

Towards Better Practice

In Protected Areas and Technology Transfer

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Nature Kenya (the EANHS) (Kenya)

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Presented at the Seventh Conference of Parties
United Nations Convention on Biological Diversity
Kuala Lumpur, Malaysia
2004

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The publication of this booklet has been supported by a consortium of donors, including SwedBio and the Netherland Ministry of Spatial Planning, Housing and the Environment (VROM). The opinions expressed within the booklet are of course those of the authors and contributors alone.

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PREFACE

Success in the implementation of the Strategic Plan for the Convention on Biological Diversity's (2002-2010), and of the application of the Convention articles, requires the thorough involvement of the main players involved in its implementation. Foremost among these players, alongside with governments, is civil society.

As a contribution from civil society toward the implementation of the convention, this booklet is a collection of good national level case studies, best and worst practices and lessons learned in Protected Areas and Technology Transfer, the main topics to be addressed at COP- 7. The insights, experience and expertise of NGOs presented in this booklet provide a complementary perspective to official decision-making and policy-setting. With this publication, we have illustrated- through case studies and shorter examples - the strengths and weaknesses, the opportunities and mistakes of policy decisions as actually played out on the ground and perceived by civil society. Not all the lessons are easy ones, and in citing any one country's actions, we do not intend to single out a particular country. We suggest that the mistakes are common ones that many regions can learn from. Likewise, in presenting the successes of better practices implemented, we recognize and acknowledge that many governments and members of civil society are working to implement the Convention with vision and passion. In total, the booklet expresses the civil society's engagement with policy development and implementation of the Convention on Biological Diversity.

The booklet has its origin in discussion among the NGOs tracking the deliberations and outcomes of the Convention over the past several years. The Environment Liaison Center International has been facilitating the exchange of information amongst a large number of civil society groups following the Biodiversity Convention since 1995. ELCI was asked in 2002 to organize the publication of a number of case studies on best and worst practices in protected area management and technology transfer for the 7th Conference of the Parties of the Biodiversity Convention

We recognize that biodiversity conservation and sustainable use underpins all sustainable development; yet biodiversity is not yet recognized as essential to such international frameworks as the Millennium Development Goals and the World Trade Organization.

Redefining the nature of protected areas to empower, not marginalize, indigenous peoples and local communities, and understanding technology transfer to be a means of equitable sharing of knowledge and relevant technology between nations and peoples are both powerful means to achieving both biodiversity and poverty alleviation targets.

Rosario Ortiz
Barbara Gemmill

1.0 PROTECTED AREAS: BETTER AND WORST PRACTICES

1.1 INTRODUCTION

Parties to the Convention on Biological Diversity are going to decide on an ambitious Programme of Work on Protected Areas, at COP7 (Kuala Lumpur, 9-20 February, 2004). It is instructive that one of its main proposed programme elements is "Governance, participation, equity and benefit sharing". This element includes the following goals: to "promote equity and benefit-sharing", and to "enhance and secure involvement of all stakeholders including local and indigenous communities". It is hoped that the cases and analysis provided in this booklet, will provide some guidance to countries in implementing this and other elements of the work programme.

Protected areas (PAs) have been the world's most favoured modern strategy for wildlife conservation. Today they occupy over 10% of the territory of the earth. This is most certainly a remarkable achievement, for in the face of increasing conversion of natural ecosystems into agricultural, urban, and industrial uses, the dedication of such a large landmass to conservation represents a very significant global direction in land use. Unfortunately, this impressive record has been achieved at a cost. For several million people who have traditionally inhabited the lands and waters where such PAs have come up, it has meant displacement, denial of access to basic survival and livelihood resources, conflicts with state agencies, and occasionally even death. Particularly badly affected have been indigenous peoples, nomadic or mobile peoples, and other traditional fisherfolk/forest-dwelling communities¹.

And while on the one hand the cost of creating protected areas has been borne by such communities, the benefits have largely accrued to 'outsiders'....tourists and tour operators, state agencies, urban citizens. This is not to deny that incidentally and indirectly, PAs have often also helped local communities in keeping out destructive forces of 'development' and rapacious markets. Such benefits, however, are not often perceived as over-weighing the immediate and direct adverse impacts mentioned above.

Clearly, such a model of conservation is not sustainable or just. PAs are and should remain a critical strategy to meet humanity's ethical obligation towards the rest of nature, but they cannot be successful if built on the violation of human rights, which are an equally important ethical obligation.

There are several reasons why a change is urgently needed:

1. The negative consequences of PAs on local people have generated considerable hostility and decreasing public support, especially in 'developing' countries where direct access to land and natural resources is such a critical life-support system. Maintaining such "fortresses" in the midst of hostile populations, especially since the democratic urge is growing stronger in most countries, is going to be a losing battle.

2. Local people themselves have had long-standing traditions of conservation and restrained resource use, which such a model of PAs tends to ignore. The opportunity of utilising such traditions and knowledge is therefore being lost, as is the chance of actually making conservation a mass movement rather than the prerogative of a few.

3. In most situations, communities have customary and traditional rights to land and resources, and the denial of such rights is unjust and violate basic human rights

4. The focus on PAs as islands of conservation, with increasingly destructive land use around them, is becoming self-defeatist, since ecological linkages cut across artificial PA boundaries.

Over the last decade or so, the formal conservation community has recognised the need for change. Across the world, albeit slowly, governmental policies and programmes of conservation are becoming more open to public and local community involvement. Some of the case studies presented in this booklet are illustrative of this trend. Yet, as other case studies in this booklet show, there is a very long way to go before intentions and words are translated into actual practice. Many countries continue to have top-down conservation policies, and several that have indicated policy changes continue to practice the conventional approach. Shockingly, many countries still hold the interests of commercial companies and urban-oriented 'development' above those of wildlife and local people. Clearly, there is a need for stepping up advocacy to enable progressive changes in national policy and practice. And if anyone thought that 'developed' countries are already progressive, the cases here suggest that may not necessarily be so.

¹ For the sake of convenience, the short form "local communities" has been used to denote all such peoples and communities.

Perhaps the biggest breakthrough, at a global level, has been the outcomes of the World Parks Congress 2003. This critical event saw the endorsement of a model of conservation that places local communities squarely at the centre of decision-making, respects the customary rights and responsibilities of such communities, commits to ensuring the livelihood security of such people, and recognises their own unique contributions to conservation including on lands/waters that are not part of the formal PA networks (see <http://www.iucn.org/themes/wcpa/wpc2003>). Individual recommendations on indigenous peoples, mobile peoples, collaborative management of PAs, community conserved areas, poverty, governance, gender, and other aspects of the relationship between people and PAs, contain crucial steps towards more equitable and integrated models of conservation.

One of the major 'new' finds for the formal conservation movement has been that of "Community Conserved Areas". These are sites of biodiversity significance that are effectively conserved by indigenous peoples or local communities, in some cases for millennia! There are probably thousands of such CCAs around the world, harboring a significant area of natural ecosystems and critical wildlife populations (though the intention of communities in managing them may relate to cultural, livelihood, and other objectives). Yet they have remained largely neglected by governments and international conservation NGOs. Some of the cases presented in this booklet highlight their importance and spread, and also point to initiatives taken in some countries to recognise them as part of the PA system. They also represent a conceptual break from looking at PAs only from a scientific point of view, adding important cultural and political dimensions.

The cases presented in this booklet offer some hints at solutions to the complex issues facing PAs and CCAs, some tips on the directions to take. By no means are these case studies representative of the diversity of situations around the world...this is impossible in a publication of this size. Nor are the case studies meant to be a general comment on the countries represented, for there may well be examples from the same countries that are of a different nature. These case studies simply show that there are a range of situations, from worst to best practice, and in doing so, they point to some of the lessons that countries and communities can learn in pursuing more participatory, equitable forms of conservation.

Ashish Kothari

1.2 TOWARDS BEST PRACTICES, IN DEPTH:

Village Mendha-Lekha, Maharashtra, India.

Geographical location, ecological and social main features: Village Mendha-Lekha is situated in Gadchiroli District of Maharashtra State in India. This region is famous for both its bio-diverse, dry deciduous forests as well as for its tribal communities. The District is more than 700,000 hectares in area. Approximately 80% is under forest cover, a figure that is the highest in the state and is among the highest in India.

The total area of the village is 1900 hectares. Nearly 80% of this area is forested, legally under the control of the Forest Department. There are approximately 400 people, largely without any class and caste hierarchies. The entire population is composed of the Gond tribe, which had ruled and inhabited the surrounding forests since time immemorial until the take over of large stretches of forests in this region by the government in 1950s. The livelihood of the villagers is heavily dependent on subsistence farming and on the forests, which provides a range of food, fuel, timber and fodder. The major source of income is from the collection of Non Timber Forest Produce (NTFP), and daily wages from work as labour with government and private agencies.

Historical background: The movement towards self rule and forest conservation in Mendha and many other villages in Gadchiroli was started after a strong tribal struggle against a Hydroelectric dam, proposed by the government in late 1980s. The dam would have submerged large stretch of dense forests and tribal lands, displacing thousands of tribals in this region. In 1985, after prolonged and determined tribal resistance, the government shelved the project. The anti-dam struggle emphasized and strengthened the determination of tribal people to take decisions at a local level for activities directly affecting their lives. Individuals who had been engaged in the anti-dam movement, upon their return to Mendha Lekha continued to advocate for greater village self-rule and collective responsibility. Discussions ensued over a period of four to five years were centred on key village issues such as creating equal status for women, reducing alcoholism, creating greater personal responsibility, and establishing means to protect and regulate the use of the surrounding forests. The discussions led to many positive social, cultural and environmental changes, including the development of a forest protection and management system in the village.

Governance, effectiveness and management: After many discussions in the village, it was decided that the key decision-making institution for self-governance and management of surrounding forests in Mendha would be the Gram Sabha (GS) or the village assembly. The GS was constituted in late 1980s. The GS is composed of all adult members of the village and presence of at least two adult members (one male and one female) from each household is mandatory for a meeting. Inclusion of all adult members and the fact that all decisions are taken on consensus ensures greater transparency in the process of decision-making. GS meets once a month and issues are discussed and revisited, if necessary until a consensus is reached². Decisions taken by the GS prevail over any other decisions, including those of the government agencies. Minutes of the GS are recorded by the villagers. If need be, outsiders (including government, industry, NGO representatives, etc) are invited to discuss their plans and programmes with the villagers. The main functions of the GS include, conflict resolution and formulation and implementation of rules and regulations for village administration as well as forest management. Based on interests, responsibilities and capacities, the GS may constitute sub-groups within the village or assign responsibilities to other village institutions (women's group, youth group, forest protection committee, and so on) for implementation of various programmes and activities. The GS ensures equitably distribution of the costs and benefits of development projects and programmes amongst the villagers.

To implement these and other minor decisions regulating extraction, Van Suraksha Samiti (forest protection committee) was formulated, including at least two members from each household in the village. Peer pressure, causing family shame and social ostracism keep people from breaching the rules.

The most important institution, which has helped the villagers take informed decisions at the GS, is what they call the abhyas gat (AG) or study circle, which operates as an informal gathering of people. Meetings are convened as and when desired for discussions on any issue. Outsiders are sometimes specially invited if the village wants some specific information or desires debate on a certain issue. These dialogues have helped the villagers develop their conversation skills, increase their awareness of the outside world,

² Consensus does not necessarily mean complete agreement of all villagers on a particular issue. In some cases all villagers may not agree on a particular issue or are not able to make up their mind but may still decide to support a decision taken by the other villagers. However, such decisions are never under any pressure.

learn about their rights and responsibilities, and obtain important inputs and information. In turn outsiders have gained insight into village life and the process of village self-rule. For example, discussions initiated by outsiders at the AG significantly helped the village overcome the problem of encroachments on forestland and annual forest fires, among many other things.

