructive practices. The care for conservation is based on some kind of reasoning. The reasons behind valuing these resources for conservation depend on the utility derived (the value in use or exchange, instrumental and the value in itself). Conservation ethic thus, can be categorized into two approaches, i.e., consumer conservation ethic or market- based conservation and intrinsic conservation ethic or ethic-based conservation.

II. APPROACHES OF CONSERVATION

The consumer conservation ethic is sometimes expressed by 4 R's- Rethink, Reuse, Reduce and Recycle, which leads to a sustained use of resources. When we assess the ecosystem or any of its species, this motive is backed by the utilitarian concept. The common frequent question rises why we need to assess the ecosystem today where this practice is not found in the history. In this context, the Millennium Ecosystem assessment (MEA) 2005 observes, 'Over the past 50 years, humans have changed these ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fiber and fuel' (MEA, Ecosystems and Human Wellbeing, Synthesis, 2005:1). This entails the need to assess ecosystems.

Moreover, intrinsic conservation ethic depends on the philanthropic attitude towards

conservation. It may mean the understanding of equality in valuing all the species for themselves but not as the instrumental for something. Philosophically speaking let the nature carry its value. A systematic environmental ethics does not wish to believe in the special creation of values or in their dumbfounding epigenesis (Rolston III, 1998). For the environmental ethicist, let them evolve and let the nature carry value. But the notion that nature is a value carrier is ambiguous. No value exists without an evaluator. So, only the human beings and the sentient animals may evaluate the environment but others have no options for valuing things. In the end if we analyze, this intrinsic conservation ethic is only evaluated by the human beings, not by the nature itself. In another way, we may say like, it is the human beings who sees that others have value and it is nothing but they fulfill their satisfaction by recognizing that others have value, thus intrinsic value for conservation ethic is itself instrumental in the long run. Thus, value can only be extrinsic to nature, never intrinsic to it. But, the concept 'value' is an ambiguous term as it is not clearly specified. Value is an objective property of some natural being, which would exist in the absence of man or whether this notion can only be meaningfully conceived of in the presence of a conscious observer (Rolston, 1982; Callicott, 1992).

In this context, there developed two schools of thought regarding the bio-centric approach, i.e. the bio-centric individuals and the bio-centric holism. The bio-centric approach states that, 'the nature possesses inherent value or worth and should not be destroyed by the human beings'. According to the pioneers of the bio-centric individuals, like Schweitzer (1952), Attfield (1981), Taylor (1986), the non-human beings have a worth or value or rights or intrinsic value. Whereas a bio-centric holism is defined as 'entirely indifferent to the well-being of any individual including man, focusing on the integrity, stability and the beauty of the biotic community' (Leopold, 1989). Arne Naess's 'deep ecology' fostered the concept of environmental ethics, which again spells the ethical values of conservation. Another group of pioneers move for the animal rights exclusively and thus animal rights movement. Species should be conserved as they possess a right to exist (Ehrlich & Ehrlich, 1981).

Since Adam Smith's famous work, 'An enquiry into the nature and causes of the wealth of nations' (1776), it is argued that no altruism is required in order that a market system can function well (Hampicke, 1994). But when there is no market, there can only exist two necessary possibilities for its functioning, i.e., altruism or creating pseudo-market. Thus, if we retaliate between different approaches of conservation (market-based conservation and ethic-based conservation, the former seems reliable in practical life so far and the later needs time, based on the risk factors and hope till all the human beings go

for conservation as a moral responsibility). But all the traditional market based approaches to habitat protection, national parks and other limited use areas are often resented, particularly in areas with substantial population growth and limited sources of income (Swingland, 2003). This process of utility based and polarised version neo-liberal of conservation (market oriented), conserved the resources, alienated the traditional and need-based users and hence created a gap, a conflict between the conservation ideology and the user groups. In this regard Swingland (2003:2), finds out, 'the disenfranchisement of people and their isolation from their natural habitat through conventional approaches to conservation, i.e. exclusion in the cause of conservation and natural resource planning, not only fuelled resentment and resource fragmentation but also accelerated inevitable failure.'

