

CHAPTER 29

A Review on Strategies for Community-Based Biodiversity Conservation (CBC)

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Abstract

The best way to conserve the biological diversity is by involving the local community. It is popularly known as community-based biodiversity conservation (CBC). The conflict between the nature and local communities who have stakes and rights in their territory is a matter of great concern. Likewise, when there prevails the community diversity, what would be the role, participation, share, stake, management issues, equity parameters etc. are the factors that affect CBC. However, CBC is future of conservation of natural resources. It needs adequate focus of community-scale projects on biodiversity conservation implemented by different parties and NGOs. Similarly, empowering community people through adequate financial support and appropriate monitoring and evaluation are the key success factors of community conservation projects. Ethnicity, gender and wealth were the factors that predicted CBC. Hence, the CBC programmes must address these aspects with adequate emphasize. The conflict between human activity and biodiversity conservation, if handled very effectively, will be a productive strategy to highlight pragmatic problems that arise at the field level and creating equitable and sustainable solutions. The general threats as a result of conflict between human activity and biodiversity conservation are agricultural intensification, recreation and human activities and policy related threats. Hence, awareness creation must have an integrative and interdisciplinary approach including the bodies that administer social and natural movements as well as the interests and priorities of local communities.

Governing biodiversity conservation measures through political processes by engaging the appropriate representatives has valid implications for the whole process of biodiversity conservation. Alienation of local community, lack of favorable legal framework and lack of addressing the conservation issues through political process may adversely affect the biodiversity conservation as a whole.

Inculcating biodiversity conservation through political process needs the active participation of actors of social movements, progressive academicians who promote the scientific strategies of biodiversity conservation and the non-governmental organizations that promote the local community in biodiversity conservation and try to influence the political processes towards biodiversity conservation. Such active participation may redefine and reconstruct the perspectives of multiple cultural and ecological processes being practiced among communities. The participation and partnership can be ensured through addressing the rights of local community, legitimately managing the issues of biodiversity conservation through local community and effective communication among the related parties. Community-based enterprises such as ecotourism provide profitable alternate livelihood opportunities for local community and hence need adequate financial support from the developmental departments and agencies. These enterprises also need priority in licensing and getting business opportunities, so that the interests of the local community in biodiversity conservation may be sustained. Promotion of biodiversity conservation needs systematically planned empirical studies on scaling-up of strategies for community-scale biodiversity projects, role of agriculture and farmers in biodiversity conservation, role of group and cooperative approaches in promoting biodiversity conservation, capacity building of stakeholders and the resultant impact, partnership and linkages between related stakeholders and the final outcome and entrepreneurship opportunities for promoting CBC. Results of such empirical studies are very much important for promotion of CBC.

Introduction

The best way to conserve the biological diversity is by involving the local community. It is popularly known as community-based biodiversity conservation (CBC). It is people-centric. Hence, building the capacity of local community who has rights as well as stake in the biodiversity is the key in facilitating CBC.

The CBC connotes differently to different actors. Conservationists observe CBC as an opportunity for resource management and conservation, while development organizations look forward to link conservation with development opportunities for local community. While conservation activists talk about empowering local community towards sustainable conservation and biodiversity

management, the human resources activists fight for conserving as well as building the knowledge and culture of local community participants who has rights in natural resource management and biodiversity conservation. Hence, to understand the actual meaning of biodiversity conservation, it is better to understand the national and international level projects on biodiversity conservation like CAMPFARE in South Africa and their impact.

Understanding the legal framework in conjunction with national political process, history and institutionalization may provide a complete picture on CBC. Similarly, the rights of locals, their culture in tune with democracy, social justice and equity need adequate understanding. The role and equitable rights of projects on CBC. The conflict between the nature and local communities who has common stakes in their territory is a matter of great concern in settling the equity issues. Likewise, when there prevails the community diversity, what would be the role, participation, share, stake, management issues, equity parameters etc. need special emphasis and adequate attention (Brosius *et al*, 2008).