Results achieved

1. *Negotiated management, planning agreements and benefit sharing with local communities:* The efforts of the villagers at forest protection were not initially recognized in official circles. However, in 1992, the state adopted a Joint Forest Management (JFM) Resolution. In general, the JFM scheme envisages the handing over of degraded lands and forests to villagers for raising valuable timber species. Forest Department and villagers jointly responsible for forest management and protection and local villagers involved are entitled up to 50% of the revenue generated. The scheme, however, was not applicable for districts like Gadchiroli where most of the forests were still close canopy natural forests, including in Mendha. Mendha villagers, however, persistently demanded that they be included in the JFM scheme. With the help of some supportive forest officials, the villagers finally entered into a JFM agreement in 1992. Subsequently, an official Van Suraksha Samiti (VSS) or the Forest protection Committee was formed and Mendha became the first village with

Rules for forest use and management in Village Mendha-Lekha

- All domestic requirements of the village would be met from the surrounding forests without paying any fee to the government or bribes to the local staff;
- Approval of a set of rules for sustainable extraction;
- No outsider, including governmental, would be allowed to carry out any forest use activities without the permission of the Gram Sabha. If someone was caught doing so, the material would be seized by the village and the offender would have to accept any punishment decided by the village;
- No commercial exploitation of the forests, except for NTFP, would be allowed;
- The villagers would regularly patrol the forest;
- The villagers would regulate the amount of resources they could extract and the times during which they could extract resources from the forests.



boundaries. This has created an option for paid employment through out the year. In addition, unity among villagers has ensured a higher price for the NTFP from the contractors (who are no more in a position to exploit the villagers). Most

standing forests in the state - and one of the few in India - to be brought under the JFM scheme.

Through study circle discussions the villagers managed to bring in many provisions that were not usually within the mandate of the JFM resolution. These included meeting the actual needs of the villagers and not interfering with the rules set out by the villagers for controlling the extraction of resources from the forest. Thus, the rules (some written, but most unwritten) followed by the villagers are a mixture of what the official resolution states and what the villagers have decided. Villagers also ensured that commercial extraction of timber was not included in the Micro-plan for JFM as they preferred a more biologically diverse forests as against monocultures. However, regulated harvesting of bamboo was allowed as these forests are rich in bamboo.

The structure and functions of the VSS were also specially adopted for Mendha's JFM programme. The VSS in Mendha meets far more often than it is officially obligated, and the meetings are open to all members of the GS, not just the executive committee as required by the government resolution on JFM. The official VSS supports the authority and role of the GS regarding its forest protection activities. The JFM in Mendha village is viewed as among the very few successful cases of JFM in Gadchiroli District. However, the government has not yet accepted the villagers demand to share 50% of benefit incurred from the sale of bamboo (as has been mentioned in the government resolution). Neither have the demands of a legal category which gives rights to the people to regulate and manage the forests been accepted.

2. Food Security/ Poverty alleviation: One of the rules in Mendha is that Mendha villagers have the first right to employment for any forestry and development work undertaken within the village

villagers are a part of one or the other self-help groups within the village, thus saving small amounts of money every month, which also loans them money in the lean period at low interest rate. This has entirely eliminated the exploitative money-lenders from the village economy. Villagers have a grain bank which loans grain to the needy families in the lean period, this loan is paid back after harvest. In addition, loans are also given to the needy families by the GS. Most importantly the villagers now have a regulated but secure access to forests, which provides food, bamboo, fodder, medicines, and so on throughout the year.

3. Biodiversity conservation: Visual impressions, conversations with the local villagers and a few limited ecological studies have indicated that quality of forests has improved as the unregulated use of forest resources by commercial interests has been controlled. Mendha villagers claim that the quality of the forests in general has improved, but they qualify this by saying that availability of certain resources, especially closer to the village, has gone down, including fuelwood and some palatable grass species. They attribute this to the increased human and cattle population within the village and in the adjoining areas. A comparative study of villages around Mendha and forests in Mendha, showed that while there was little difference between the quality of forests closer to the village in both cases, the quality of the forests in Mendha substantially improves as the distance from the village increases.

Specific, positive ecological impacts include, improved availability of water and controlled soil run off because of soil and water conservation activities; Reduction in the number and extent of forest fires; Control on unregulated use and commercial use of forest; and so on Forests of Mendha support a good population of large animals such as Leopards, Hyena, Ratel, Sloth

Bear, Hare, Sambhar, Barking Deer, Wild Boars, Spotted Deer and others. Tigers have also been spotted occasionally. Central Indian Giant Squirrel, now a threatened species is also found in these forests. Villager effort at forest protection provide protection to the habitat of these animals. Although hunting of wild animals for food is still prevalent in the community. According to the villagers this is much less harmful for the wild animals as compared to constant and large human presence in the forest during commercial extractions. Exact status of these species, however, is still to be studied.

4. *Community capacity building*: The following are some important social impacts of the village initiative towards self-rule and forest protection:

- * Increased empowerment by striving and achieving the capacity and confidence to assert their rights and reaching a stage where the village is respected even in official circles. Today all government and non-government people come to the village (if they need to), instead of calling the villagers to their offices, sit with them and converse with them on equal grounds and often in their language;
- * The village has established informal yet strong institutional bodies which follow informed, democratic and transparent process of decision-making;
- * They have devised systems for equitable sharing of costs and benefits;
- * They have gained confidence in handling their money matters in transparent and effective manner. Even the local banks see them as a valuable client.
- * They have improved their capacity of the villagers to earn their livelihood through employment or forest based activities.
- * Through their confidence the villagers have been able to strengthen inter-departmental coordination which in turn has lead to pooling together of otherwise segregated resources for certain developmental activities in the village.

Discussions in the study circles have been the most effective means of capacity building in the village.

5. *Financial management of the protected area*: So far, the GS has deliberately avoided receiving major external funds, unless originating from government programmes targeted for the region. Each member of the GS donates 10% of her or his wages to the GS corpus fund from their employment generated through the GS. Any money leftover from GS projects or programmes also goes into the fund. In addition, any donations or payments made by visitors also go into the fund.

The GS now has its own account in a local bank, and uses a unique accounting system that spreads the responsibility and accountability for withdrawing and spending money among many villagers at a time on rotational basis. Accounts are regularly disclosed to the village assembly. The accounts are audited annually with the help of a local NGO, Vrikshamitra.

Lessons learned

1. Transparent and democratic institutions and process:

One of the important factors, which made the movement in Mendha a success, is the transparent and democratic process of decision making. The emphasis on equal representation of all sections of society in information sharing and subsequent decision-making is one of its unique features. Even where there is discontent regarding certain decisions, those who are not satisfied cannot cite lack of information or participation as a reason, and are often exposed as being simply jealous or critical for the sake of criticism. Such an open and transparent system of functioning at every level of governance, if adopted officially, could help avoid many conflicts arising from information being cornered by a few powerful sections.

2. A community initiative is a social process, social processes are time consuming and complicated. There may exist many contradictions difficult to understand for an outsider, especially if the interactions are short. Can the government policies be built around such a pace? If yes, how? If the pace is needed to be changed what are the factors that need to be looked at? Probably a greater role as an extension officer by the government agencies? Villagers often do not seem to have the time or the resources to carry it out on their own. Situations are often more complex than it may appear here. This is where possibly the state could effectively take on the above mentioned role of an extension officer or a facilitator to discuss possibilities of regulating these activities and help them implement the decisions jointly arrived at.

3. Need for joint management and controls: Mendha villagers have demanded to be included in the formal Joint Forest Management scheme of the government, a demand that has also come from other such community efforts in the country. This indicates that communities often do realise the difficulty of managing natural resources on their own, especially given the internal and external social dynamics and political and commercial forces. An active role of the state as a partner in the management of resources is often envisaged by these communities, but on equal terms and in the

capacity of a supporter and guide rather than a ruler or police.

4. Inter-agency coordination and regional planning:

People in Mendha have acted as mediators between various government agencies active in the village to bring about a greater coordination in local developmental programmes. In many wildlife and forest areas of India, authorities can easily get over the problem of inadequate resources (which is often cited as an important management constraint), especially for the provision of ecologically-sensitive livelihood inputs to local communities, by pooling together resources by all the line departments in the area. It should also be kept in mind that a wildlife protected area does not exist in isolation of various social and political forces and land-use practices in the areas surrounding. Allowance of resource intensive activities in the surrounding area could put more pressure on the resources of the area to be protected or act in contradiction to conservation objectives. Thus conservation planning should be integrated with that of the regional planning for which coordination among various departments is crucial.

5. Adequacy of conservation personnel: When the entire village takes on the responsibility of protection, "inadequate staff" does not remain a cause for ineffective management. In Mendha, the official forest department staff does not need to look after the protection and conservation aspect any more. Poaching, timber smuggling, encroachment, etc. can thus be controlled with the involvement of the local people. An effective, dedicated and sensitive staff can be an added strength for the conservation effort. Mostly economically unprivileged villagers could also benefit if the financial sources come to them for their efforts rather than going to an ever increasing yet largely ineffective staff.

6. Importance of information: Mendha villagers have been able to provide answers to some very important questions (e.g fire, illegal use, poaching, smuggling of valuable timber and others), that conventional wildlife habitat management is still struggling with in other areas. To a large extent this has been possible because of the open and transparent discussions at the study circles. It strongly indicates that constant interaction with outsiders and regular discussions within the village make people more conscious and aware, which in turn helps in taking informed decisions. This clearly defines a need for a neutral discussion and information sharing forum for the effective management of an area.

7. Role of a community leader: One aspect which could not be brought out very effectively in sections

above because of lack of space is the role played by Devaji Tofa (person involved with the initiative from its inception) along with a group of people. This group has played a very crucial role in shaping the village initiative through their vision and open discussions. Often they have done so at tremendous family and personal cost, these people are not necessarily the political leaders but are the moral and role models for the villagers. For the success of any participatory initiative it is important to identify such people who would lead the initiative with out creating power rifts within the community. At the same time community's own conviction and sense of responsibility is very important to sustain any such effort.

Organisation responsible for the community conserved area: Village Gram Sabha

Contact person :

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1.3 SHORTER TAKES ON BETTER PRACTICES: The complex road to participatory protected area management and local governance ³

Gwaii Haanas, Canada

In the Haida language, Gwaii Haanas means islands of wonder and beauty. The Gwaii Haanas National Park Reserve, located in the southern part of the Haida Gwaii archipelago off the coast of Northern British Columbia, was established in 1986 under an agreement between Parks Canada

³ The case studies in this section have been excerpted from: Borrini-Feyerabend, Grazia. 2003. Community conserved areas (CCAs) and co-managed protected areas (CMPAs)— towards equitable and effective conservation in the context of global change. Report of the IUCN joint CEESP/WCPA Theme on Indigenous and Local Community, Equity and Protected Areas (TILCEPA) for the Ecosystem, Protected Areas and People (EPP) project (http://www.iucn.org/themes/ceesp/Wkg_grp/TILCEPA/community.htm#synthesis)

and the Council of the Haida Nation. The Haida initiated the process, after decades of heavy logging in their traditional territories. Haida traditional territory spans the entire archipelago of Haida Gwaii, which is under dispute as both the Haida and the federal/provincial governments claim ownership of these islands - most of which are currently under provincial government (British Columbia) jurisdiction and allocated to long-term industrial forest tenures. The Haida are presently challenging crown ownership and industrial resource forestry tenures through court battles. However, for the National Park Reserve lands, the government of Canada and the Haida Nation were able to put aside their differences regarding ownership and instead promote their common interests and goals. The Haida intends to protect the area from environmental harm and degradation and continue traditional resource uses. The federal government's intends to protect the area as a natural cultural environment and as part of the national protected area system. The title "National Park-Reserve" is used instead of National Park to highlight this ownership dispute, pending settlement of Haida land claims.

Gwaii Haanas National Park Reserve is governed by a joint Management Board, made up of two Haida representatives and two Parks Canada representatives, working by consensus. Connections between land and culture are vital for the Haida, who are dependent on the natural resources for livelihood (through fishing, hunting and trapping) but also for medicines and the expression of their cultural identity. Five heritage sites within the borders of Gwaii Haanas are of particular high value to the Haida and are carefully protected. All this has been recognised and supported by Parks Canada. The establishment of the park has promoted a shift in the local economy from logging to tourism, and employment opportunities have also been created by the Park itself for Haida people - although certification requirements make it difficult for Haida community members to become tour operators, even though they have deep local knowledge of the cultural and natural history.

While the Gwaii Haanas National Park Reserve beckons toward improved conservation practices, the Reserve encompasses only a small portion of Haida traditional territory - most of Haida Gwaii is still controlled externally. The Haida are currently involved in costly legal battles against the provincial and federal governments who do not respect the Haida's aboriginal rights and title. Furthermore, the federal government is promoting new legislation that could hinder Haida rights and participation in the management of the boundary waters of Gwaii Haanas and Haida Gwaii. While

the Gwaii Haanas National Park Reserve is certainly positive in many respects, we must note that this is only one example within 40 Canadian National Parks, most of which do not involve First Nations peoples in meaningful ways. Since 95 percent of National and Provincial parks in Canada are located near aboriginal communities and traditional territories, this record can only improve.