Even the market instruments of conservation like tax, permits, and command and control methods fail to guard the basic motive of conservation unless and until a sea- change is to be brought in creatin alternative livelihoods, efficient institutions and incentive for welfare of local poor dependent on the resources. Let's see why these markets- based mechanisms fail in conservation attempt even though these are good instruments in the general environmental resource management. It is true that environmental tax is imposed on the polluting firm or individual and industries. This tax whether to be imposed is determined by the principle of property right. But what about those whose activities pollute but they do not have the ability to pay these kind of environmental taxes? They lack the necessary purchasing power to meet their basic needs. In this case what does environment mean to them, who do not have any other means except depending on the environmental resource? Their willingness to keep the environment in tact may even be greater than their counterparts in the developed countries. But it will be rhetoric to say that these people are compelled to exploit the natural resources for their basic daily needs only. In that case the environmental tax would not be an appropriate measure. As in these cases, the polluters and the victims are the same group, then how do the economic instruments would play? So, in that case command and control measure is more preferred one. But most of the environmental policies have been framed keeping the developed countries into account, where the people have both the ability to pay and willingness to pay for better quality of environment. So far the command and control measure is concerned; it ended with compulsion, exclusion and enclosure with no rights for the traditional users. This command and control mechanism of conservation led to many displacements, loss of livelihood, and loss of traditional occupation making the poor dependent more impoverished. Can any instrument work

without providing alternative to the welfare of these sections? As a result, this method also failed in fulfilling objectives of conservation.

III. WHY CONSERVATION DID NOT SUCCEED? PROBLEMS FACED BY CONSERVATION

Due to the lack of proper formal institutions like legislation, control and even distribution, these resources are degrading day by day. The cost of degradation is borne both by the polluters/beneficiaries, who degrade these resources and the neutral doers/ victims who suffer from it. It leads to shortage of these resources with high demand for it. Thus, the conservation came into theory for the sake of high demand (scarcity of resources, with less supply), i.e., the market oriented theory and ethics behind conservation is that the neutral doers/ victims are endangered or even in the threat of extinction. But conservation can only be successful if the objective behind conservation holds same for all the stakeholders or the beneficiaries. Thus, it is a very much needed question to find, 'In what context or to what extent, the objective behind the conservation for the lawmakers be the same for the polluter victim (who breaks the rule, but still a victim as due to resource degradation, he himself will be no more able to extract/enjoy the resource/ species or the natural capital)?'.

In this context, Ehrlich and Elhrich (1997:98) opine, 'We suspect that the basic problem of conserving biodiversity is not likely to be solved until and unless a much larger proportion of the human population comes to share this view.' We cannot convince all the human beings in favour of conservation. But nature cannot also wait until all members of society have been persuaded to acknowledge her inherent values. Moreover ethical reasoning so far has been unable to tell us how much conservation is mandatory (Hampicke, 1994). So, when we go for conservation, there happens a lot many tradeoffs among physical tradeoffs and social tradeoffs, i.e., several variables like land use pattern, livelihood patterns and rules and legislations. Ecosystem services trade off with each other due to change in society's or individual's choices. Fisher, et al. (2011:152) viewed how the choices trade off with each other, 'Coastal wetlands become housing and recreation hotspots, or shrimp farms. These choices imply an increase in some services (e.g., food production) are traded for decreases in other services (e.g., carbon sequestration, storm protection). These tradeoffs often pose difficult choices for society, with different sets of winners and losers depending on the decision.' But most crucial trade off which takes place among all other physical tradeoffs is the social trade off, i.e., the change in way of searching for alternative livelihood. This has double edged effects, one is positive and another is negative.