Community-Scale Projects

Community-based biodiversity conservation is the future of conservation of natural resources. It needs adequate focus of community-scale projects on biodiversity implemented by different parties and NGOs. The community-scale projects must address the interests of conservationists and local community as the means to conserve, manage and develop natural resources available and as the solution to habitat degradation. Similarly, empowering community people through adequate financial support and appropriate monitoring and evaluation are the key success factors of community conservation projects (Horwich and Lyon, 2007). Conservation initiatives must result in tangible social (improved governance for NRM with equitable resource benefits), environmental (enhanced availability of water, wild edible plants, small construction materials) and economic benefits (income from marketable forest products) to the communities (Darlong, 2013).

Biodiversity vs. Human Activity

The conflict between human activity and biodiversity conservation, if handled very effectively, will be a productive strategy to highlight pragmatic problems that arise at the field level and creating equitable and sustainable solutions. Inclusive stakeholder strategies, effective communication between parties about the issues and relevant solutions and the livelihood opportunities may serve beneficial in biodiversity conservation. The general threats as a result of conflict

between human activity and biodiversity conservation are agricultural intensification, recreation and human activities and policy related threats. Awareness creation about the relevant programmes and effective monitoring and review of such programmes are the strategies to implement biodiversity conservation programmes by overcoming the conflicts that arise due to human activities (Young *et al.*, 2005). Such awareness creation must have an integrative and interdisciplinary approach including the components of bodies that administer social and natural movements as well as the interests and priorities of local communities.

Biodiversity-Based Conflicts

Human presence and indiscriminate resource-use pose a serious threat to biodiversity. However, the presence and activities of local communities and their informal monitoring activities contribute as well as secure biodiversity conservation. Very strict conservation measures, affects negatively the natives and local communities who depend on natural resources, thus enforce the need for CBC. Hence, providing alternate livelihood opportunities for the natives and locals may be one of the strategies to involve them in biodiversity conservation and surveillance like the model implemented by Eco-development Project in Great Himalayan National Park (GHNP). But such projects must be planned around specific objectives and not with broad-based aims. Such conservation projects should admit collaboration of conservationists, local people, concerned development departments and social activists.

The difference of opinion among the practitioners and the community is also a factor that needs adequate attention, which may be addressed through adequate capacity building. The other important factor that has stake in success of community-based conservation is the difference between conservationists and the development personnel, which may due to the differences in the goals itself. This can be addressed through arranging mutual partnership at all levels (Lis and Arja, 2003), so that the objectives are met without any compromise from that of a participating component. Governing biodiversity conservation measures through political processes by engaging the appropriate representatives has valid implications for the whole process of biodiversity conservation. Alienation of local community, lack of favorable legal framework and lack of addressing the issues through political process may adversely affect the biodiversity conservation as a whole (Chhatre and Sabewal, 2005).

The basic approach of biodiversity conservation is based on two factors- (i) environmental sustainability and (ii) community empowerment and participation. Peoples' practical approaches to 'sustainability' as compared to 'conventional approaches' could greatly differ, but sustainability is bes

achieved with consideration of (a) security of tenure over natural resources; (b) favourable social context and dynamics; (c) free, prior informed, transparent and impartial decision making process; (d) openness to collaboration with agencies having similar objectives; (e) building strong and committed local leadership and capacity; (f) gender balancing and involvement of youth; etc (Darlong, 2013).

Issues of Community Participation

The local community as social capital, their livelihood options and the biodiversity are interwoven and inseparable. Hence, participation of local community and the relevant and interested institutions are very much important for successful biodiversity conservation programmes. It needs adequate empowerment of local community by including their knowledge and practices in planning stage. It is also important to ensure the active involvement of relevant government and non-governmental departments who have adequate stake and interest through mandated programmes as priority. Another issue to be given utmost importance is addressing the participation of women, disadvantaged groups and minority and empowerment of these people towards biodiversity conservation. A sustainable model for bio-diversity conservation can only be ensured through such participation of marginalized sectors.