For more information on the Gwaii Haanas National Park Reserve you can consult the report "Aboriginal experiences in Canada- Parks and protected Areas" at http://www.taigaescue.org/_v3/files/pdf/37.pdf (adapted from Gladu, 2003 with a comment by Jessica Dempsey)

Alto Fragua-Indiwasi, Colombia

The Alto Fragua-Indiwasi National Park was created in February 2002, after negotiations amongst the Colombian government, the Association of Indigenous Ingaño Councils and the Amazon Conservation Team, an environmental NGO. The Park is located on the piedmont of the Colombian Amazon on the headwaters of the Fragua River. The region is considered among those with the highest biodiversity in the country. Being part of the Northwestern Amazonia and North Andean ecoregions it has been recognized worldwide as one of the top hotspots of the world. The site will protect various tropical Andean ecosystems including highly endangered humid sub-Andean forests, threatened species such as the spectacled bear (*Tremactus ornatus*) sacred sites of unique cultural value.

Under the terms of the decree that created the Park, the Ingaño will be the principal actors in the design and management of the park. The area, whose name means 'House of the Sun' in the Ingaño language, is a sacred place for indigenous communities. This is one of the reasons why traditional authorities have insisted that the area's management should be entrusted to them. Although several protected areas of Colombia share management responsibilities with indigenous and local communities, this is one of the first where indigenous peoples are fully in charge.

The creation of Indiwasi National Park has been a long-time dream of the Ingaño communities of the Amazon Piedmont, for whom it is a natural part of their Life Plan (Plan de Vida), that is, a broader, long-term vision for the integrity of their ancestral territory and the region. In addition, the creation of the Park represents an historic precedent for the indigenous people of Colombia, as for the first time an indigenous community is the principal actor in

the design and management of a PA fully recognised by the State.

(adapted from Oviedo, 2003 with a comment of Thomas Walchburger)

Forole, the sacred mountain, Kenya-Ethiopia

Forole is a sacred mountain just north of the border between Kenya and Ethiopia where the Galbo peoples (a sub-group of the Gabbra people) hold the “jila galana” ceremonies. Most of the Galbo live in Kenya, but they move in pilgrimage to the Forole on occasion of the ceremony. The trees of Forole Mountain are totally protected by the Gabbra and access to the upper part is only allowed to a few elders on the occasion of the Sacrifice to the Sacred Python. The lower part of the mountain provides permanent water and it is used as reserve grazing area by both the Gabbra and Borana pastoralists. Although there is sometimes tension over pastoral resources among the two groups, the Borana fully respect the sacredness of Forole Mountain and the inherent restrictions, indirectly assuring its conservation. This is an example of a Community Conserved Area (CCA) not unequivocally associated to a single ethnic group and engaging local actors in complex economic and symbolic relationships. These relations may easily shift from constructive complementarity to conflict, but at the moment seem to be working quite effectively.

(adapted from Bassi, 2003)

Informal co-management in Cerro Hoya National Park, Panama

A project assisted by the German Development Cooperation (GTZ) resulted in a co-management plan for the National Park of Cerro Hoya, in Panama. The process evolved through many crucial discussions on issues of land tenure and management in general of the forests and various natural resources. The fourteen communities living within the park participated actively with the public authorities in charge, and are now involved in implementing the plan and continuously reviewing it on the basis of its results. All this has been possible in the absence of a specific national legislation regulating the participation of civil society in the management of protected areas. Much work remains to be done, especially regarding the forms and characteristics of this participation process, as well as the details of land tenure and the building of capacities of all actors involved, but the results achieved so far are very encouraging.

(adapted from Solis et al., 2003)

Tayna Gorilla Reserve, Democratic Republic of Congo

The Tayna Gorilla Reserve located in North Kivu, DRC was created in 1999 through a collaboration between conservation agencies and two traditional leaders of the Batangi and Bamate people. The Statutes for this Community Based Reserve of 800 km² constitute a formal agreement between the customary landholders, government and NGOs. Local people directly participate in the management of this protected area, whose goals include both the conservation of biodiversity and the promotion of rural development. In this region of ongoing armed conflict, the Tayna forest guards are unarmed, and repressive protection measures are not employed by them. Communities have been directly involved in the development of the Reserve's management plan, including in drawing the forest zoning and addressing the long-term vision of how the park should develop. The Reserve programme recognises the key role that continuing, customary use of the whole region shall play in the long-term management and conservation of the forest habitat. Key challenges faced by this project are the prevention of unauthorized resource use by outsiders during periods of political instability, and the engagement of the local Pygmy population, so far neglected in the co-management process.

(adapted from Nelson and Gami, 2003)

A Tiger Reserve and a Himalayan Park: Towards Participatory Management, India

A remarkable transformation is taking place in the relationship between government officials managing the Periyar Tiger Reserve in southern India and the villagers living inside and adjacent to the Reserve. Over the last 4-5 years, a once conflictual relationship has turned into one of cooperation, trust, and mutual support. Since the late 1990s, Reserve officials have worked with the villagers to rid them of their indebtedness, obtain better prices for their agricultural products, introduce new activities linked to wildlife tourism that are generating direct income to the villagers, and even help social problems like the trafficking of women. In turn, villagers have taken up patrolling of the Reserve, reporting poaching and wood theft, managing a part of the large tourist inflow, and facilitating the effective management of the Reserve. Institutional structures that partly build on traditional skills and systems have been created to manage these initiatives. Several dozen people, earlier identified as poachers, have now taken to these or other activities, and though some of them actually earn less than they used to when they

were poaching, they prefer the new situation as it comes with greater security and dignity. Most remarkably, about 100 women from several settlements have taken to voluntary patrolling of the Reserve, stating, simply, that they are doing this “for their children’s future”. Increasingly, Reserve officials are talking of bringing the villagers’ into the entire planning process. They openly say that “sharing power with people has actually increased our power”, since it has helped them to deal more effectively with violators and vested interests.

The above transformation has taken place under a GEF-funded Ecodevelopment project. However, the credit must go to an extremely creative set of officials that went well beyond the initial idea of the project. They approached local communities with humility, looking for mutually acceptable solutions, and with few fixed preconceptions. But this has also raised the serious question: how sustainable are initiatives like this? In 2004, the project ends. Will the work be sustained if this set of officials is transferred out, or if funding ends? Some of the villages have created robust enough institutions and fund mechanisms to enable continuity, but others have not been able to do this as yet. One proposal is therefore to set up a Periyar Foundation, through government but with autonomous status, so that collaborative work between the Forest Department and local communities can continue.

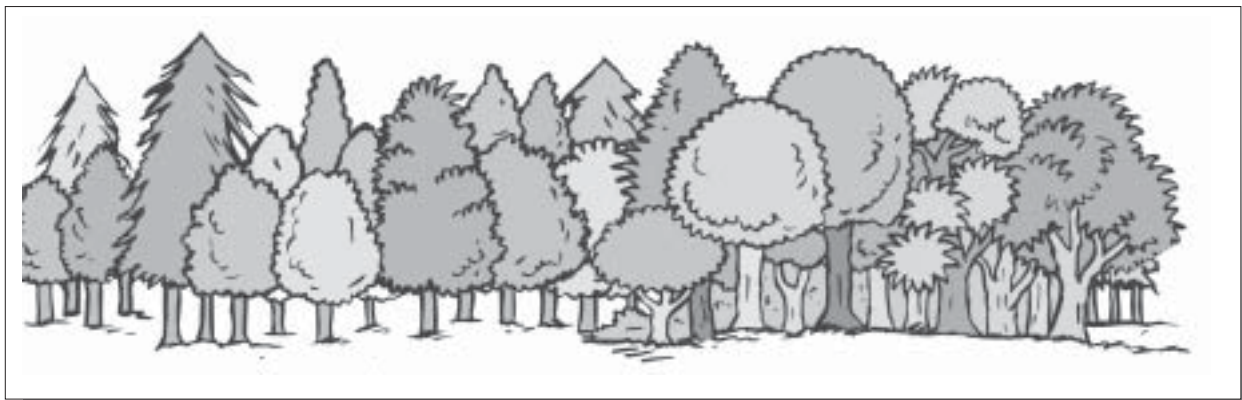
A similar initiative is unfolding in far away Great Himalayan National Park, one of India’s most important mountain PAs, home to the endangered Western tragopan and many other species. This area was a hotbed of conflicts between Park officials and villagers that entered the area for grazing, collection of medicinal plant, hunting, and other pursuits. A top-down approach had not yielded much result. By the late 1990s, the process of settlement of rights, under India’s Wild Life (Protection) Act, had taken away many of the customary rights of access that these villagers enjoyed, a process heavily criticised by NGOs and activists. A new Park director then took it upon

himself to win over the trust of women in the villages, helping them set up some small-scale enterprises through the creation of Women’s Savings and Credit Groups (WSCGs). Each woman member is encouraged to save one rupee a day, which has now become a good Rs. 5,000,000 in about 95 WSCGs. Through these savings, the women have so far done business worth Rs. 23,000,000, including vermicomposting, apricot oil production, hemp products, ecotourism, street theatre, and wage labour. The Park management has opened two shops to market the produce of the WSCGs, and provided training in various skills. The WSCGs, are now being federated into Village Forest Development Society at Panchayat (village council) level. Villagers have been helping in patrolling and monitoring, inside and on the periphery of the Park. In December 2003, many of the Panchayats came together and formed a group called Jujurana Jive (Long live Western Tragopan), in which three men and three women from each Panchayat have been identified to take an active role in wildlife protection. The group is quite upbeat and says that it will not only keep an eye on villagers and poachers, but also on the activities of the Park staff!

Neither of the above cases can be called full joint or collaborative management, especially since tenurial rights are not all secure yet, and equitable decision-making processes are not fully established. However, the move towards such a system seems to be set. Appropriate changes will be needed in India’s wildlife legislation, to enable this process to fulfill its full potential, but meanwhile a group of innovative and bold officials has shown that participatory conservation can be initiated — if only the requisite willingness and creativity is present.

(Text on Periyar by Ashish Kothari; Contact: Pramod Krishnan, Ecodevelopment Officer, Periyar Tiger Reserve (edo@periyartigerreserve.org)

(Text on Great Himalayan adapted from submission by Sanjeeva Pandey, Director, Great Himalayan National Park (dirchnp@sancharnet.in)



Gurig National Park, Australia

For thousands of years, the Cobourg Peninsula and its surrounding sea formed the traditional lands of four Aboriginal clans. In 1924, the peninsula became north Australia's first flora and fauna reserve. During the 1950s, all the remaining Aboriginal traditional owners were moved to a government settlement nearby Croker Island. In 1981 the establishment of Gurig National Park was agreed on by the Northern Territory Government and the Aboriginal traditional owners, to resolve a pending land claim under the Aboriginal Land Rights Act of the Northern Territory. Rather than proceeding with the claim, the traditional owners consented to the establishment of the National Park in return for regaining title to their traditional lands. The key features of the joint management of Gurig National Park are:

- the declaration of the park under its own legislation, the Cobourg Peninsula Land and Sanctuary Act 1981.
- the vesting of the land in a Land Trust on behalf of the traditional owners, and recognition of the rights of traditional owners to use and occupy the Park.
- the establishment of a Board of Management comprising 8 members, of whom 4 are traditional owners and 4 are representatives of the Northern Territory Government; the Board is chaired by one of the Traditional Owner members who also has a casting vote. The Board prepares the management plan, enforces the rights of local owners, determines rights of access to others, ensures protection of sites important for the aboriginal population, and so on.
- the payment of an annual fee by the Government to traditional owners for use of their land as a National Park.

The responsibility for day to day management rests with the Conservation Commission of the Northern Territory (now the Parks and Wildlife Commission). The plan contains many practical details relating to the exercise of the rights and interests of traditional owners on the Park, including:

- the location of Aboriginal residential areas;
- the recognition of traditional hunting and fishing;
- a commitment to train and employ Aboriginal People as rangers and in other capacities on the Park

In 1996, the Cobourg Peninsula Land and Sanctuary Act 1981 (NT) was amended to extend the powers of the Board to include supervision of the management of the adjacent Cobourg Marine Park, which includes customary marine clan

estates of the traditional owners. In summary, the joint management arrangements for Gurig National Park provide Aboriginal People with secure tenure over their traditional lands, as well as nominal control over policy and planning matters via their voting majority on the board. The Northern Territory Government, through its representation on the Board and through the operations of the Parks and Wildlife Commission, maintains a strong role in determining the management of the park. It is significant that these arrangements do not require traditional owners to lease their lands back to the Government.

