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**The role of ethnoscience in the build-up of ethnoconservation as a new approach to nature conservation in the tropics.( The case of Brazil)**

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**Introduction**

The objective of this discussion paper is to discuss the role of ethnoscience ( particularly ethnobiology and ethnoecology) in building a new approach to nature conservation in the tropics called here *ethnoconservation*. The departure point is a critique of the classic/hegemonic approach for protected areas conservation that is far from achieving

its main ecological objectives in tropical regions, in addition to create serious problems for indigenous and traditional peoples. According to this approach traditional (indigenous) peoples and traditional communities should be expelled from their territories when transformed into no-take protected areas or forbidden to maintain their livelihood based mainly on the use of natural resources through small scale agriculture, fishing and forest extractivism .

In the hegemonic approach for nature conservation only natural sciences, particularly biology and botany are used in the planning and management of these no-take protected areas. It is being internationally recognized, however, that traditional peoples and communities can play a crucial role in nature conservation through their traditional knowledge on living species and habitats as well as through their socioeconomic and symbolic practices..In this connection, ethnoecology is called to play a crucial role as a bridge between natural and social sciences. Ethnoscience, in addition to social participation, respect to social rights and livelihood of the traditional peoples and communities is a cornerstone of new models and approaches to nature conservation and protected areas in the Tropics that are here defined as ethnoconservation. Ethnoecology can be defined as « an interdisciplinary approach exploring how nature is seen by human groups, through the screen of beliefs and knowledge and how humans use or manage natural resources. ».( Toledo, 2001 :7)

In Brazil, since the late 80's, as result of the struggle of rubbertappers( seringueiros) and other traditional peoples and communities in protecting the tropical forests against deforestation in the Brazilian Amazon new sustainable use protected areas are being established all over the country particularly in forest and coastal/marine realms (Schwartzman, S 1989). These new reserves are requested and supported by social movements and traditional peoples/ communities and their establishment and management are based mainly on traditional knowledge and practices as well as on social and natural sciences, becoming an important social experiment field for *ethnoconservation*.

### **The conservation approach based on no-take protected areas in the Tropics.**

The hegemonic preservation approach to conservation based on no-take protected areas is being criticized, particularly in Southern Countries by social movements, socio-ecological organizations by a growing number of biologists and social scientists for the last 20 years ( at least).( Gomez-Pompa and Kaus, 1992 ; Balée, 1993 ; Diegues,.1996,1999 ; Toledo, 2001 ; Mac Chapin, 2004 ; Sarkar1998 ; Bahuchet et al.2000 ; Chimere-Diaw, 2008)

The hegemonic approach to conservation is based on:

a) The notion of « *wilderness* » which appeared mainly in US in the middle of the XIX century, in the establishment of no-take zones from which human beings, including indigenous people, should be expelled.(Sarkar, 1998, Diegues, 1999)

b) on the *naturalist notion* that every human being and all societies independently of their rationality and social organization are, per se, a threat for the nature.Human beings are equivalent to threats in the language of most of the conservationist organizations.

c) *importance of natural sciences*. For the planning and management of these protected areas. In most cases only natural sciences are used in spite of the presence of traditional people/communities and their traditional knowledge about forests and seas in most of the territories where these conservation areas are established. According to the hegemonic view conservation is not a social practice but derives from the application of natural sciences .

d) *lack of involvement of local social groups*.

No-take protected areas, established without consultation with people living in that territory are considered by the « preservationists » to be the only way to protect biodiversity, also understood only in natural sciences terms. Police force and repression are often used to « protect biodiversity and top-down approaches hinders any democratic way of managing biodiversity with indigenous people living inside those parks. »

The transfer of the « wilderness model » to Third World Countries resulted in the *expulsion of indigenous peoples* from their territories and in serious constraints on their traditional way of living of local populations, violating their land rights and compelling many of them to social marginality.( Mac Chapin,2004)

As « wilderness » transforms territories indigenous people into a « *no place* » where no social relations may exist, the only sciences considered to be useful are natural sciences. IN countries such as Brazil, the expansion of this model was possible since the 60's through an alliance of preservationists NGOs, natural scientists and State bureaucracies, particularly during the military regime ( 1964-1984) when many no-take protected areas were created, mainly in the Amazonian region.