A multi-disciplinary team of all the related stakeholders should be constituted to plan and implement the initiatives heading towards conservation, land-use strategies and the resultant human welfare of the participating community. Participatory planning may be the right way to create awareness and familiarize the possible development opportunities and feasible options of biodiversity conservation and institutional arrangements for legal framework and the possible benefits adhering to such framework (Luis *et al.*, 2005). It needs capacity building of the local communities and the other stakeholders at all stages and levels. The participatory planning, conservation and developmental interventions in the local bio-system will not only help to cultivate ownership feeling among local communities, but ensures more sustainable and holistic ecological management.

The development goals of government and priorities of local community are to be matched, if the local community to be maintained as an indispensable social capital to contribute towards biodiversity conservation. The participation of local community may be of five different ways, viz., (i) passive just as clients, consultative as providers of ideas and knowledge-bearers of local diversity to the outside conservationists, NGOs and the development officials, (ii) active as the participants of the alternate livelihood opportunities and programmes, (iii) functional as the participants of the participatory biodiversity

conservation, (iv) interactive as the empowered members of vibrant and well-conceived, planned and implemented programme at all stages and (v) self-mobilizing as a completely empowered groups who plan, implement, monitor, evaluate and build the in-group capacity with external facilitation of interested stakeholders. In all these categories, the conservation programme may be successful, if the participation of local community is in terms of functional, interactive and self-mobilizing.

Participating groups should be mobilized as self-empowered vibrant groups and to be federated as appropriate bodies at higher levels to influence the political process as well as the regional and national bodies that facilitate biodiversity programmes. This type of group-based activity may give direct link to poor and disadvantaged groups to the development programmes and their benefits. This arrangement may pay at time when the social movements may not pay for biodiversity conservation due to lack of livelihood options for the native community (Pretty and David, 2004). Emphasizing moral stand point of view, empowered legitimacy, participatory governance, ensuring accountability and involving local political representatives are the key factors of social and political process of biodiversity conservation (Brechin *et al.* 2002).

Conservation occurs as a result of interaction between nature and culture. It is thus, the biodiversity is being conserved and sustained. Social movements around the word address and rather promote such conservation through interaction between nature and culture. The local communities have the cultural as well as the ecological attachment to their own territory and thus tend to interact with the nature and thus conserve biodiversity. However, unless the biodiversity conservation is linked to the political processes, it may not be formalized. Inculcating biodiversity conservation through political process needs the active participation of actors of social movements, progressive academicians who promote the scientific strategies of biodiversity conservation and the non-governmental organizations that promote the local community in biodiversity conservation and try to influence the political processes towards biodiversity conservation. Such active participation may redefine and reconstruct the perspectives of multiple cultural and ecological processes and practices being practiced among communities (Escobar, 1998).

As discussed earlier, the best conservation results are achieved by forging practical alliances between the traditional village institutions and Community-based organizations (CBO) with equitable participation of women and youth. Participatory conservation initiatives that build upon existing social capital for improved common ownership and appropriately guided by common benefits through equitable access to biodiversity and benefits sharing could achieve lasting and more sustainable results. Linking of developmental and employment

programmes such as United Nations Development Programme (UNDP), National Watershed Development Project for Rain-fed Areas (NWDPA), integrated wasteland Development Programme (IWDP), Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA) etc. to the CBC may be mutually helpful in achieving the respective objectives of the programmes.

Partnership in CBC

Participation in biodiversity conservation and management does not ensure actual conservation and management of biodiversity. It is the adequate appropriate partnership that would bind government, agencies and communities through effective coordination. The best example comes from South Africa, wherein 25 biodiversity hotspots are managed through effective public-private partnership. The experience from Germany too confirms that partnership is the best way to conserve biodiversity conservation. North Eastern Region Community Resource Management Project for Upland Areas (NERCORMP), a joint project of International Fund for Agricultural Development (IFAD) and Government of India (GoI), implemented in the states of Assam, Manipur and Meghalaya, has been successful in community mobilization, education and institution building towards better bio-diversity conservation in North East India, which is rich in biodiversity.