In Australia, relatively strong co-management arrangements for protected areas have been developed over the past 20 years, following the passing of legislation that recognised Aboriginal rights to land and natural resources. A range of arrangements is now established by law, including Indigenous Protected Areas that are completely controlled by aboriginal peoples.

In general, independent observers point out that official claims on co-management at PAs like Gurig are still not fully reflected on the ground in terms of truly equitable power-sharing. Nevertheless, the establishment of formal institutions and genuine respect on part of official agencies, towards the role of Aboriginal people, is increasing their actual power and control.

(adapted from Smyth, 2001)

Contact : Dermot Smyth, erus@tpg.com.au

1.4 WORST PRACTICES, IN DEPTH

Loliondo Game Controlled Area, Tanzania

The Loliondo Game Controlled Area in Tanzania, East Africa covers 4,000 sq km of savannah grassland and lies in the East African woodland/savanna biogeographical province. The LGCA also forms an integral part of the Mara-Serengeti-Ngorongoro ecosystem, declared by IUCN as a Biosphere Reserve and known to have the greatest concentration of mammals in the world.

Loliondo's importance lies in the fact that it forms a part of the migration corridor between the Serengeti National Park in Tanzania and the Maasai Mara Game Reserve in Kenya. Loliondo is home to the pastoralist Maasai of Kenya and Tanzania.

Historical Background

Tanzania has been big-game hunting territory since the late-19th century. Loliondo, designated as a game reserve in 1959, became later on a game controlled area to allow game hunting.

Over the past decade hunting has increased dramatically, as the government seeks to broaden its tourist base. Between 1990 and 1997, the Tanzanian government leased 140 hunting blocks as compared to 40 in the previous three decades.

The Ortello Business Hunting Company (OBC), owned by Brigadier Mohammed Abdulrahim Al-Ali, a government minister from the United Arab Emirates and a member of the Royal Family, who obtained a hunting license in 1992 and began operations in early 1993. The license covered the entire LGCA, for a fee of US\$ 7,500 per year per hunting block, contributions to the district authority's development fund and the promise to undertake certain poverty alleviation projects among the Loliondo Maasai, for instance the construction of schools, building boreholes and cattle dips etc. OBC also promised to employ members of the local community wherever possible. The license allows OBC to hunt, trap and ship out live game for four months every year (the company has a 20-year option, with regular five-yearly assessments). The OBC is not, according to the Tanzanian government, a tourist-hunting company; its remit is to offer to Arab royalty the opportunity to enjoy the rich hunting grounds of Tanzania.

For its part, the OBC stated that it recognised the venture as an example of the Arab world's commitment to conservation. Through the project, the OBC would contribute towards poverty alleviation among the Maasai in Loliondo and development of the Tanzanian economy.

Results achieved

1. Negotiated management, planning agreements and benefit sharing with local communities

The negotiations occurred at State level only. The local community was not consulted at all. In fact, five years later, in 1998 when the license was being reviewed, the Loliondo Maasai were once again not part of the decision to renew the OBC's license.

Not only has the OBC ignored the concerns of the local community, but they have in fact turned against the locals. There are countless reports of intimidation, harassment and arrests conducted by government agents in OBC's employ, and by OBC's own employees.

In addition, most of the initial promises remain unfulfilled. While the OBC has built two schools, constructed boreholes and cattle dips and regularly attests to these achievements, the reality on the ground is more nuanced. Yes, the schools have

been built, but they are either unfinished or abandoned and one borehole - the company had promised 30 but has delivered far less - is broken and, sitting next to a cattle dip poses a serious risk to the integrity of the groundwater.

2. Food security and poverty alleviation

Part of the proceeds from hunting are supposed to go to the local community. In the case of the OBC in Loliondo this has not happened in any meaningful way, as described above. The Maasai in Tanzania are one of the poorest and most marginalised communities. "The Tanzanian government," says the Maasai rights activists, Maasai Environmental Resource Coalition (MERC), "does not recognise Maasai traditional land rights nor their right to full access and control of the natural resources therein."

3. Biodiversity Conservation

The Ortello Business Company has been accused of a litany of crimes, the most notable being the flagrant abuse of Tanzania hunting laws. The OBC regularly employs hunting methods designed to maximise the number of prey and the ease with which it is caught. These include creating fire-walls, artificial salt-licks and watering holes to attract prey. Worse still, eye-witness accounts testify to the fact that the OBC allows its clients to use automatic and self-loading guns during hunting missions, in contravention of Tanzanian hunting laws. As well, alleges MERC, company guides regularly take clients out of the LGCA and up to 15 kilometres into the Serengeti National Park in search of prey. Tanzanian law specifically states that hunting is prohibited within one km of a protected area.

Community members claim that as a result of the sustained and brutal hunting practices of the OBC, game is beginning to disappear. It is a claim that is disputed by the Tanzanian authorities. However, as a result of the activities of the OBC, wildlife migratory routes are severely disrupted. This has, on at least one occasion, affected the route and timing of the famous 'Great Wildebeest Crossing'; two years ago, the game from Serengeti were forced to use an alternative route as a result of the fire-walls created by the OBC, leading to a furore in the media over Tanzania's management of cross-border wildlife.

There are other, equally worrying, practices. Locals report regular sittings of indiscriminate killing of game - the very young, pregnant and lactating mothers as well as dominant males. In addition, there are frequent reports that OBC regularly crates - in cruel fashion - an inordinate number of games

of all kinds. Both the company and the government have denied the allegations.

4. *Community Capacity Building*

The OBC has delivered on one promise: employment for locals. However, the quality of jobs offered is a matter of constant complaint among the Loliondo Maasai

Most jobs available to locals are menial; the local Maasai are employed as game-trackers and skimmers. In the OBC's main camp, there are no Maasai in managerial positions. However, co-opted community members are granted free access to the camp and lavished with money and gifts.

5. *Financial management of the protected area*

The OBC was granted exclusive hunting rights for the entire area that comprises the Loliondo Game Protected Area. They pay the government annual hunting fees (US\$ 7,500 per hunting block), although it is not clear whether the entire area is regarded as one hunting block or several.

The LGCA is managed by the Department of Wildlife using state funds and the proceeds from hunting and tourism.

Lessons Learned/Recommendations

1. *Old style protected area management*

The Loliondo case illustrates clearly how the new paradigm of protected area management that emerged from the 5th World Park Congress 2003 is not being applied. The involvement of local people in management decisions of the protected area “ that ensure respect for indigenous peoples’

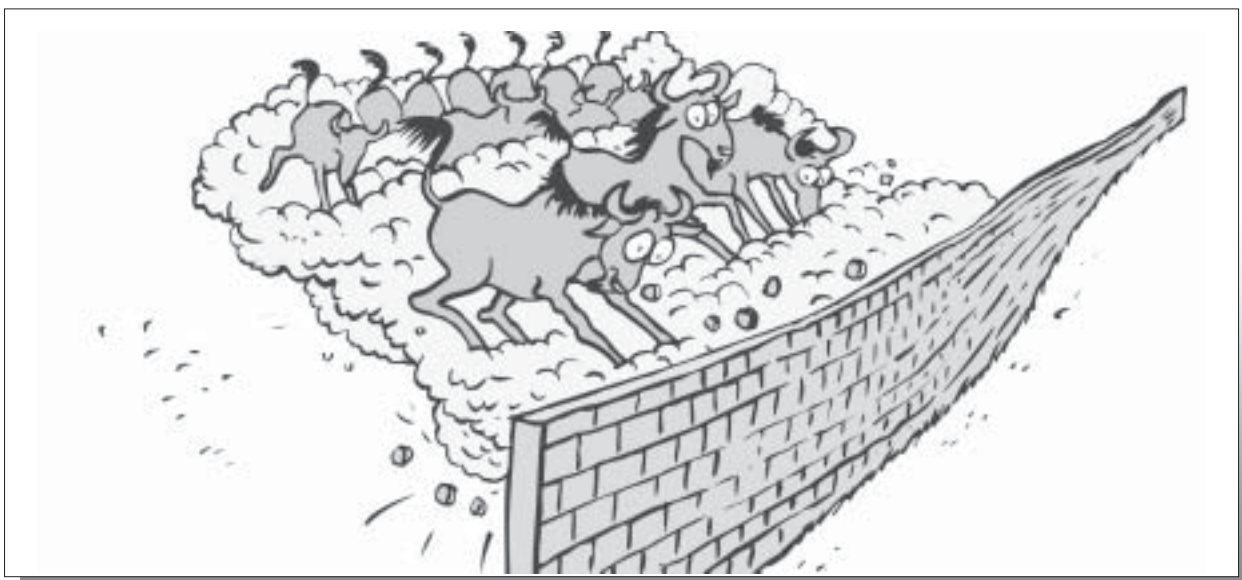
decision-making authority and support their local, sustainable management and conservation of natural resources in protected areas, recognising the central role of traditional authorities, wherever appropriate, and institutions and representative organizations “ is not a practice in Loliondo. The Loliondo Maasai's exclusion from the protected area management, contributes neither to poverty alleviation, nor to biodiversity conservation.

2. *The need of an environmental audit*

In 2000, 13 elders of the Loliondo Maasai staged a demonstration in the Tanzanian commercial capital, Dar es Salaam, demanding punitive action against the OBC. In response, the Tourism and Natural Resources Minister, Zakia Meghji ordered for an investigation into the company's operations as well as an environmental audit. The environmental audit report has never been released.

For five months in 2001, the Maasai Environmental Resources Coalition (MERC) camped in Loliondo to get an independent view of the situation there. Their subsequent report 'The Killing Fields of Loliondo' published in July 2002, is a damning indictment of the Ortello Business Company and the Tanzanian Government. It must be said that both these parties refute all the claims made in the report. The evidence, however, is overwhelming.

It is understood that States are obliged to implement the Convention on Biological Diversity. In the Loliondo case, Articles 8(j)⁴ and 10 (c)⁵ are not being applied. The establishment of a high level, independent Commission on Truth and Reconciliation on Indigenous Peoples and Protected Areas, as recommended by the World Park Congress 2003, will be an important mechanism to put in place to resolve the Loliondo crisis.



In the framework of this proposed Commission the following recommendations of MERC could be applied:

- the Tanzanian government should make public the results of the environmental audit.
- an investigative team composed of Tanzanian and international experts and commissioned by the government, should be established and sent to Loliondo to assess the situation.
- OBC's hunting privileges should be suspended pending the investigation.
- questions of land alienation and grazing rights in Loliondo should be resolved.
- overall transparency of government actions - from the national level down - should be increased.
- the international community should put pressure on the Tanzanian government to resolve the Loliondo crisis.

3. Capacity building of Government Parks authorities

There is a need to finance an update of the Loliondo Park authorities in line with the new principles of conservation. As Lee Hannah states: “ a strong consensus is emerging that African parks must involve local people in management decisions, that local people must benefit from parks, and that support of local people is essential to the long-term existence of protected areas in Africa. But those are only ideas. Few parks in Africa apply these new methods. Restraining staff, rewriting management plans, developing community benefits are all expensive. In the difficult economic setting of Africa, no government parks authority has had the resources to revamp its entire park system in line with the new theory.”⁶

Organisation responsible for the protected area:

Contact person:
Zakhia Meghji
Minister for Natural Resources and Tourism
Department of Wildlife, Tanzania

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Ski resorts in sensitive mountain ecosystems, British Columbia, Canada

Geographical location, ecological and social main features: This case study focuses on the South-Central Interior of British Columbia, especially highly sensitive mountain ecosystems. There are a number of provincial and national parks in British Columbia, the majority of the latter (Yoho, Glacier and Mount Revelstoke National Parks) in the Rocky Mountain ecoregion and the Jasper and Banff National Parks in Alberta are part of which is the traditional territory of the Secwepemc⁷ (also known as the Shuswap) Nation.

The current Neskonlith Reserve, once covering over one million hectares and the recognised and exclusive territory of the Secwepemc, now covers only 7,000 acres. Seven years after its illegitimate reduction, the Reserve ran out of resources to support Secwepemc families. The rest of the historic Neskonlith Douglas Reserve has been handed over to competing interests by the provincial government. Two companies have commercial interests within the Reserve : Interfor⁸, which holds most of the provincial logging permits, and Nippon Cables Canada⁹, which has provincial approval to further develop the Sun Peaks Ski Resort according to the Reserve Master Plan. Perversely, the main ski mountain and the first ski resort were named after “explorer” Tod, who in the 1860s, distributed small-pox infected blankets to the Secwepemc and thereby cut their population in half.