A new wave of no-take occurred in Brazil in the 80's onwards with the arrival of the *BINGOs* ( *Big International Ngos*).They came with funds, influence, concepts and strategies to implement protected areas programmes. Some of them bought land to transform into no-take zone, often using local Ngos as intermediaries and creating suspicion among nationalistic political forces.It became clear that « wilderness » was not an isolate concept, but it came associated with a philosophy ( deep ecology) and a natural science model- Conservation Biology . Initially some of them were more involved on community based conservation (CBC), but more recently they embarked in the so-called « global conservation » (Diegues, 2008)

In the beginning Bingos were interested mainly in the establishment no-take protected in isolation and their science was based on elements of the ecosystem theory and conservation biology.(Chimere-Diaw, 2000 ; Sarkar, 1998 ; Guha,1997). In spite of that, many natural scientists dealing with biodiversity conservation take an ideological position far from the so-called objective approach. For many of them biodiversity conservation became a new religion or dogma of the urban atheists.( Nelson, 2011) Most of the agenda proposed and conducted by the BINGO's takes conservation as a « natural » issue ( protection of biodiversity, of endangered species) and discussion on issues such as science and power, power and conservation is avoided. (Chimere-Diaw, 2000).In fact, the discussion of conservation as also a political aspect, as in countries

like Brazil the territory covered by protected areas are larger than many large European countries.

In the last decade they launched the so-called « global » conservation that was based on concepts and strategies of large scale such as hot spots , biological corridors, large scale landscape, bio-regions.( Chimere-Diaw, 2008), This large scale conservation was more in line with the concerns of « global » institutions such as the World Bank, some big North-American Foundations and Private Corporations that participate in the boards of the BINGO's. The definition of above mentioned concepts excluded local populations, although the larger the scale the bigger is the risk of not seeing local populations that live in the forests and coastal areas of the Southern Countries.(Mac Chapin,2004-Mark Dowie,2006)

As an example, in February 2006, USAID launched the Amazon Basin Conservation Initiative, comprising countries located in the area. The programme was based on a large scale conservation that ultimately would be implemented by North-American BINGO's. The Brazilian Government rejected such as plan on the argument that it was not even consulted.(Diegues, 2008)

In fact, since the beginning of the 90's the BINGO's ( particularly WWF, CI and TNC) have organized national workshops to define biodiversity conservation priorities ( hot spots). Some central concepts, such as biodiversity, were defined differently by natural and social scientists in Brazil. In the process coordinated by BINGOs for defining « hot spots » for biodiversity conservation only natural variables are considered in spite of the fact that in tropical forests many of these hotspots are inhabited by Traditional peoples ( and other traditional groups) that used the forest for centuries.( Toledo, 2001)

These historical, cultural relationships and social practices ( slash and burn agriculture, traditional management , etc) that resulted in the « pristine » situation of the forests are not taken into consideration by most of the conservation biologists. In the rare occasions where a social scientists is called for the workshops to define conservation areas, his/her role is to enumerate « threats » to biodiversity.(Diegues, 2008)

*Social Scientists* were absent in the debate until mid of the Eighties when a new category of protected area – The extractive reserve- was created. as result of the fight of the rubber-tappers against deforestation and loss of territory and access to natural resources. One crucial element in this process is the recognition that forest peoples have

an important contribution to conservation through their traditional knowledge and management of natural resources. Since then, traditional knowledge and management were proposed as an important contribution for the planning and implementation of the sustainable use reserves..These reserves were also supported by at that time strong political movement- The National Council of Rubber-Tappers and by some eco-socially oriented local and international NGOs, that were able to influence conservation policies in the country.