The participation and partnership can be ensured through addressing the rights of local community, legitimately managing the issues of biodiversity conservation by involving local community and effective communication among the related parties. However, ensuring participation of disadvantaged groups, their interests, not addressing the empowerment of concerned community, lack of investing adequate time and resources, lack of planning through bottom-up approach, lack of addressing the basic needs and mutual interest of the community and conservationists and the competitive livelihood opportunities of the local communities were the constraints in ensuring effective participation through partnership mode (Stoll-Kleemann, 2002).

Biodiversity-Based Enterprises and Ecotourism

Biodiversity conservation directly depends upon the improvement in livelihood of the local community. Biodiversity conservation and nature's protection may be achieved in terms of economic development through appropriate incentives and compensation. It is also to be noted that strict enforcement of natural boundaries and territories gives failure results towards biodiversity conservation. The local community, if they benefit from the nearby forests and other natural habitats financially, then they will definitely come forward to

safeguard the sources that provide them livelihood opportunities. Because such conservation may help them to have sustainable livelihood opportunities to meet their basic needs. Though the local communities explore the bio-reserves for their livelihood in terms of food, fodder and fuel, they have been successful over centuries to keep the delicate ecological balance intact. It can be further argued that the uncontrolled developmental interventions put forward by the political system have only created the imbalance and conflict among the inmates of the ecological system.

A network of biodiversity conservationists may bring together conservation and development processes and the different operators such as scientists, development personnel, local community, political representatives, policy makers etc. Such network may establish enterprises that depend upon forests and natural habitats, so that the local community may have financial dependency in a sustainable manner. Ecotourism, distillery units of essential oils of forest products, preparation of jams and jellies and other forest-based food products may be the possible enterprises that may bring profitable opportunities to the local community. Artisans from local community can be trained and their handicrafts and similar products may be promoted through community trade fairs and other marketing channels. These community-based enterprises need adequate financial support from the development departments and agencies. These enterprises also need priority in licensing and getting business opportunities, so that the interests of the local community in biodiversity conservation may be sustained (Salafsky *et al.*, 2001).

Conservation initiatives are best achieved if the economic needs of the communities are addressed by providing revolving funds for micro-credits, building capacities of the communities for income generating activities and providing avenues for sustainable income and livelihoods opportunities. Organizing and building the capacities of the women in particular to address their household needs (firewood, drinking water, small livestock and kitchen gardens for income and nutrition, etc.) go a long way in achieving the community based biodiversity conservation objectives (Darlong, 2013).

Community-based ecotourism (CBET) has become a popular and effective tool for biodiversity conservation. It is based on the principle that ecotourism pay for the practitioners and biodiversity itself through adequate financial security as a base for sustainability of biodiversity. In spite of its vast scope, projecting ecotourism for a smaller area involving a few representatives of the community and competition from the already established tourism industry are the limitations that affect CBET. Hence, the objective of CBET should be to address very specific issues and not on multiple issues. CBET efforts must

have concrete goals on both conservation as well as the socio-economic development of the local people. It should have its objectives planned through site-specific analysis. CBET needs strong research on how to establish link between multiple goals, community priorities and the appropriate incentives needed for achieving such goals.

Arranging direct benefit for the participating local community through ecotourism may benefit for proliferation of CBET. Indirect incentives in the form of subsidy and credit assistance programmes may motivate the local community to participate in the CBET with adequate interest. Promotion of CBET needs careful consideration of feasibility of such initiatives in the particular territory. Cost-effectiveness and comparative advantage with focused and equitable approach may also encourage the local community to participate in CBET in an overwhelming way (Agnes, 2004).

Though enhanced commercial activities in the local bio-reserve may increase the financial capacity and socio-economic status of the local community, the adverse effects of more population and resultant pollution/destruction of the natural environment may also be considered and hence appropriate mitigation measures should be planned.