On the positive side, people are forced to conserve. Because the policy needs to see who are related with conservation and who defy the regulation. The losers are basically local inhabitants. Mostly in South Asia the poor are close to these types of fragile resources, where conservation is the necessity. But they hardly take this into account. According to their perspectives, conservation is at the cost of their livelihood and historic privilege of user rights. Thus the tradeoff between conservation and local livelihood dependency does not maintain any equity. This is not a tradeoff between something .5 +ve change (conservation happens): something other .5 +ve change (alternative livelihood is provided or livelihood is protected), rather it became a something 1+ve change (conservation happens): something 0 +ve change or nothing (livelihood is not protected or alternative options are not created). So, this positive side is that people any how follow or forced to follow, but conservation cannot hold good.

On the negative side, conservation attempts lead to change in the nature and type of sources of livelihood dependency. The probable outcomes of choices which may be created on the basis of shift of livelihood dependency are: to shift to some other positive alternative (resource friendly), and shift to some other negative alternative (exploitative, not resource friendly). The four possible choices are (SB, PL), (SB, PB), (SL, PB), (SL, PL), where, SB is social benefit, PL is private loss, SL is social loss and PB is private benefit. Due to conservation there is a shift from (SL, PB) to (SB, PL). If shift of livelihood dependency is towards a positive alternative, then it changes from (SB, PL) in the initial stage, to (SB, PB) in the long run. On the other hand, if shift of livelihood dependency is towards a negative alternative, then it changes from (SL, PB) in the initial stage, to (SL, PL) in the long run.

Any policy can only be effective if the subjects are aware about their deeds and the concerned legislation for that. Without it, whatever may be the policy and laws are implemented, it will only be undemocratic and unjust to impose as the government has that power and authority. So, the cost of the unawareness is borne by the victims. The *polluters pay principle* does not hold in case of conservation of biodiversity for the poor. These polluters (exploiter of natural resources) do not have any other alternative of livelihood and they risk their life to breach the code of conduct (command and control fails) and do not have ability to pay tax and get permit. The only thing they can frequently do is to encroach and exploit. Then how can the conservation attempt be successful? What needs to be done? What incentives can be given? Should these incentives be individual-oriented or community-oriented? How to finance to provide these incentives? All these vital

questions can only be quenched by an integration of market, ethics and policy. What do the poor dependants need? Why they need? And to what extent the needs can be provided or fulfilled? What may be the risk factors? Does it need an evolution of institutions?

So, alternative incentive-based mechanisms are to be integrated with creation of different new institutions. These institutions are Eco development committee (EDC), ecotourism committee, community development committee etc. with implementation of different community development schemes/ programs for community management and governance for conservation.

IV. ROLE OF INSTITUTIONS FOR MARKET BASED AND ETHIC BASED CONSERVATION

The success of policy regarding conservation and management of natural resources depends on different institutions. These institutions constitute the beneficiaries of the conservation of natural resources. Institutions are the expressions of the terms of collective human experience. It reflects the ways people interact with one another and the ways they interact with their environment. Further, these are the means people use to solve social problems (Cortner et. al.1998). Cortner et al. (1998) have broadly considered two types of institutions, viz. Formal institutions (like administrative structures) and informal institutions (like customs and practices). There has been increasing interest to address the role of local communities and institutions in the management of natural resources and ecosystems (Johan, Folke & Elmqvist, 2003). Ostrom (1992) defines institutions simply as working-rules, or rules-in-use, meaning ‘the set of rules actually used by a set of individuals to organize repetitive activities’. Berkes (1995), defines institutions as ‘codes of conduct that define practices, assign roles and guide interactions; the set of rules actually used’. He addressed the role of Traditional Ecological Knowledge (TEK) in management practices and social mechanisms for conservation of biological diversity. In particular he focussed on the management of diversity to secure a flow of resources and ecological services on which the local social-ecological system depends.