From the 80's onwards there was a series of *conflicts* between the preservationists ( Government environment officers and NGOs) that controlled the State environmental bureaucracy in one side and socio-environmentalists and social movements/social environmentalists in the other.(Diegues, 1999). This conflict became clear during the meetings that preceded the National system of Protected Areas (SNUC), finally approved in 2000 by the Congress. For the first time the presence of traditional people in no-take protected areas was officially recognized ; the establishment of protected areas should be made through public hearings, Two categories of sustainable use protected areas were officially created : the Extractive Reserves and the Reserves of Sustainable Development.Since then more than 33 forest extractive reserves and 14 marine extractive reserves were created, occupying an area of 6 million ha and benefiting over 10.000 families.Reserves of Sustainable Development are also being established particularly in the Amazonian Region. In these reserves, land is State owned and given as concession to the Associations of the Reserves users. These associations and Deliberative Councils are the local instances that take decisions in association with the Chico Mendes Institute from the Ministry for Environment. which appoints the Reserve Director.

One of the main outcomes of these reserves is the creation of « *new commons* » ( *common property regimes*) as the land ( and also the sea, in the case of marine areas), although is State owned is given back to the reserve associations as long term concessions. Many challenges exist for the actual consolidation of these reserves in social, political and environmental sustainability terms. As they are newly created, they represent an important field of social and environmental experiments, of cooperation among social and natural sciences.

## **Traditional peoples rights and Government policies**

Since the end of the military regime ( 1984) and the beginning of a new democratic period, important social movements appeared in Brazil, among them the Landless People Movement, the Indian organizations, the National Council of Rubber-Tappers, the Artisanal Fishermen organization, the « quilombola »movement ( descendents of African slaves).In December 2006 the Federal Government has established the National Commission for Traditional Peoples, in which Indian and Traditional Communities participate. This commission comprises Indian peoples, quilombola communities( descendents of African slaves), Amazonian Caboclos, artisanal fishers, caiçaras, inter alia. In another official document- Policies for the Sustainable Development of Traditional Peoples and Communities, issued in 2007 they are defined as social culturally distinct social groups recognized by themselves as such, having their own social organizations, basing their livelihood in the use and management of natural resources.

The main features of traditional peoples are

- a) strong economic and symbolic ties with the land and the sea through continuous observation of natural cycles;
- b) attachment to continual use and occupancy of a specific group territory which allow a community to reproduce itself through ongoing traditions of communal and family land and sea tenure;
- c) where subsistence activities continue to play a vital role in their economy, production for market is also becoming important.
- d) individual/family ownership of means of production;
- e) limited accumulation of capital;
- f) crucial socio-economic relations that are structured along family, domestic, communal kinship lines;
- g) the use of relatively simple technology, with limited impact on the environment;
- h) positions of marginality from political power bases that tend to be concentrated in urban centers;
- i) oral traditions responsible for the production and transmission of knowledge, symbols, myths and rituals associated with artisanal fishing, forest harvesting and small scale agriculture;
- j) social identity is a fundamental issue.

## **Basic Principles guiding an Ethnoconservation approach**

This approach, in the process of elaboration in different tropical countries is based on research, socio-ecological thoughts and social practices on biodiversity-nature conservation that emphasize the need for the involvement of traditional peoples, their culture, social organizations, traditional knowledge and management. Ethnoconservation is guided by principles such as

A) Nature conservation for traditional peoples is the result of *social practices* and associated knowledge, management, perceptions and ethics and not seen as an isolated issue from other aspects of their culture, as it happens in Western industrial/urbanized societies.

B) Adequate nature conservation has to be based on the *recognition of the rights* of traditional peoples to live with dignity in their own territories. The notion of territory to which they are attached is fundamental for traditional peoples as their culture, social relations and traditional knowledge are produced there.