CBC and Agriculture

Linking ecologically sustainable agriculture to natural resources management and biodiversity conservation to get sustainable and equitable impact at human-dominated landscapes has been emerging as alternative livelihood option in the areas that has been affected by intensive agriculture. This approach recognizes farmers as the stakeholders of biodiversity conservation in their respective territories. This approach calls for designing and applying economic instruments for encouraging farmers to conserve tree cover and adopt and promote bio-diversity friendly cropping systems. Such instruments may include enacting environmental friendly legal framework for preventing deforestation, regulation of cropping systems and sequences, conservation of on-farm tree cover, promoting agricultural productivity enhancement programmes to prevent extra land coverage, addressing land tenure issues and promoting organic cultivation by reducing chemical usage in agriculture. The strengthening alliance between farmers, scientists who promote the concept of both agriculture and biodiversity conservation, officials of forest departments and conservation biologists, introducing biodiversity friendly certification programmes and leveraging political support for biodiversity conservation are also some important aspects to be considered while linking CBC with agriculture (Harvey *et al*, 2008).

CBC and Carbon Mitigation

Deforestation is a major contributor to Green House Gas (GHG) emission. Burning of fire woods, shifting cultivation and forest fires may lead to increased emissions to the atmosphere. Under such scenario, forestry mitigation options can play an important role in non-fossil fuel energy economy. Forest can play as an efficient carbon sink. Community forestry has been reported to be very effective contributor for clean-development mechanism (CDM) with co-benefits such as biodiversity conservation and the resultant rural development. In that way, the local communities are very well positioned to effectively implement community forestry. Community forestry has popularly been advocated as CDM in Mexico. In India, in 1985, the National Wastelands Development Board was established by the Government of India to promote the production of fodder, fuel and minor timber on wastelands, by involving local communities and voluntary agencies. The scientific forestry management can very well be combined with common property management systems practiced by forest dwellers and the local community at background principles of biodiversity conservation, carbon sequestration and the resultant rural development opportunities.

Lack of capital for such programmes, lack of technical know-how as well as link between technical professionals and the local community, lack of capacity building on skill development and anti-forestry activities promoted by the illegal business operators, who facilitate and promote deforestation have been the issues to be addressed while promoting carbon mitigation through community participation. The CDM as a result of carbon mitigation strategy may convert carbon savings into considerable foreign exchange. For example, the estimates of ministry of Environment & Forests, Government of India show that the annual CO₂ removals by forest and tree cover in the country is enough to neutralize 11.25% of India's total GHG emissions (CO₂-equivalent) at 1994 levels. Putting a conservative value of USD 5 per tonne of CO₂ locked in India's forests, the huge sink of about 24,000 MT of CO₂ is worth of USD 120 billion, or Rs 750,000 crore (7,500 billion) (infochangeinida.org). Such inflow of funds can very well be invested for social movements towards carbon mitigation through community forestry, enhancing technical and managerial skill competencies of the related stakeholders and disseminating biodiversity conservation strategies among the local communities (Klooster and Masera, 2000).

Factors Predicting CBC

Adequate infrastructural facilities are needed for CBC. This may lead to gain of faith by local community on CBC. For example the efforts towards

community-based eco-tourism have been receiving adequate support from all the corners. However, the benefits accrue to a few dominant locals, leaving the actual intended beneficiaries. In such cases, adequate skill training on entrepreneurship activities may address the targeted clients. Similarly, community-forestry is another aspect through which the local community may gain economical livelihood opportunities. However, the territory management in community-forestry may bring inclusive benefits to all the stakeholders. Ethnicity, gender and wealth were the factors that predicted CBC. Hence, the programmes must address these aspects with adequate emphasize (Mehta and Kellert, 1998).