‘Management practices in local communities do not exist in a vacuum but are framed by a social context. Hence, they tend to be coupled to and embedded in informal institutions and other types of social mechanisms, that are supported by a worldview and cultural values that do not de-couple people from their dependence on natural systems’ (Berkes et al. 2003 as in Colding, Folke & Elmqvist, 2003: 35). Murty (2010) discussed about three alternative types of institutions for control of environmental pollution,

viz. (a) market; (b) government; and (c) community or associations of people. Among these three alternative types of institution government and market forces are believed to be the sole agency of managing the natural resources. Apart from these traditional sources of managing natural resources, the most potential institution for the same is local people or community participation. The last institution helps in achieving the objective of the market and the government. Thus, these institutions are interrelated and interdependent. But for a successful management of natural resources the basic socio-economic and demographic variable should be taken care of by both the market and the government. Although these are not reflected fully by the market forces, government can frame a pseudo market forms to get these variables in order to frame appropriate policies for the management of natural resources. Feeling the pulses of the local community and the nature of the demand created by them is not at all an easy task. A proper and friendly cooperation between the government representatives (local authority for managing natural resources) and local community is the quintessence for a successful management. A misinterpretation of the local demands and a monopoly on the part of the government in natural resource management may harvest the bad consequences. Therefore, Holling (1986) aptly argues that badly adopted nature-society interdependencies lead to frail ecosystems that over time lose the capacity to defend and incorporate natural disturbances.

The institutions for the market based mechanism for the conservation include all the stake holders (like households, tourists, local people who depend on these ecosystem and all other people who value these ecosystem), the different legislation and the national and international institutions and NGOs (like IUCN, WCPA etc). Likewise institutions for the ethic-based conservation are based the religion, religious scriptures, informal code of conduct, believes, cultural aspects, and informal norms etc. All these institutions account for the conservation.

Table I : Approaches of conservation and preference assumptions

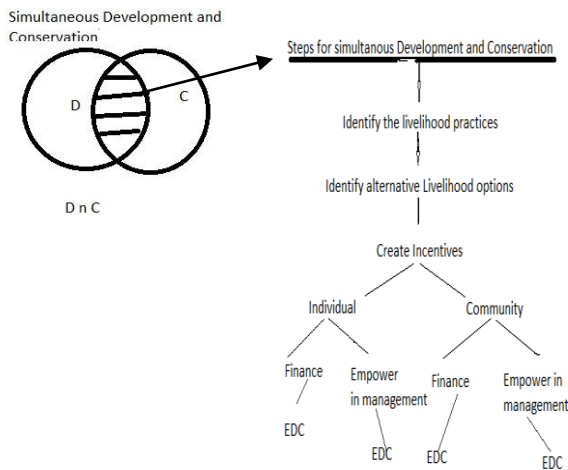
<i>Market-based Conservation</i>	<i>Ethic-based Conservation</i>
Demand- strong order	Demand- weak order
Right based like justice – weak order	Right-based- strong order
Endangered- strong order	Endangered- strong order
Livelihood – weak order	Livelihood– weak order
Laws of conservation- strong order	Laws of conservation- weak order
Stakeholders- strong order	Stakeholders- weak order
Utilitarian- strong order	Utilitarian- weak order

Use Values- strong order	Intrinsic values- strong order
Philanthropic- weak order	Philanthropic- strong order

V. INCENTIVE-BASED MODEL FOR CONSERVATION

For successful conservation an integration of all the conventional measure with the new mechanisms is necessary. Thus, in addition to traditional mechanisms of conservation, alternative methods of biodiversity conservation should be developed which can generate viable and sustainable desired livelihood options. It is now widely recognized that, given the lack of public funding, biodiversity conservation must start to pay for itself, otherwise biodiversity, and perhaps even human race, are in jeopardy. In the forestry sector, policy makers are beginning to heed this advice by shrinking command and control systems in favour of incentive mechanisms that seek to align private gain with the public good (Swingland, 2003).