Also part of the historic Neskonlith Douglas Reserve is the Adams Lake Provincial Park and the Neskonlith Provincial Park. The latter is located on one side of Neskonlith Lake with the other side being part of the current Neskonlith reserve.

⁴ Article 8(j); Subject to its national legislation, to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

⁵ Article 10 (c): to protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirement.

⁶ Colchester, M. 2003. Salvaging Nature. Indigenous Peoples, Protected Areas and Biodiversity Conservation. World Rainforest Movement and Forest Peoples Programme

⁷ Secwepemc tribe, who have lived in the Rocky Mountains of British Columbia for thousands of years, and now, their land and traditional way of life is being put in jeopardy by a ski resort - built on their sacred territory.

⁸ Interfor : International Forest Products (Interfor) is a publicly traded company with operations based in British Columbia. Interfor is one of Western Canada's largest logging and saw milling companies. The Adams Lake Interfor Mill is operated just above the spawning grounds for one of the world's most famous sockeye salmon runs, the Adams Lake Sockeye Run.

⁹ Nippon Cables is the Japanese holding company for the Sun Peaks Ski Resort. They are in a joint venture with Doppelmayr - an Austrian Company with almost a world monopoly on building ski lifts.

Sun Peaks is just one negative example of a mega-resort and ski area development in the traditional territories of Indigenous Peoples. The government has also issued a permit for the development of the Cayoosh Creek Ski Resort, in St'at'imc territory close to Whistler-Blackcomb, the biggest ski resort in Canada where the alpine skiing events of the 2010 Olympic Games are set to take place.

The St'at'imc set up the Sutikalh Camp in May 2000 to express their opposition to the proposed development. But the push to open new highly sensitive alpine areas for ski resort developments does not end there. The British Columbia government is currently reviewing a proposal to develop a ski resort in Garibaldi Provincial Park, in shared St'at'imc and Squamish territory. Environmental groups along with Aboriginal peoples oppose this development as it would further undermine the use of protected areas in British Columbia.

Historical background

In Canada there is an overall failure to implement Aboriginal Title and Rights (with the exception of a few sites), as well as treaty rights. Like the Secwepemc, most Indigenous peoples in British Columbia have never signed treaties at all and therefore still possess the rights to their traditional territories.

In 1997, in the Delgamuukw Decision, the Supreme Court of Canada recognized these collective land rights as Aboriginal Title, collectively held by the respective Aboriginal peoples under their laws. As a result traditional knowledge has to be taken into account in the management of those lands. It was also held that constitutional protection for Aboriginal and treaty rights under Section 35 of the Canadian Constitution extends to Aboriginal Title.

The failure of the new federal law regarding Specific Claims to take into account the requests of Aboriginal peoples to repossess lands legally belonging to them is yet further proof of the lack of readiness to address the overall land question and comprehensive claim to indigenous involvement in the decision-making over and management of their traditional territories.

Yet the Canadian federal government has to date refused to change the Comprehensive Claims Policy, its policy regarding indigenous land rights that still aims at the extinction of Aboriginal Title. This policy is not just unconstitutional, it has also repeatedly been exposed as a violation of

international human rights law. Despite unanimous opposition by Aboriginal peoples across Canada, the federal government recently changed its laws regarding Specific Claims settlements, which dealt with cases where Indian reserves have been unilaterally, and unjustly reduced by the Crown.

The new law (not yet entered into force) does not foresee the return of confiscated lands. Instead, it offers monetary compensation, capped at five million dollars. In the case of the one-million hectare Neskonlith Douglas Reserve, this amount would be little more than symbolic. It also does not at all meet the request of the local Secwepemc people for the return of their historic reserve lands and the co-management of their entire traditional territories.

The passivity of the federal government has left space open for discriminatory policies of the different provinces who claim exclusive jurisdiction over land management, and the promotion of the so-called "business as usual approach". This has allowed companies to access freely the lands and resources of indigenous peoples in Canada without having to remunerate or even consult them. This approach has been rejected by the British Columbia Court of Appeal in the Haida Decision (2002) that found that both government and companies have to consult and meaningfully accommodate Aboriginal interests.

Governance, effectiveness and management

At the national, provincial and local level, Canada's failure to implement the constitutional provisions and its international obligations under the Convention on Biological Diversity has increasingly disadvantaged indigenous peoples



who depend on their land for hunting and fishing and other social, cultural and economic activities.

Criminal charges have been laid against Secwepemc and other peoples who hunted in those areas, although the Supreme Court of Canada has recognized their Aboriginal right to hunt, fish and gather medicine and food in their traditional territories. In the specific case of the historic Neskonlith Douglas Reserve, the Secwepemc people have conducted a traditional and current use study that shows an intensification of commercial activity in their territory. This study has not, however, been applied to the management of the provincial parks (Adams Lake and Neskonlith Lake Provincial Parks). In the case of the existing Sun Peaks Ski Resort in the Neskonlith Douglas Reserve, the local Secwepemc people have openly declared their opposition to its expansion due to the effects of the existing resort on the highly-sensitive ecosystem. They have pointed to its negative effect on the entire watershed.

However, their opposition to the expansion of the Sun Peaks Ski Resort, informed as well by traditional systems that can measure the effects of commercial-industrial land use, did not stop the project. Nippon Cables has proceeded with the expansion of the resort. In defiance, the Secwepemc set up the Skwelkwekwelt Protection Centre to organize their protest. In response, the provincial government had a number of the centres and Secwepemc people removed. The government continues to promote mass tourism and the development of ski resorts in British Columbia prior to the 2010 Olympic Games. They even added the president of Sun Peaks Tourism to their deregulation task force.

Closely connected to the 2010 Olympic Games are the proposed ski resort developments in the Garibaldi Provincial Park and Cayoosh Creek Valley. Despite the opposition of all St'at'imc chiefs and peoples to the developments that would open access to and destroy their last untouched valley. It is an important hunting ground and watershed, and a vital habitat for endangered species such as the mountain goat, spotted owl and grizzly bear, for whom the valley is one of the last open trans-boundary corridors.

British Columbia's push for ski resort developments and their further deregulation is in direct contradiction to a United Nations study presented to an environmental conference of the International Olympic Committee in December 2003. The study found that due to climate change, the majority of ski resorts especially in low lying areas, such as the Interior Plateau, will soon not have enough snow to operate. This could soon lead to increased artificial snowmaking,

consuming immense amounts of energy and water and even leading to water shortages in the middle of winter.

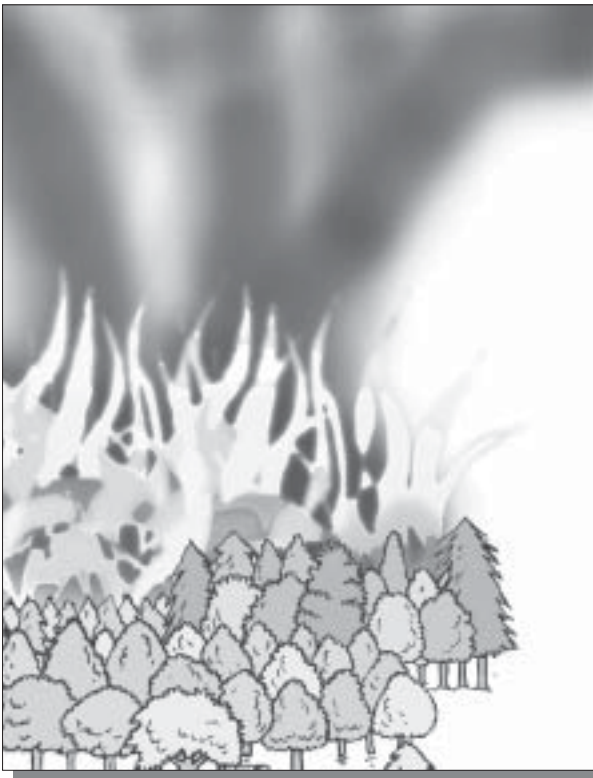
All these government policies and laws mentioned above violate the Convention on Biological Diversity, notably its Article 8(j) that foresees the use of traditional knowledge of indigenous peoples to ensure the protection of biological diversity. Indigenous land users, elders and youth have long stressed that the failure to recognize Aboriginal land rights, makes the preservation of traditional knowledge *ad absurdum*, because it can only be taught in and depends on access to the respective traditional territories. Furthermore all the developments mentioned above violate the internationally recognized principle of prior informed consent of Aboriginal peoples, and the principles of conservation that are now also enshrined in the Convention on Biological Diversity.

A proposed programme of work on mountain biological diversity with a set of actions addressing characteristics and problems that are specific to mountain ecosystems will be hopefully adopted at COP-7.

Results Achieved

Negotiation of the management, planning agreements and benefit sharing process with local communities: Despite recognition of indigenous rights by Canadian Courts and the Canadian Constitution, the federal and provincial policies inhibit indigenous involvement in the management of their territories, including protected areas, where traditional knowledge is key to ensuring sustainable management. In the specific cases of the Secwepemc and St'at'imc peoples who call the mountain areas of Skwelkwek'welt and Sutikalh their home, none of the elders and land-users who hold the traditional knowledge about those areas, have ever been consulted, let alone involved in their management. On the contrary they have openly opposed the further development of these highly sensitive areas, but the governments and investors are still pushing ahead.

This is in direct contravention of the Haida Decision in Canada, calling for the consultation and meaningful accommodation of indigenous peoples, because arguably indigenous peoples cannot be accommodated without their consent. Interestingly at the international level, Canada has consistently claimed that this principle would be unconstitutional in Canada, although in reality it is protected by section 35 of the Canadian constitution and only a last minute attempt by indigenous peoples from both Canada and South



America made the government of Canada withdraw its position at the Sixth Conference of the Parties in the Hague. The approval of the principle of free prior informed consent of indigenous peoples constituted an important threshold. In following CBD meetings all parties acknowledged the principle of prior informed consent of indigenous peoples, thereby opening the door to a broader rights-based discussion, hopefully to continue at COP-7.

Current announcements of changes in provincial policies are a major concern to Aboriginal peoples in the Interior of British Columbia. For example the Working Forest Initiative would hand over control over more than half of British Columbia's forests (actually all areas that are not currently protected areas), to big integrated wood processing companies and eventually privatize forest lands. This creation of quasi-proprietary interests of companies would further undermine indigenous land rights. But the provincial policies do not stop there, they even target protected areas. In the spring of 2003 the British Columbia Crown Corporation in charge of administering and selling public lands announced the sale of prime lake properties. Amongst the lakes listed was Neskonlith Lake, where currently all provincial land on the lake side is in a provincial park. This move has caused a lot of pain and upset in the Neskonlith community, for whom the whole of Neskonlith Lake is an integral part of their territory.

The Campbell Government also announced that they want to privatize provincial parks and most

recently in November 2003 a so called "Resort Task Force" was set up to consult with resort operators and propose ways to reduce the barriers that face the resort industry. Members of the task force have indicated that they will streamline and shorten the application process, which means reducing environmental and social impact assessments. These changes in policies are diametrically opposed to international obligations, for example of the Convention on Biological Diversity, that commits countries to cultural, social and environmental impact assessments ensuring the prior informed consent of Aboriginal peoples to developments on their territories.

Biodiversity conservation: In the summer of 2003 the interior of British Columbia was subject to an unprecedented series of forest fires, with 4 of the biggest ones, burning in the immediate vicinity of Sun Peaks, that had to be evacuated 4 times. The fires consumed much of the forests of the historic Neskonlith Douglas Reserve and will adversely impact the traditional and current uses of the Secwepemc in the area. Already before the fires, they had noted declines and disease in wildlife in the area surrounding Sun Peaks. They had openly expressed their concerns regarding the use of chemicals that are actually prohibited in Europe for artificial snowmaking in Canada, which is likely to increase in the face of deregulation, as well as lacking sewage treatment and excessive use of water and energy in those highly sensitive mountain ecosystems.

A similar catastrophe occurred in St'at'imc territory in early fall of 2003, with floods deeply affecting the Lil'wat and lower St'at'imc Reserves and territories. Both the recently fertilized eggs and baby salmon essential to the return of the salmon runs were washed away and will lead to a lack of salmon a staple food for the St'at'imc in years to come. The elders and land users connect the floods to clear-cut logging, unsustainable land use and many dams in St'at'imc territory, producing about a third of the province-wide power for BC Hydro. The St'at'imc neither receive remuneration for the resources taken from their territories, nor is their traditional knowledge taken into account in land management.