Studies on Biodiversity Conservation

Promotion of biodiversity conservation needs systematically planned empirical studies with adequate evidences in the following lines (Siebert *et al*, 2006):

- Scaling-up strategies for community-scale biodiversity projects
- Role of agricultural systems in biodiversity conservation
- Role of group and cooperative approaches in promoting biodiversity conservation as in Australia, Canada, Holland and Switzerland.
- Capacity building of stakeholders and the resultant impact
- Partnership and linkages between related stakeholders and the resultant impact
- CBC and entrepreneurship opportunities

Results of such empirical studies are very much important for promotion of CBC.

Conclusions- Strategic Framework for Ensuring CBC

It is the participation and partnership of the local community through which the biodiversity conservation (CBC) can be achieved. The local community who has right and stake in the nature must be given various options of livelihood opportunities through community-scale projects. Empowering the local community through appropriate political process, while effectively addressing their interests and concerns, should be the basic strategy. Empowering local community also means mainstreaming the disadvantaged groups and women. The development departments interested in biodiversity conservation must arrange for adequate infrastructure in terms of financial aids and facilities needed. Appropriate legal framework for conservation and resource-use by local community, monitoring of progress and evaluation of impact, etc., needs

to be planned and implemented. Projects and organizations that promote community conservation initiatives should also be able to provide guidance to the communities on existing legal and policy issues as well as support linkages with such policies for ultimate linkages with existing formal system to impact policy dialogue and initiatives. Conservation-based enterprises run by the local community need adequate support in terms of awareness creation, finance and marketing strategies etc., so that there will be no issues for the local community as far as their basic livelihood needs are concerned. These efforts need all round support from all the concerned stakeholders such as local community, development personnel, conservationists, scientists etc. at all levels through strong participation and partnership. It needs capacity building of all the stakeholders at different stages and levels of community-scale projects.

In a nutshell, if the biodiversity conservation and management efforts, to be successful in a sustained manner, then the conflicting interests of local community must be met through profitable livelihood options that are in tune with the biodiversity conservation principles such as biodiversity-based enterprises, agricultural systems, carbon mitigation strategies etc. Such promotion needs also support from all actors of biodiversity conservation at all levels either through active participation or strong partnership through appropriate political process that empower and build the capacity of the local community in a sustained manner (Fig.1).

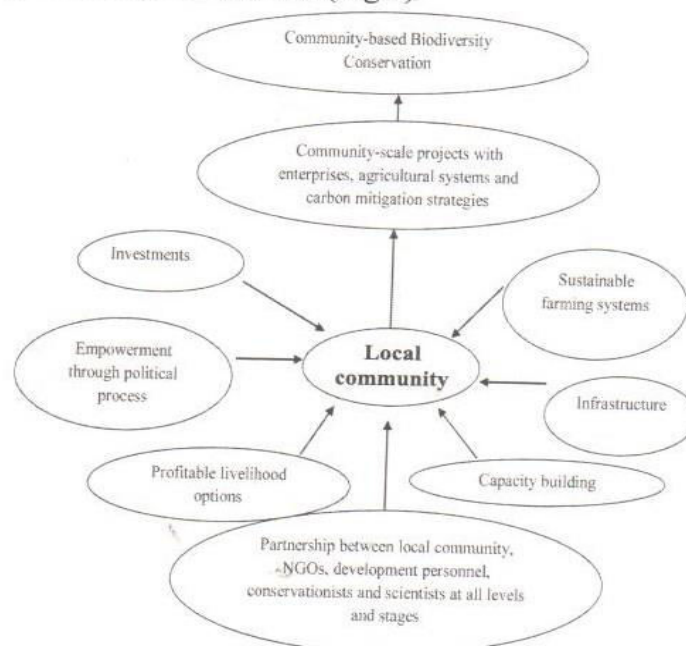


Fig. 1: Strategic framework for community-based biodiversity conservation

Though community based biodiversity conservation interventions can be achieved with low investment while ensuring high multiplying gains, the associated processes of community mobilization, education and institution building for conservation require initial effective processes of mentoring and nurturing apart from confidence building measures of local community.