Fig. 1 : Simultaneous development of human wellbeing and conservation of wildlife



VI. STUDY AREA

Bhitarkanika mangrove wetland is an area of 145 Sq.kms. has been notified as national park, vide the notification no.19686/F & E, dated 16.9.1998 of Forests & Environment Department, Government of Orissa. It has much significance with regard to ecological geomorphologic and biological background which includes mangrove forests, rivers, creeks, estuaries, back water, accreted land and mud flats. Prior to its national park status, it was declared as a wildlife sanctuary, vide notification so.6958/FF AH dated 22.04.1975, over an area of 672 square kilometres. The Sanctuary comprising mangrove forests, rivers, creeks provide home to the already

endangered salt water crocodile (*Crocodile Porosus*), listed at the Red list of IUCN. Besides estuarine crocodile, the sanctuary is a treasure of avifauna mammalian and reptilian population. Olive Ridley nesting site of Gahirmatha marine drive adds the beauty to this wetland. These mangrove forests are good habitat for King Cobra, Indian Python and Water Monitor Lizard. A large number of water birds visit Bagagahan heronry. During 2002 the Bhitarkanika mangroves having an area of 2672² kilometre, which is the second largest mangrove wetland in India, was declared as a Ramsar site being a wetland of international importance.

VII.METHODOLOGY AND DATA COLLECTION

The data was collected from a periphery village of Bhitarkanika national park, (i.e. Bankual, which lies closest to the entry point of the park) through structured and semi-structured questionnaire schedules. It was basically a door to door household survey (n=49) during 2010-11. Moreover, three focus group discussions (FGD) among the villagers were organized to find out the common issues, conflicts and debates, which were not unambiguously drawn out from the individual door to door household survey. The first FGD was consisted of 12-15 elderly local people to know about the governance of national park resources, traditional ecological knowledge and practices, rules and regulations, issues and conflicts. The second FGD was consisted of the young people (between age group 18- 45) to explore about livelihood options and alternatives and the management of tourism and tourists and the potential employment and income sources and problems. The third FGD was consisted about ladies and women in order to find their actual dependency on national park resources, handicrafts produced out of these resources, cultural practices, conservation of mangroves and biodiversity and views about ecotourism and sources of finance.

Considering the household to be one of the single largest stakeholders in getting the welfare effects of the conservation efforts and programs, we tried to get information about the costs and benefits of conservation for them, e.g., income level (infrastructure (employment status, market, road, light, pattern of house), Ecotourism benefits (economic {employment, potential of employment, market, potential of market, benefits from different schemes of conservation}, social (community development programs, social infrastructure, relation between national park and the people), cultural (love towards their place to be conserved, love their place to be centre of attraction, heritage conservation), aesthetic(natural beauty, satisfaction of knowing that they are a part of rich ecosystem) and the non-welfare effects like conflicts, causes and nature of conflict [open conflict or rooted]. Their attitudes towards

conservation and reasons for the same may signify the welfare effects of conservation.

These data represent the broad category of economic, social, cultural and environmental (aesthetic) aspects of conservation, which was interpreted in cost-benefits terms.

VIII. SELLING OUT OF NATURE TO SAVE IT!! HEARTS OR WALLETS- WHICH ONE IS MIGHTIER?

Economic benefits provided by natural ecosystem form the basis of most market oriented mechanisms for conservation (Daily, 1997). The underlying assumption is that if scientist can identify ecosystem services, quantify their economic value and ultimately bring conservation more in synchrony with market ideologies, then the decision maker will realize the folly of environmental destruction and work to safeguard nature (MEA, 2003; McCauley, 2006). Market based mechanism of ecosystem conservation is very much criticized by McCauley. He aptly holds the view that market-based mechanisms are not a panacea for our current conservation ills. If we mean to make significant and long lasting gains in conservation, we must strongly assert the primacy of ethics and aesthetics in conservation. McCauley (2006:27) states, 'We must act quickly to redirect much of the effort now being devoted to the commoditization of nature towards instilling a love of nature in more people'. He cited the example of Catskill/Delaware Watershed, New York City, where market-based mechanism investment in conserving a watershed works very efficiently. Thus by citing only one example of a successful market based mechanism for conservation, the environmental scientists, economists and ecologists held with optimism proclaim that if there is a golden nugget, there must be others. He is skeptical about the ecosystem services as one of the market mechanisms of conservation tools. He raised the question that the nature also produces *Ecosystem disservices*.