The 'territory', which a particular society claims as its own grants to all or to a part of its members stable rights of access, control and use for all or part of the natural resources located there, that they desire or are capable of utilizing (Godelier, 1984). This territory furnishes, first of all, the nature of humans as a species, but also the means of subsistence, the means of production and the means of producing material aspects of social relations, such as kinship relations. (Godelier, 1984)

The respect for their livelihood, besides the guarantee of staying in the territory of their ancestors, should include adequate access to health, education, infrastructure and also their decision to change aspects of their culture in contact with other cultures. (Bahuchet et al. 2000)

C) *Biological diversity can only be protected when cultural diversity is respected and vice-versa.* There is evidence that many forest areas put aside to be transformed in protected areas ( particularly national parks) are inhabited by indigenous peoples. This overlapping is not accidental but as it has been shown by many researchers (Toledo,2001 ;Diegues 1999: Alcorn,1993;Gomez-Pompa, 2000)

The high biodiversity existing in indigenous territories is the result of traditional knowledge and management practices

*D)-Traditional knowledge and management practices are fundamental for biodiversity conservation.*

*Traditional knowledge* may be understood as a distinct cognitive realm: on the one hand consisting of a replicable, orally transmitted set of specialized skills and culturally shared practices and beliefs that have stood the test of time, enabling people to make a living from different environments such as forests, savannahs coastal and marine environments, relying on artisanal techniques; on the other hand traditional fishing knowledge exists in more encompassing symbolic and conceptual frameworks governing social relationships and spiritual connections to the various habitats of their territories.( Diegues & Cordell 2001)

It can also be defined as a cumulative body of knowledge and beliefs handed down through generations by cultural transmission about the relationship of living beings ( including humans) with one another and their environment. (Berkes, 1993)

This repertory of knowledge is at same time individual and social.On the basis of this knowledge traditional peoples and communities take decisions on where, when and how to plant or to fish, utilize a multi-use strategy that maximizes the variety of goods produced providing the family with basic requirements throughout the year. (crops, fish, handicrafts.etc)

The construction of this body of complex and detailed concepts and symbols is based on a long term empirical observation and is applied to rather small areas used by local communities and seldom can be replicated elsewhere..

As Ruddle points out (2000, p.282)

Resource use patterns are products not of their physical environment and its resources per se, but of their perceptions our culturally formed images of the environment and its resources. Thus, to properly understand human ecological relationships, an understanding of a society's local knowledge base, and the cognitive system that underlies it is crucial .

The social appropriation of the nature implies not only an extension of social relationships on land and the accumulation of local environmental knowledge. It also involves the formation and symbolic expression of links with the spiritual world. Conceptions and representations of the natural world and its resources differ greatly

between the subsistence and market-oriented societies. Godelier (1984) argues that these two societies have different rationales, and each displays a system of social rules consciously elaborated to best attain a set of objectives. According to this anthropologist, each economic and social system creates a specific mode of exploitation of natural resources and use of the human labour force and, consequently, utilizes specific norms of good and bad use of natural resources.

E) *Biodiversity is also maintained through social values that reveal a particular cosmovision of traditional peoples and communities.* According to this cosmovision nature has a sacred-non market value and land as well as water and sea are primary sources of their livelihood.( Toledo, 2001;Berkes, 1999).In this connection, their representation and classification of the territories they occupy and their elements ( forest, water, natural processes) are the core of their culture and the origin of their identity ( Marques, 1995. Toledo 2001)

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According to Godelier ( 1984), at the heart of our material relationship with nature there is an underlying non-material bond that unites the three key functions of knowledge: to simultaneously represent, to organize and to legitimize our social relations and our the relations with nature. In order to understand the process of material production, it is essential to understand symbols and myths used by traditional peoples to represent nature and its beings.