Lessons learned / recommendations

Indigenous peoples and a number of favorable governments have been stressing the important link between traditional knowledge, indigenous peoples and protected areas. Together they managed at the last SBSTTA meeting to introduce into the recommendations on protected areas a reference to the rights of indigenous peoples that reads: UNEP/CBD/SBSTTA/9/WG.1/CRP.2:

Draft Recommendation:

7(l) Recognizes that full recognition and respect for the rights of indigenous and local communities, in accordance with Article 8(j) of the Convention, in the establishment and management of protected areas require particular attention. Land tenure, prior informed consent and indigenous territorial rights are critical in this regard;

This reference is especially important since it is the first reference ever to the rights of indigenous peoples under the convention that usually just refers to traditional knowledge and management. In the past a number of countries from across the Americas had openly opposed references especially to the territorial rights of indigenous peoples. At the last meeting of the conference of the parties the provision on prior informed consent of indigenous peoples was very controversial and opposed by Canada, who along with a number of other JUSCANZ countries also opposed the reference quoted above. Despite their insistence to remove the reference, a number of Latin American countries, supported by European countries, asked that the provision be maintained and it remained in brackets. In order to ensure the operability and strengthen the concept of protected areas as well as indigenous stewardship, it is important that CBD's 7th Conference of the Parties retain this provision, and recognize the importance of the rights of indigenous peoples to their territories and to be centrally involved in conservation strategies.

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1.5 SHORTER TAKES ON WORST PRACTICES

Multinational mining companies threaten Indonesian protected areas, Indonesia

Indonesian protected areas face a crisis as the mining industry aggressively lobbies the national government to overturn its environmental standards to allow 158 companies to mine the nation's protected areas. Indonesia's Forestry Act 41/1999 explicitly bans open pit mining in protected areas, however the government has been the subject of aggressive industry lobbying including threats of multi-billion dollar international arbitration , and a complete withdrawal of investment, if the foreign mining companies are not allowed access to the protected areas.

In Indonesia, the mining industry, without needing to enter protected areas, already has a vast area under leases covering 66,891,496 ha, equivalent to 35 percent of Indonesia's land area. Not satisfied,

mining company lobbyists including Australian, Canadian and UK embassy staff have been relentlessly pressuring their Indonesian hosts to open up new protected areas for mining.

One such application is the BHP Billiton

A handful of the foreign companies proposing mines in Indonesia's protected areas : A total of 158 are proposed



Source : Igor O'Neill, Mineral Policy Institute, www.mpi.org.au

project to mine Gag Island, west of Papua, much of which enjoys protected area status. Furthermore, BHP Billiton plans to dump dangerous mine waste into the ocean, employing the controversial Submarine Tailings Disposal technique which is denounced in the new World Bank-sponsored Extractive Industries Review. No less an authority than UNESCO has petitioned the Indonesian government, identifying Gag's World Heritage potential because of its high biodiversity: 505 species of coral, which is an extraordinary 64% of all known coral species in the world, and 1,065 fish species. UNESCO warned the government of "possible environmental impacts of mining operations and related submarine tailing disposal on Gag Island in the Raja Empat Archipelago". Unfazed by such evidence BHP Billiton, a participant in the dialogue with IUCN¹⁰, refuses to drop the project, despite the resolution to acknowledge World Heritage Sites as "no-go" areas.

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Beautiful rhetoric prevents the transboundary protection of the Mont- Blanc, - the Roof of the European Alps, Switzerland, France and Italy

Effective transfrontier protection of the Mont-Blanc Massif, the highest mountain region in Western Europe, remains elusive even after a long history of initiatives undertaken to seek its conservation and protection. In many respects, the present institutional framework of tri-national protection and sustainable development only serves to prevent and stall effective conservation measures. The integrity of the region is under severe threat, unless actors can agree on a joint management plan of the roof of the European Alps.

Values

The Mont-Blanc Massif is in many ways unique and representative for the Alps and the world's mountains. It is home to the highest summit (4810 m) of the Alps and of Europe (apart from the

Caucasus), and lies astride France (80%), Italy (15%), and Switzerland (5%), uniting these countries right in the centre of Europe. The uniqueness of Mont-Blanc Massif resides in its awe-inspiring scenic beauty, its characteristic main peak, its countless crystalline needles, glaciers, and other rock formations. Representing the highest wilderness island in over-populated Western Europe, the ecological importance of the massif is significant. Combining all gradients and exposures within the same ecosystem, the Mont-Blanc area harbours fauna and flora of both the northern and southern Alps, thus providing a biodiversity refuge for a wide range of species. The region is also the highest and most reliable water reservoir for both the Po (Italy) and the Rhone (France and Switzerland) water catchments, and it provides energy and drinking water to large regions. People in the area share the same language (French) and even similar dialects and traditions, including cheese-making, cow fights, and a rich wine-making custom. Due to its beauty and height and cultural heritage, the Mont-Blanc has exerted a mystical and almost mythical pull for centuries, which still prevails and merits protection.

Threats

The Mont-Blanc region is the third-most-visited natural attraction of the world and thus draws the serious investment of an aggressive tourism industry. Despite the affluence the tourist trade has brought to its residents, a growing minority is beginning to recognize these investments as a threat to their natural environment and landscape, the very basis of their prosperity. Specifically, these include: Infrastructure of apartment houses, holiday refuges, new roads, and cable cars that are invading the valleys, the slopes, and even the central zone close to the summit; the trans-European road for heavy trucks cuts its way through the Alps precisely underneath Mont-Blanc and through the adjacent steep Alpine valleys, with the resulting traffic congestion, air pollution and security risks; increasing air traffic (from commercial, military, rescue and pleasure crafts) disturbs the mountain silence and wilderness even in higher altitudes; mountain agriculture is rapidly decreasing and thus destroying the cultural heritage and the respective biodiversity.

How to avoid protection and sustainability using the politically correct rhetoric

Mont-Blanc's need for protection has been recognised for a long time, but ironically the only transfrontier institutional initiative with this objective has resulted in reduced conservation efforts and done little to minimize current "mis-developments" and future threats. In spite of the three states' commitment since the mid-1980's to creating an international park at the Roof of the Alps, it currently is hardly protected at all. The few

¹⁰ During the World Summit on Sustainable Development held in Johannesburg in 2002, IUCN and the International Council of Mining and Metals (ICMM) agreed to a dialogue on improving the performance of the mining industry in relation to biodiversity conservation and protected areas. ICMM members, Rio Tinto, Newmont, Placer Dome, Freeport-McMoRan Copper & Gold, and BHP Billiton all currently have mine leases in protected areas, including protected forests and national parks and are engaged in lobbying governments to overturn protected areas regulations. At the 5th IUCN World Park Congress (2003) many people expressed their opposition to this dialogue and it was recommended among others to reiterate the recommendation 2.82 (Aman, 2000) which calls member States of IUCN to prohibit mining exploration and extraction in category I-IV protected areas and strict controls of those activities in categories V and VI protected areas.

small nature reserves hardly offer any protection of the central peak area, let alone of the surrounding landscape. And yet, conservation seemed to be on its way, when the local authorities from the three countries offered in 1991 to take responsibility for both protection and sustainable development of their mountain, creating the “Espace Mont Blanc”, thus preventing an “Indigenous reserve” (as they called the international park) being imposed on them. Since the federal governments delegated part of their responsibility to “Espace Mont-Blanc” it has neither developed a comprehensive plan nor carried out any concrete action on the ground. All relevant conservation is being postponed, while none of the projects for further heavy infrastructure are stopped, no comprehensive regulation of ground or air traffic is being discussed, and no opportunity for linking mountain agriculture more closely to eco-tourism is being seized.

Advocacy for Transboundary Protection

An international non-governmental organisation with a broad constituency in the three countries and beyond, ProMONT-BLANC, has been advocating for transfrontier protection and a coherent management plan, for the implementation of the Alpine Convention in the Mont-Blanc area, and for more transparency of, and wider participation in decision-making on Mont-Blanc’s future development. Local opinion in favour of long-range planning (in the long term) towards sustainable development has been galvanised by the tunnel catastrophe of 1999, when 40 people burned to death in the tunnel linking France and Italy underneath Mont-Blanc. Local residents on both sides united (but failed) to fight the return of the trans-European trucks. ProMONT-BLANC has enlarged the protest movement beyond the transport-pollution-security issue towards that of Mont-Blanc’s sustainable development. There is great potential for creating innovative sustainable governance for the missing “protected space” in the middle of densely inhabited and visited prosperous Europe, and an opportunity for participatory planning before the protected area is installed. With voters’ and stakeholders’ insistence on open dialogue, and with an active national and international presence, the existing informal set-up of Espace Mont-Blanc might finally become a structure that will provide a space to implement genuine protection and sustainable development.

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1.6 CONCLUSIONS AND RECOMMENDATIONS

The road to participatory conservation is not smooth. The case studies presented in this booklet show the complexities, as also opportunities, of taking formal conservation policies and practices into more participatory approaches. Though not representative of the large diversity of experiences across the world, these cases provide a number of crucial lessons. These lessons need to be heeded if countries are to move forward in the direction of Collaborative Management of Protected Areas (CMPAs) and Community Conserved Areas (CCAs). The bottom line is: participatory conservation has to deliver....it has to strengthen the conservation of ecosystems and species, and it has to ensure more secure livelihoods to people who are dependent on these ecosystems and species.

The recommendations made in this section are mostly oriented towards governments and official/NGO conservation agencies, though they may also apply in some cases to indigenous people and local communities themselves. Most of them are linked to the Element on “Governance, Participation, Equity, and Benefit-sharing”, of the proposed CBD Programme of Work on protected areas.

- Match policy and practice: Governments need to demonstrate, much more than has been the case so far, their commitment to actually do what they say. For example, Canada’s stated position on respecting indigenous territorial rights needs to be reflected in the case of the British Columbia protected areas. Incorporating participatory conservation into national processes such as the National Biodiversity Strategy and Action Plans, and learning from examples such as Cerro Hoya (Panama) and Mendha (India), would help in this.
- Establish clear rights and responsibilities: Governments need to provide and legitimize clear property rights on the land/water and natural resources that have been traditionally used by communities, who (if they are not already doing so), need to take on the responsibility of ensuring their conservation. The Gurig (Australia), Alto Fragua-Indiwasi (Colombia), and Mendha (India) cases demonstrate such a mix of rights and responsibilities. The complexities and risks to adopt an approach advocating the restitution of rights, should not be under-estimated, but parties to the CBD need to endorse a clear statement on this in the Programme of Work.