Thus, market-based conservation strategies, as currently articulated, offer little guidance on how we are to protect the chunks of nature that conflicts with our interests or how to preserve those ecosystems which neither help nor harm us. He has taken four tools of conservation into consideration, Viz. Ecosystem services, Markets in flux, Watershed down, Infinite value/ intrinsic value. By taking all these tools and examining, he was of conclusion that economics language is not be the panacea for the long term goals although it may serve good in short term. Thus, a philosophical clarity/outlook should be taken into account in trading a short term gain versus a long term profits. It is only the intrinsic value or cultural/aesthetic value which the ecologists termed should be the tool for conservation although it is

incongruous. Therefore, it may be asserted that, 'we will make progress in the long run by appealing to people's hearts rather than to their wallets' (McCauley, 2006:28).

During a focus group discussion at a village near Bhitarkanika national park, the local people hardly know anything about 'selling the nature'. But they are much aware about national parks as an important tourist's destination. They were very much dependent on this ecosystem for their basic needs. They know that every part of the mangroves is useful for them. They used to collect fish, crabs, fuels; mangrove leaves [(pinchha, local name) for thatching their house, making rope, broom], honey etc from this ecosystem. They are no more allowed to eke their living by depending on these resources now. Sometime they encroach the site to collect these products by taking risk. But now they are convinced that they can use this resource indirectly by developing resorts for tourists, hotels, canteens, restaurants, parking places, tourist's guides and other periphery market items. They know that this ecosystem is like god for them, they are protected from cyclones many times, they have experienced. But the disservices like destruction of crops by wild animals, loss of life of domestic animals, loss of human life, causalities by the wild animals are the main threats for them. They want a mutual cohabitation. But do not want their crops to be destroyed by these animals. They can only make money out of nature based tourism. For this they need finance to get basic infrastructure to attract tourists to stay with them. Since last year (2009-10) the forest department has set up a fund raising unit from tourist's revenue. It collects 10% of each boat fare without fuel to BEES (Bhitarkanika Eco- tourism and Eco- development Society). The canteen at the national park area is managed by the village eco development member (community members) and is funded by the BEES. It is in the nascent stage of its operation and it plans to gradually fund the eco-development committees and community development schemes.

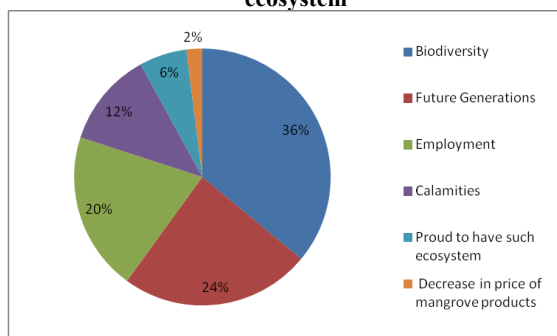
IX. RESULTS AND DISCUSSIONS

During a focus group discussion at the village Bankual adjacent to Bhitarkanika mangrove national park, we found the revolute emotions as if stirred against the present system of conservation. The fellow expressed his feeling as, 'Crocodiles have enough worth here, but we the human beings don't have.' Most of them showed their yards indicating how plants are being eaten by deer as soon as the plants germinate. These are the main causes of conflicts. People do not want that the tourism resort permit should be given to private parties outside the locality. They are much interested for managing at the community level or as paying guests. These may become a source of income for them. To develop

these infrastructures, they need finance to set up tourist resort by using the no cost low cost local resources. Their average per month seasonal income earning from tourism activities ranges between Rs.500/- to Rs. 1500, whereas there mean household income is Rs. 2137.5. Among them 32% of households are landless and the mean house holding is only 1.04 acre, 62% belong to wage labourer category, 62% work in agriculture sector and 30% in other sectors. About 24% people are seasonally unemployed. But still 100% people want to conserve the ecosystem, which shows their hearts over their wallets for conservation.