References

- Agnes Kiss. (2004). Is community-based ecotourism, a good use of biodiversity conservation funds? *Trends in Ecology and Evolution*. 19 (5):232-237.
- Brechin R Steven, Wilshusen R Peter, Fortwangler L Crystal, West C Patrick. (2002). Beyond the square wheel: Towards a more comprehensive understanding of biodiversity conservation as social and political process. *Society and Natural Resources*. 15: 41-64.
- Brosius Peter, Tsing Anna Lowenhaupt and Zerner Charles. (2008). Representing communities: histories and priorities of community-based natural resource management. *Society and Natural Resources: An international Journal*. 11(2):157-168.
- Lisa M Campbell and Arja Vainio-Mattila. (2003). Participatory development and community-based conservation: opportunities missed and lessons learnt? *Human Ecology*. 31(3): 417-437.
- Escobar Arturo. (1998). Whose knowledge? Whose nature? Biodiversity, conservation and the political ecology of social movements. *Journal of Political Ecology*. 5 (53-82).
- Harvey Celia A, Komer Oliver, Chazdon Robin, Ferguson G Bruce, Finegan Bryan, Griffith M Daniel, Martinier-Ramos Miguel, Morales Helda, Nigh Ronald, Soto Pinto Corena, Breugel Micael Van and Wishnie Mark. (2008). Integrating agricultural landscapes with biodiversity conservation in the Mesoamerican Hotspots. *Conservation and Policy*. 22 (1): 8-15.
- Horwich H Robert and Lyon Jonathan. (2007). Community conservation: practitioners' answers to critic. *Oryx*. 41 (3): 376-385.
- <http://infochangeindia.org/environment/community-forests-of-orissa/india-s-forests-as-carbon-sinks.html>; Last accessed August 28, 2013
- Klooster Daniel and Masera Omer. (2000). Community forest management in Mexico: Carbon mitigation and biodiversity conservation through rural development. *Global environmental Change*. 10 (2000): 259-272.
- Luis D Liambi, Similon K Julia, Nancy Pereira, Ana Carlota, Periera Francis Valero, Maximina Monasteria and Maria Vicenta Davila. (2005). Participatory planning for biodiversity conservation in the high tropical Andamans. Are farmers interested? *Mountain Research and Development*. 25 (3): 200-205.
- Mehta N Jai and Kellert R Stephen. (1998). Local attitudes towards community-based conservation policy and programmes in Nepal: a case study in the Makalu-Barun Conservation Area.
- Pretty Jules and Smith David. (2004). Social capital in biodiversity conservation and management. *Conservation Biology*. 18 (3): 631-638.
- Salafsky N, Cauley H, Balachander G, Gordon B, Parks J, Margoluis C, Bhatt S, Encarnacion C, Russel D and Margoluis R. (2001). A systematic test of an enterprise strategy for community-based biodiversity conservation. *Conservation Biology*. 15 (6):1585-1595.
- Chhatre Ashwini and Saberwal Vasant. (2005). Political incentives for biodiversity conservation. *Conservation Biology*. 19 (2): 310-317.
- Siebert Rosemarie, Toogood Mark and Knierim Andrea. (2006). Factors affecting European farmers' participation in biodiversity policies. *European Society for Rural Sociology*. 46 (4): 318-340.

- Stoll-Kleenmann Susanne. (2002). From participation to partnership in biodiversity protection: Experience from Germany and South Africa. *Society and Natural Resources*, 15:161-177.
- Vincent Darlong. (2013). Learning from Community Based Biodiversity Conservation in Northeast India. International Fund for Agricultural Development (IFAD). Available at <http://asia.ifad.org/web/india/blogs/-/blogs/81669?&> ; Last accessed August 28, 2013.
- Young Juliette, Watt Allan, Nowiki Peter, Alard Didier, Clitherow Jeremy, Henle Klano, Johonson Richard, Lazzko Endre, McCracken Davy, Matouch Simon, Niemela Jari and Richards Caspian. (2005). Towards sustainable land use: identifying and managing conflicts between human activities and biodiversity conservation in Europe. *Biodiversity and Conservation*. 14: 1641-1661.