Thus, together with defining a space for economic reproduction and projecting principles of social relations, terrestrial and marine territories can also be the locus of representations and of the mythological imagination of these traditional societies. The intimate relation of these people with their surroundings, and their greater dependency

on the natural world when compared with urban-industrial societies, result in the cycles of nature (the arrival of schools of fish and the abundance of crops) being associated with mythical and religious explanations.

One of the main outcomes of these reserves is the creation of « *new commons* » ( *common property regimes*) as the land ( and also the sea, in the case of marine areas), although is State owned is given back to the reserve associations as long term concessions. Many challenges exist for the actual consolidation of these reserves in social, political and environmental sustainability terms. As they are newly created, they represent an important field of social and environmental experiments, of cooperation among social and natural sciences.

An ongoing debate surrounds the natural resource conservation function of these mythological beings. In other words, are traditional peoples aware of the ecological intentions of these cultural practices. Can such practices actually facilitate conservation or be viewed as “conservationist”?

Darrel Posey, ( 1992) uses the emic/ ethic approach to discuss the issue of intentionality related to traditional practices. According to him, in some conservationists’ minds traditional practices that limit overexploitation of resources can be considered to enhance or support biological conservation, in the modern, scientific sense. For Posey, this interpretation falls into the category of an ethic approach that is developed by the researcher. On the other hand, in the mind of a traditional people ( the emic approach) the function of beliefs about the behaviour of mythical beings may turn out to be something quite different. Fear of being punished by super-natural beings may function, for instance, to discourage capital accumulation and social differentiation in societies organized along egalitarian lines. In this connection, an emic approach to explain these practices is unlikely to be deliberately “conservationist”:, at least not in the sense this concept is defined in the Western science.

F) Participatory approach and empowerment Ethnoconservation applied to protected areas establishment and management requires a continuous and strong participation in the decision of what type of protected area is going to be established, which is the role of local associations in the decision making process, in monitoring and evaluation. Empowerment is primarily related to the control of the territory to be transformed into protected area and the recognition

by the authorities of the social and cultural rights of the traditional peoples and communities involved.( Pimbert. and Pretty,J 1997)

### **The needed dialogue between natural, social sciences and ethnoscience.**

The recent importance given to sustainable use reserves in Brazil, in which local communities play a central role,made evident that *Conservation is a social* ( and epistemological ) practice involving the protection and sustainable use of natural resources.(Larrère, 1997 ; Diegues, 2000 ; Toledo,2001) It requires a organic cooperation between social, natural sciences and traditional knowledge.. There are at least two questions concerning this cooperation : first, there are still few social scientists working in conservation because they think that nature conservation is a feud of biologists and they do not want to be « contaminated » by geographic-biological determinism. Second, there is a difficulty in finding a common ground (methodological) to work together given different methodologies of natural and social sciences. As long as some biologists think that the central concept for nature conservation is « wilderness » from which human beings must absent and only « pristine environments » have to be protected the space for colaboration is reduced. At the same time as long as some social scientists consider « nature » only a social construction the cooperation with natural scientists is doomed to fail.

The fact is, however, that some few social and natural scientists started cooperating in the planning and management of sustainable use protected areas is a good start point. Often ethnoscience ( ethnoecology,ethnobiology, ethnoichthyology, etc) is being used as a bridge between social and natural scientists.

Therefore, there is a need to improve cooperation among social sciences in order to understand conservation as a social practice, that apperead in a given historical and political context of modernity. Some disciplines have been more involved in the conservation debate, particularly history through environmental history, environmental geography and sociology, political ecology but there is litle interaction among them in the tropics. In some Southern countries, the crucial role of political ecology to understand conservation has almost disapeared, although it was important in the Seventies in countries such as Brazil (Diegues, 2008)

Some concepts and approaches such as « ecosystem approach » used by biologists were not built in order to integrate social and cultural dimensions. More recently, this approach became a kind of dogma as in some important international conventions, such as that of Biodiversity where it is being recommended as the only possible approach to biodiversity conservation. As far as conservation biology is concerned, even biologists ( at least in Brazil) recognized that the methodology is unable to incorporate the social and cultural dimensions of conservation. Concepts such as landscape, co-evolutionary process, as result of interactions between society and nature are more appropriate to deal with the relationships between society and the environment.