Regarding alternative sources of livelihood, they viewed approximately 36% for bee-keeping, 29% for ecotourism related activities, 34% for poultry and 1% for others. Although ecotourism is in a nascent stage at that place, still they opt to take this as a livelihood option. This shows that they want to use the aesthetic/ scenic/ wildlife beauty to the tourists for the sake of nature’s conservation.

Fig. 2 : Reasons of conserving mangrove wetland ecosystem

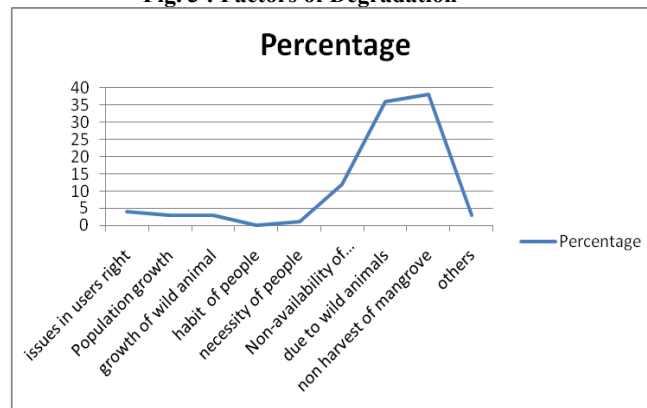


The various reasons for which they want to conserve are maintaining biodiversity, future generation, scope of employment, stands against natural calamities, and availability of mangrove products and feel proud to get such rich ecosystem. The major reasons for conservation for the local people are biodiversity conservation (36%), and for posterity (24%). These results show that although these people are very poor, still they recognize the conservation of biodiversity as the most important purpose of conservation, which shows their philanthropic sense over their poor income earnings. As it is a coastal belt and frequently prone to cyclones and storms and they have experienced it in 1999 super cyclone in their area, still they view conservation of biodiversity as the majority reason even over the option of taking these ecosystem as a protecting force of natural calamities. This shows the aesthetic sense, which proves hearts are mightier than the wallets.

Among several factors of degradation which get a major share are periodic non-harvest of

mangrove products, wild animals it selves, non availability of any alternative livelihood and etc.

Fig. 3 : Factors of Degradation



From this result (Figure 3), it is found that wild lives are responsible for the mangrove degradation. The people very much complain that the wild animal like porcupines destroy the mangrove, while it germinates and thus mangroves are degrading. Another factor which is held as a major factor for degradation is periodic non-harvest mangroves. After the declaration of the national park, the mangroves are not being harvested. But the traditional knowledge says that mangroves should be periodically harvested for their proper growth. This was revealed while interacting with a focus group discussion with the village elderly people. The conservation here does not take care of the traditional ecological knowledge and is one of the reasons for degradation of mangroves.

Taking all these into considerations, it is apparently clear that ethics still can rule over as a dominating factor of conservation, and incentive based conservation approach really opens up alternative avenues of livelihood which may make conservation attempt a successful one. The caveat that follows the discussion is that market-based mechanism cannot solve long term problems of conservation attempts, but ethics can, if it can be properly addressed, fulfilling the basic necessities of people. This is not only meant for the market mechanisms of conservation, but it is the classical thought about market forces. The classical economic paradigms based on pioneer like Smith, Malthus, Ricardo and Mill hold the testimony that market mechanism although can solve many of the problems generated from economic activities in the short run, but is not capable to handle the indefinite issues which persist over a very long period. The much emphasis on the ‘Degrowth movement’ in the European countries also symbolically indicates the flaws of market mechanism for its undue attempt of creating so called growth and development by exploitation of natural resources. The only alternative

mechanism left is the mechanism that can aim for long term sustainability in use of resources and bring conservation to a reality, and that mechanism is based on ethics- self control, morality and altruism.

ACKNOWLEDGEMENTS

The previous version of the paper was presented at the Biennial Conference of the Indian Society for Ecological Economics (INSEE) at the Centre for Economic and Social Studies, Hyderabad, India, 20-22 October, 2011.

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