- **Link conservation and livelihoods:** Conservation programmes need to be linked with programmes that promote the ecologically sensitive traditional livelihoods, or alternative newer ones. This will need innovative concepts on rural development, like the sustainable use of non-timber forest products (NTFPs), community based tourism, and other such examples illustrated in the case studies here.
- **Legally support a range of PA types:** Governments need to expand the laws relating to PAs, to provide support to Community Conserved Areas, private reserves, and collaborative management practices. However, it is important to build on or supplement, rather than replace, the customary laws/practices that already govern such initiatives (as for instance in Mendha (India) and Forole) (Kenya-Ethiopia)
- **Build strong institutions:** For individual PAs, as also at regional/national levels, institutional structures that put communities in the centre of decision-making, or promote collaborative management, need to be established. These should have a clear mandate and democratic functioning, and be built on the smallest decision-making community unit (e.g. a hamlet or a user group in a village). Institutions should also deal with conflict resolution, though some situations may also require independent mechanisms for this function. The joint management boards of Gurig (Australia) and Gwaii Haanas (Canada), or the Gram Sabha of Mendha (India), are examples to learn from.
- **Make information publicly accessible:** Governments need to provide full access and right to information relevant to conservation, to build on the traditional knowledge already existing, and to encourage research on various aspects of conservation. Citizens and community groups can take the initiative of building their own capacities, and disseminate the information to foster more effective participation, as has happened with the study circles of Mendha (India).
- **Avoid destructive 'development':** Governments need to declare PAs and CCAs off-limits to large-scale 'developmental' activities that are ecologically damaging: mining, dams, tourism, highways, clear logging, etc (such as are still being promoted in PAs like the British Columbia ones, or the Indonesian ones). More sensitive forms of providing food, energy, shelter, education, communication, infrastructure, health, and other such basic inputs, need to be explored. This is especially so for sensitive areas like mountains and coasts.
- **Introduce a range of governance types:** As suggested in the proposed CBD Programme of Work on PAs, governments need to introduce various governance approaches into their PAs system. This would include sites protected completely by government, those conserved by communities or private parties, and those managed through collaborative arrangements between two or more of these sectors. Secondly, flexibility has to be built into the system, encouraging local actors to devise site-specific solutions...even while the system provides a broad framework of conservation.
- **Make trans-boundary and inter-departmental initiatives participatory:** Conservation agencies need to involve communities and other relevant stakeholders in the decision-making process of trans-boundary conservation initiatives or other conservation initiatives to bring together the multiple departments and bodies involved. Clearer government order or pronouncements regarding the complementary roles of different government departments, or of different countries in a trans-boundary situation, are critical. This also requires much better communication to the various actors in the arrangement, regarding the ecological, economic, social, or other benefits that would accrue. Finally, it needs a multi-disciplinary approach, to synergise the best from the social, ecological, and economic fields.
- **Use the ecosystem or ecoregional approach:** Countries need to place PAs in the context of the surrounding landscapes and seascapes, and expand the planning horizon to these larger units. Ecoregional or bioregional planning is gaining ground in a number of

- countries, which can be learnt from. The potential of IUCN's Category V (Protected Landscapes) needs to be used to a much greater degree, including in areas with long-standing human interaction, agricultural biodiversity, and natural ecosystems. Local and larger markets need to be used creatively, to generate benefits for local people and to be sustainable, in contrast to today's market forces.
- **Tackle inequities:** Conservation policies and programmes need to build in, from the beginning, greater understanding and action on various inequities: gender, class, caste, ethnic, age, and others. This may require special attention to providing an effective voice to weaker sections within communities in participatory conservation institutions. Parallel institutions of such sections, e.g. women's committees, or youth clubs, can also help. Governments have a particularly important role in balancing the decision-making powers of various sections, sometimes simply by supporting community initiatives in this direction, sometimes by intervening in unjust community processes.
 - **Respect multiple values of biodiversity:** Conservation agencies need to understand and respect the multiple values of biodiversity (direct and indirect), in particular the ecological, cultural and spiritual value of species and ecosystems. The Alto Fragua-Indiwasi (Colombia) initiative is an example of this.
 - **Make the initiative a process:** Even when conservation agencies take up time-bound projects for participatory conservation, they need to convert them into a process, developing long-term mechanisms that are continuously adapting to new situations and allowing communities the time and space to become fully capable of managing the initiative.
 - **Carry out monitoring and evaluation:** Conservation institutions, donors agencies and communities need to consider participatory monitoring and evaluation (M&E) as an integral component of the project implementation process. Continuous review of the plans, rules, budgets, and other elements of the initiative should be based on such M&E.

2.0 TECHNOLOGY TRANSFER, COOPERATION, AND CAPACITY BUILDING: BETTER AND WORST PRACTICES

2.1 INTRODUCTION

The knowledge that underpins technological development, transfer and absorption lies in public institutions, private institutions and local communities and indigenous peoples.

Technologies relevant for the conservation and sustainable use of biological resources exist on a wider scale than is officially recognised, and continue to evolve in all countries with transfers of technologies occurring in two-way directions between the South and North, and within the South. At the community level, technology exchanges have also been occurring, and continue to do so.

While there is emphasis on product development, developing countries should also seek knowledge and technologies that are relevant to monitoring, conservation and planning that integrate biodiversity conservation, ecosystem services and community rights into development policy and practice.

Four cases are presented below : the SABONET regional conservation and monitoring cooperation initiative that takes advantage of information technology and the Nayakrishi Andolon: a community-based system of organic farming in Bangladesh ; the Nadep method of compost manufacture in India and the control of trypanosomosis through Tsetse trapping technology in Kenya. The challenge is to support the up-scaling and replication of such best practices, in accordance with local conditions, as well as mainstreaming them into sustainable agriculture and conservation policies through technology transfer and cooperation.

Meanwhile, product development is currently dominated by genetic engineering and its related technologies, thus potentially skewing priorities in technology choices. The response below by Dr. Tewolde Berhan Gerbe Egziabher of Ethiopia to the December 2003 report of the UK Nuffield Bioethics Council, "The use of genetically modified crops in developing countries", represents the latest in a continuing debate on the right of developing countries to make technology choices at a time where the proponents of genetic engineering are stepping up their advocacy.

The reality is that the process of generation, sharing and dissemination of technology is complex and sometimes costly. It requires, among others,

appropriate knowledge and skills, institutions, policies, a supportive international environment and international rules that facilitate technology transfer and/or cooperation. In the case of biological resources and traditional knowledge, international and national rules are also needed to protect the natural resources of sovereign states, and the rights and knowledge of local communities and indigenous peoples.

Unfortunately, major obstacles prevent the full realisation of appropriate technologies that can fulfil the goals and objectives of the Convention on Biodiversity. The issues and worst practices presented below are just the tip of the iceberg.

Precautionary Principle

The Precautionary Principle is a central strand weaving the linkages between poverty alleviation, food security and food sovereignty, human health, ecosystems management, biodiversity conservation and sustainable use, and climate stability. It is crucial for the assessment of technologies, products and activities that impact on all those dimensions. A key challenge for the global community is the implementation of the Precautionary Principle which underpins the international agreements related to biodiversity, biosafety and climate change.

The Principle is also very important in reversing the burden of proof. Currently, local communities, indigenous peoples and the public at large have to prove that an activity or product has adverse impacts on biodiversity and human health. Socio-economic impacts are often disregarded, from rights to resources and traditional knowledge to loss of livelihoods. The Precautionary Principle shifts the responsibility to the proponent of a project or activity to show that there will be no adverse impacts. Thus biodiversity conservation, ecosystem approach and socio-economic considerations into technology or activity assessments must be integrated into decision-making. This goes beyond the current environmental impact assessment parameters.

However, there is intense opposition by major developed countries where trade and narrow economic interests dominate governments' positions in international negotiations and national implementation. Among most developing countries, there is confusion and apprehension that this Principle would prevent them from obtaining technologies and products for economic

development. In fact the application of the Principle helps to ensure the development of appropriate and environmentally sound technologies. The controversy surrounding genetic engineering reflects the reduction of choices of technology. It also starkly shows up the conflict between reductionism represented by short-term economic benefits for a minority, and complexity represented by biodiversity, ecosystem stability and peoples' well-being over the long term.

There is intense pressure and even threats by some developed countries that applying the Precautionary Principle would lead to challenges and sanctions at the World Trade Organisation. For example, the US-European Union dispute at the WTO over Europe's regulation of genetically modified organisms may create a "chilling" effect among countries that want to have strong biosafety policies, laws and measures.

The Mexican maize contamination case represents a worst practice when the Precautionary Principle is ignored. The philosophy and programmes of the Norwegian Institute for Gene Ecology as a best practice offer a way forward that begins with the Precautionary Principle.

Enabling environment for receiving and absorbing technologies

It is well-known that transnational corporations (TNCs) adopt many restrictive policies and measures on transfer of technology. In the past licensing was a route through which at least some transfer of technology could occur. However, the onset of globalisation has removed barriers to investment. As a result, TNCs set up their own production facilities in developing countries and are reluctant to transfer technology through licensing because of the fear that such an approach will create competition for their own subsidiaries. There are also situations in which TNCs put restrictions on the export of products which are manufactured utilising transferred technology. One clear example is the pharmaceutical industry which uses both restrictive business practices and IPRs to maintain its market monopoly.

It is well known that the ongoing process of globalisation is uneven. While barriers to investment are coming down rapidly and capital becoming highly mobile, the mobility of other factors of production like labour and technology is increasingly restricted. The problem is that there are no internationally agreed rules for facilitating transfer of technology. This untenable situation is sometimes defended on the argument that technology is privately held and that therefore, governments cannot make rules regulating it. In

this context, one cannot forget the fact that Intellectual Property Rights (IPRs) are essentially private rights and that there is a full-fledged WTO Agreement relating to IPRs (TRIPS).

A noteworthy study is the Report of the International Commission on Intellectual Property Rights (CIPR) set up by the UK Government that confirms many of the concerns raised by developing countries in a number of international fora, and experiences at the domestic level. The CIPR released its report in September 2002, entitled "Integrating Intellectual Property Rights and Development Policy" (this is cited in some CBD Secretariat papers). A literature survey, commissioned papers, consultations and country visits were undertaken to "incorporate voices from both developed and developing countries: from science, law, ethics and economics and from industry, government and academia" [for a full report, see www.iprcommission.org]

This Report questions many of the assumptions about the role of IPRs in promoting economic growth, trade, investment and technology transfer. It is an important contribution to the ongoing public discussions, inter-governmental negotiations and national implementation of international IPR commitments, and has been the impetus for the World Intellectual Property Organisation (WIPO) to conduct a study on the impact of IPRs on developing countries.

In its assessment of international rules - from TRIPS to the ongoing negotiations at WIPO (where developed countries are also trying to obtain higher standards than those in TRIPS) - the CIPR concludes that there are many weaknesses and restrictions that will further curtail the right of developing countries to exercise flexibilities in designing appropriate IP policies and rules, to the detriment of these countries' development objectives. It also points out that TRIPS has strengthened the global protection offered to suppliers of technology, but there is no international framework to ensure that the transfer of technology takes place within a competitive framework that minimises the restrictive technology licensing practices. (Note: Articles 15 and 16 of the CBD contain obligations for technology transfer and cooperation but there are no implementing mechanisms).

However, the CIPR does not go far enough in proposing structural reforms to IP systems. This remains a major challenge for Parties to the CBD: to steer the development of principles and rules that meet the objectives of the CBD and protect the human rights of indigenous peoples and local communities to their resources and knowledge.

The role of IPRs

Discussions on the relationship between the CBD and TRIPS Agreement have been largely left to WIPO and the WTO. These have not dealt with IPRs as obstacles to technology transfer, though some developing countries have raised the issue. The performance of WIPO with regard to genetic resources, traditional knowledge and their interface with IPRs has not been satisfactory. Many developing countries had originally called for the CBD Secretariat to lead a study on TRIPS and the CBD but this has instead been handed over to WIPO and the WTO. Thus the COP should defend the integrity of the CBD and provide guidance and direction to further studies and proposals on IPRs as they relate to the CBD's objectives and principles.

Meanwhile, the overall situation is that knowledge and technologies in developed countries are increasingly proprietary in nature (ie given legal protection as private property under national laws on IPRs), and biological resources (and their parts) are also becoming proprietary.

As a result "biopiracy" of natural resource, traditional knowledge and public domain research outputs of developing countries by entities of developed countries has risen sharply in the 10 years the CBD has been in force.

At the same time, the transfer of technology to developing countries does not have a good record, while technology cooperation is, at best, miniscule. The dominant experiences have been no transfer; transfer at high costs (thereby causing developing countries to pay high prices for products such as pharmaceuticals, and royalties for technology); and transfer of obsolete or hazardous technologies and products.

Following a decade of commitments under various UN Summits and agreements, developed countries are now obliged to transfer environmentally sound technologies to developing countries. However, the reality has been a victory for private IPRs over affordable access to environmentally sound technology for developing countries. Experiences in the Montreal Protocol on Ozone Depleting Substances and the Climate Change Convention, and studies conducted by international organisations and independent research institutions, show that IPRs are an obstacle rather than a tool for technology transfer (a claim often made by corporations and their supporters). Worse, strict IPR regimes can discourage research and innovation by local institutions in developing countries. This is largely due to the fact that most

patents and other IPRs in developing countries are held by foreign researchers or firms.

These trends are obstacles to the diffusion of technology, and to the fair and equitable access to technologies for all countries, in addition to the opportunities and constraints illustrated by the following cases studies.

Chee Yoke Ling

2.2 BETTER PRACTICES, IN DEPTH

*The SABONET experience in Technology Transfer, National botanical Institute, South Africa*¹¹

Overcoming the taxonomic impediment and leaping the digital divide

This best practice case study will describe the approaches to, and lessons learned in, addressing technological challenges relating to achieving the goals of the Convention on Biological Diversity in southern Africa. SABONET, the Southern African Botanical Diversity Network, was conceived in 1990 and funded in 1996. The project, comprising participation from ten southern African countries, will conclude in 2004.