An important contribution to incorporate ethnoecology into ethnoconservation was done by M. Balick and P. Cox 1996 when they propose that « a new and very important branch of ethnobotany might be termed as « - *the incorporation of indigenous conservation models into wildlands biology* » including the role of traditional healers.. »

This multitiered effort has linked the mutual interests and activities of local healers, farmers, students, ethnobotanists and pharmaceutical researchers to the conservation of the main source of materials and ideas : the area's forests. These forests serve as both a classroom and a source of raw materials for local health practitioners....Clearly, one priority for the future is to involve indigenous colleagues in ethnobotanical research as co-investigators and to train a new generation of people from a variety of cultures to initiate studies among their own people...We believe that indigenous peoples, if given proper information and granted status as equal partners are capable of plotting their own future.( Balick and Cox, 1996 ; 199,201, 207)

## **The Role of ethnoscience in Brazil**

*Ethno-science, in particular ethnobiology/ethnoecology, is one of the fastest growing area of research and knowledge in Brazil, attracting a large number of biologists interested not only on traditional knowledge and management but also on the socio-cultural aspects of nature conservation. Although in many of thesis and papers, the social groups in which this knowledge is constructed are seldom analyzed, ethno-science is contributing to a more socially/ecologically oriented conservation.*

In Brazil, the studies and research on traditional knowledge were initially done by anthropologists such as Baldus (1937), Levi-Strauss (1976), , Berta Ribeiro (1986), Laure Emperaire (1978), Janet Chernella (1986), Darrel Posey (1987), particularly among Brazilian Indians.

From the Eighties onwards ethnosciences emerged as an important field of research, particularly in the domain of ethnobiology, ethnobotany, ethnoecology undertaken by researchers from the natural sciences. In 1986 Darcy Ribeiro coordinated an important reader called *Summa Etnologica Brasileira*, and Berta Ribeiro organized the first volume ( Ethnobiology) with the contributions of authors such as Levi-Strauss, Robert Carneiro, Ghilleen Prance, Darrel Posey), among others

It is interesting to notice that the increase of these studies coincided with the emergence of Indians and traditional communities as new social actors linked with the discussions on nature conservation as a reaction to the destruction of forests and loss of Indian languages and territories. Also in the beginning of the 90 took place in Belem the First International Symposium on Ethnobiology, with the participation of national and international researchers as well as representatives from Traditional Peoples. In this event was important the participation of the anthropologist-ecologist Darrel Posey who had already established relationship between nature conservation, traditional knowledge-management and the need to protect traditional knowledge. This last issue was taken by the Convention on Biological Diversity, signed in Rio de Janeiro during the UN Conference on Environment and Development in 1992. In this Convention it is clearly stated that Governments should respect and protect traditional knowledge, and guarantee the a fair benefits distribution to local communities when their knowledge is used for commercial purposes.( article 8 j)

In 1996, as result of the growing interest in ethnosciences, particularly ethnobiology/ethnoecology, the Brazilian Society of Ethnobiology and Ethnoecology was created. It organizes a national meetings every two years in addition to regional workshops. Although the majority of participants are from natural sciences, researchers from different social sciences and representatives from Traditional Peoples also participate. (<http://www.etnobiologia.org/sbee/apresentacao/apresentacao.php>).

A survey undertaken in 1990 ( Diegues and Arruda 2001 ) reveals that until the 80.s from 900 papers selected on traditional knowledge and management in Brazil around 44 percent were on Indians and were taken in the majority by anthropologists. From the Nineties the situation has changed as almost 60 percent of the publications

were on non-Indian peoples ( traditional communities resulting from the mixing of European, Indians and Black Africans) , covering different disciplines of Ethnoscience. Among the most studies traditional communities were the *quilombolas* ( 77 percent), *Amazonian caboclos* ( 67 percent), *artisanal fishers* (61 percent), *caicaras* ( 60).

The increase in the academic production on ethnoscience can be explained from the 90 s onwards can be explained by the fact that many natural sciences students were unhappy by the fact that they would like to make field work with traditional communities ( fishers, peasants) and there was no discipline on human ecology in their Department of Biological Sciences. Ethnobiology and ethnoecology emerged as a bridge between natural and social issues. At the same time, disciplines on these issues started to be offered in some university institutions ( Universidade Estadual da Bahia, Universidade Federal de Sao Carlos (SP) , Universidade Federal de Santa Catarina) The conferences organized by the Brazilian Society for Ethnobiology and Ethnoecology also offer a floor for research presentations for a growing number of students.

It can be noticed that the interest on traditional knowledge and management is related to a growing concern on the fate of indigenous peoples and traditional communities threatened by the occupation of their territories by the expansion of agrobusiness, dams, harbours during the last two decades. The loss of Indian languages and peoples all around Brazil ( not only in the Amazon) is closely related to the destruction of forests and waters from which they depend to live. In this connection, the loss of traditional knowledge is a concern also for those who study this issue.

International Conventions, such as the ILO 169 Convention, the activities of the UN Forum of Indigenous Peoples, the Convention on Biodiversity, calling Government and Society to respect traditional peoples rights and knowledge have stimulated the interest in Brazil for the study on traditional knowledge. In several Government documents is stated that traditional knowledge should be used, in conjunction with science in the fields such as protect areas planning and implementation, research and sustainable use of natural resources( fisheries, forest) but in practice this seldom occur. Among the reasons that hinder the use of traditional knowledge in the above activities there are the limited number of people trained in ethnoecology-ethnobiology, the limited knowledge on the social context in which the traditional knowledge is produced ( Bahuchet et al. 2000) the limited number of social scientists working in these fields, the resistance of some officials in recognizing the positive role of traditional knowledge, the political weakness of traditional peoples, inter alia.

## Conclusions

Ethnoconservation is a new approach to nature conservation under construction in different tropical countries, based on interdisciplinary cooperation and on experiences of the Traditional Peoples through their knowledge nature management practices. Ethnoecology and ethnobiology as other branches of Ethnoscience are called an important role as a bridge between social and natural sciences in this process. It takes also the contribution of Political Ecology, as ultimately nature conservation is a controversial one, in a scenery where different social forces and classes have different and often conflictive views. (nature conservation versus agrobusiness, dam constructions, tourism, etc) Traditional Peoples are a new player in this hard game, politically weak and their strength depend on different kind of alliances both nationally and internationally, Many of them are under severe threats from hard development projects as well as from ill conceived conservation initiatives that lead to territorial expropriation, loss of identity, language, culture and territories.

It is also becoming clear that new approaches to conservation, taking into consideration the complex relationships between societies and environments are needed in Brazil as well as in other tropical countries based not only in protected areas. The possibility of establishing protected area of any kind is reaching its limits in terms of land and conflicts. The simplistic and still dominant, hegemonic approach of national parks as « conservation fortress » is not performing well in spite (or because) of authoritarian practices, ideological views of wilderness, of lack of interdisciplinarity (including ethnoecology and traditional knowledge) in spite of funds and political influence of big international NGOs.

New social and ecological practices are required and have to be built based on an interdisciplinary approach that take into consideration also local/traditional knowledge, social and democratic participation. In some southern countries such as India, Brazil, Mexico and many others new approaches and experiences in nature conservation that take into consideration biological as well cultural diversity are being constructed. Some people call this new approach : *ethno-conservation*.

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