Articles 6 and 7 of the CBD require each Contracting Party to, inter alia, 'develop national strategies; identify components of biological diversity; monitor these components; and maintain data derived from identification and monitoring programmes'.

For much of the developing world, achieving the objectives of Articles 6 and 7 will be frustrated by what has become recognised as the "taxonomic impediment" - the lack of adequate human and institutional capacity to undertake the required identification, classification, archiving and monitoring of national biodiversity resources. Furthermore, until recently, many African countries had very limited access to electronic database facilities, e-mail and in some instances, even telephones. They have faced a uniquely African challenge, described by South Africa's President Mbeki as "the digital divide".

The technological transfer goals of SABONET include the development of capacity to inventory,

¹¹ This paper is based on a presentation published in "Proceedings of the Norway IUCN Conference on Technology Transfer and Capacity Building", NINA, Trondheim, 2003. readers are referred to the SABONET and NBI websites for more information at: <http://www.nbi.ac.za> and <http://www.sabonet.org>

monitor, evaluate and conserve the region's botanical diversity, with specific skills in computer literacy, database management, preparation and publication of checklists, the identification of conservation priorities and development of botanical garden strategies and action plans.

A south-south solution

SABONET is first and foremost a regional south-south technology transfer and capacity building exercise involving countries with widely differing biodiversity, human and institutional resources. Ten southern African countries (Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe) have actively participated in the project, through which over 410 young botanists, horticulturists and conservation biologists have been trained, 26 to higher degree level. Seventeen herbaria have been fully equipped and their collections consolidated, with over 450 000 specimens being electronically databased. National and regional checklists, Red Data Lists and specialised field expeditions to high priority centres of botanical diversity have been undertaken.

Building capacity in biodiversity science: Synergistic Partnerships

The primary objective of SABONET, as stated in its Project Document, is, in a nutshell, to "build capacity in biodiversity science". Southern Africa in the 1970s and 1980s was a region beset with armed conflict resulting from the destabilisation strategy of the then South African government. Biodiversity conservation was one of the many victims of the political situation.

Change came in 1990. Plant scientists from all over southern Africa met in Maputo to develop a programme for collaboration throughout the region. For the first time in nearly 40 years, South African botanists could plan joint activities with their colleagues from Angola to Zambia. The meeting agreed on an ambitious plan of action. Further consultations were held in Lilongwe in 1991 and Bulawayo in early 1993. In September 1993 a Southern African Botanical Diversity Conference was convened in Kirstenbosch, Cape Town, with 120 professionals from 14 African countries attending.

A revised action plan, sharply focussed on capacity building, was drafted and in October 1993 submitted to United Nations Development Programme (UNDP) as a pre-proposal. Funding was received between 1996 and 1998. The key partners in the project are the herbaria and universities of the ten participating countries,

supported by national governments, NGOs and scientific associations. Northern institutions, such as Royal Botanical Gardens, Kew; Botanical Gardens Conservation International (BGCI), University of Lisbon and Missouri Botanical Garden, have participated in SABONET activities, strengthening north-south linkages and creating new synergies.

Synergistic partnerships have developed at national and regional levels, particularly where joint multi-national field expeditions (such as those to the Okavango Swamps, the Nyika Plateau and the southern Mozambique Coastal Plain) have brought universities, herbaria, NGOs and local conservation field experts together.

African Renaissance

The colonial era had left southern Africa ill-equipped to face the technological challenges and opportunities of the late 20th century. Lack of professional development of national staff in many universities, museums and scientific organisations had resulted in the rapid collapse of biodiversity institutions.

Support received from donor organisations was often inappropriate, reflecting the personal interests of northern academics and consultants rather than the needs of the south. The lack of meaningful south-south scientific collaboration deepened the problem. The initiatives taken by the SABONET partners introduced the change process that has characterised the "African Renaissance".

Building on PRECIS

SABONET has proven to be an effective south-south solution to capacity building and technology transfer. The electronic database used (PRECIS) was a local product. All training courses were led by local specialists, and with one exception, all university studies were undertaken in the region. This approach did not exclude participation by northern institutions, and links with many European and North American institutions have been strengthened through SABONET.

PRECIS is the multi-faceted Pretoria National Herbarium Computerised Information System, developed in the 1970s to make the vast knowledge base found in the herbarium's 1 200 000 specimens electronically accessible. The PRECIS system has several sub-systems covering specimen label information, taxonomic information, threatened plant status, medicinal uses, etc. The system has now been applied in all major southern African herbaria, with an additional 450 000 specimens being added during SABONET.

While PRECIS was at the core of the SABONET project, the capacity built in the project was far more diverse, building institutions capable of responding to the wide range of questions relating to biodiversity conservation in the region.

Regionally driven needs assessment

An initial needs assessment project provided a comprehensive review of each of the 95 herbaria in the region. A parallel study was undertaken on the botanical gardens and led to the publication of an action plan for southern African botanical gardens.

The needs of end-users of botanical information had been rather narrowly defined at the initiation of the project. The Mid-Term Review recommended a concerted effort to test the project's assumptions through a series of end-user workshops. These have been undertaken in six countries, and continue in the other four countries.

Building institutions

Based on the needs assessments, and the ability of individual institutions to effectively implement funding, the major herbaria and gardens were provided with research, survey and communication equipment. Each country now has an adequately equipped and operational facility, actively conducting floristic surveys and plant conservation work.

Participating institutions required specific supplies and equipment to ensure their full participation in the SABONET Project Programme. To this end, SABONET supplied institutions with expendable equipment and materials for operation. Each country has received a four-wheel-drive vehicle for fieldwork, computers and printers (with associated software and e-mail) for data storage and analysis, geographic positioning systems (GPS) for accurate site recording, as well as equipment for use in herbaria. Altogether 17 herbaria in the ten participating countries benefited directly from these allocations. Many other herbaria and their staff have also gained experience from SABONET.

Building capacity: learning by doing

The underlying philosophy of the project is "learning by doing" with hands-on participation by every trainee. Each country set its own targets for the development of electronic databases, checklists and red data lists, and was responsible for financial management, reporting and project administration at a national level. While success and quality of products varied, the delegation of responsibility was a key driver of capacity building.

Individual training programmes commenced with computer literacy courses, most of them being conducted at the well-equipped National Herbarium in Pretoria. In-country and regional courses were also held in Botswana, Lesotho, Malawi, Mozambique, Namibia, Zambia and Zimbabwe.

Most courses focussed on database management, leading to the entry of information from the herbarium specimens. Courses in Herbarium Management, Plant Identification, Botanical Art, Red Data Listing, Environmental Impact Assessment and Botanical Garden Management ensured a broad base of competencies in the SABONET team.

SABONET has achieved its objectives mainly by offering individuals career opportunities to pursue their personal ambitions. Training and formal post-graduate course attendance, sponsored by SABONET, have provided participants with the qualifications to advance their careers in biodiversity science and conservation. To date, SABONET has supported a total of 26 students; 35 degrees have been awarded by June 2003.

Project effectiveness

The computerisation of southern African herbaria is a core activity within the SABONET Project through which specimen label information is recorded and stored in the PRECIS Specimen Database. Over 450 000 herbarium specimens have been computerised to date. An important objective of SABONET is to produce up to date checklists of the flora of each participating country. This has been initiated with checklists of the grass flora, with lists having been published for Namibia, Lesotho and Zimbabwe, a tree list for Botswana, a fern list for Swaziland and a comprehensive list of the flora of Namibia.

Another key objective of SABONET has been the production of Red Data Lists for each country. This project, supported by USAID's NETCAB, has resulted in a comprehensive listing for all ten countries.

The Red Data List project estimated that almost one tenth of southern Africa's flora is at some risk of extinction. This prompted SABONET to implement the Threatened Plants Programmes (TPPs) in its 22 participating botanical gardens. Gardens from Botswana (1), Lesotho (1), Malawi (3), Mozambique (3), Namibia (1), South Africa (9), Zambia (1), and Zimbabwe (3) are now actively taking part in the SABONET Project's TPPs.

SABONET organised three regional expeditions to explore the botanical diversity of selected areas. The first expedition, linked to a training course in aquatic macrophytes, was held at the Okavango Swamps, Botswana. The Nyika Plateau Centre of Endemism in Malawi and Zambia was the target of an expedition in which more than 20 botanists from five of the ten participating SABONET countries took part. A total of 3,343 plant specimens were collected by expedition members. A third regional expedition took 33 plant collectors of southern Africa into the heart of the botanically rich Maputaland Centre of Endemism in southern Mozambique where they collected close to 1,600 plant specimens and did ecological sampling of previously unknown vegetation types.

Developing a corps of biodiversity professionals is a central goal of this project, with training being central to achieving this. During these courses, 410 individuals from 12 countries received training in the 29 courses presented by SABONET. 35 percent of the trainees were female. 51 institutions in southern Africa have benefited from the courses.

SABONET is now approaching its conclusion as a GEF-funded project. Participating institutions have incorporated many of the SABONET contract staff into their permanent establishment. The inventories, checklists, red data lists and databases developed can now serve national biodiversity strategies and action plans. Individual countries are in a position to develop their own proposals for funding, where needed, to meet the targets of the Global Strategy for Plant Conservation and the International Agenda for Botanical Gardens in Conservation.

Through south-south technology transfer, SABONET has demonstrated the effectiveness of an African solution to African problems.

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Gene Ecology: Conducting independent biosafety research and training, Norway

The Norwegian Institute of Gene Ecology (GENOK) is a private foundation established in 1998, and based in Tromsø, Norway. The foundation has the following aims:

- To perform research, distribute information and offer advice with regard to natural processes, which may represent risks and hazards for ecosystems and public health in the context of genetic engineering applications.
- To develop methods for risk assessment and management in relation to the presence of genetically modified organisms (GMO), viruses (GMV), and gene constructions in ecosystems, food chains etc.

Technology assessment: Principles and Approaches adopted by GENOK

Genetic interactions in ecosystems may be more dynamic and complex than acknowledged so far. Genetic change and genetic exchange phenomena seem to occur more frequently in nature than in laboratories, and may be regulated by unknown environmental factors. Local environmental conditions and chemical contaminants (pesticides and other xenobiotics), that will undoubtedly vary in concentrations and combinations between different locations are examples of such environmental factors. These may have impacts on the extent of horizontal gene transfer, and on how modified genes are expressed and affect the recipient organisms. Consequently, it is important to establish model systems in the laboratory, which mimic the ecological interactions and complexity of the real world.

Basis for risk assessment and management

The difference between risk and probability is the following : Risk can be defined as the probability of an occurrence of an incident or phenomenon, multiplied by the consequences arising therefrom. At this moment we know little about both probability and consequences in relation to putative health and environmental effects of many genetic engineering applications.

Horizontal gene transfer

Horizontal gene transfer signifies a non-sexual transmission of genetic information within or between species. The phenomenon is common in nature, but our knowledge concerning ecological processes promoting such events and barriers prohibiting them is scanty.

International cooperation to transfer experiences

GENOK has received funding from the Norwegian Ministry of Foreign Affairs to initiate a Biosafety Capacity Building programme. This consists of three different training courses (especially for policy makers, regulators and scientists, and civil

society organizations from the South); a book/CD-Rom project; an International Symposium on Biosafety every two years; and a GE/GMO Biosafety Forecast Service.

GENOK is also involved in joint venture research projects with the Department of Microbiology and Virology and the Department of Molecular Biotechnology, University of Tromsø. This is based on funding from the Norwegian Research Council and the Norwegian Cancer Society. In 2001, extensive feeding tests to explore the health effects of GM food were started. As of 2003 the University formally employed the staff, including about 20 scientists/researchers.

The scientists and professionals behind GENOK have established extensive connections both nationally and internationally. The key NGO collaboration is with the Third World Network (TWN) in Penang, Malaysia, which includes the exchange of scientific know-how, as well as biosafety courses. The training of PhD and MSc students for biosafety is also planned. One of the goals is to assist in the establishment of institutions of gene ecology in various parts of the world that would house scientists and researchers with similar aspirations and approaches. For instance GENOK is now looking to forge a partnership with the New Zealand Institute of Gene Ecology, established in Christchurch in 2002.

North-South cooperation in biosafety training on the “Holistic Foundations for Assessment and Regulation of Genetic Engineering and Genetically Modified Organisms”

GENOK, the New Zealand Institute of Gene Ecology and the Third World Network are the joint conveners of the biosafety training component of the GENOK Biosafety Capacity Building Programme. This unique collaboration of scientific institutions and civil society organisations developed in response to the urgent need for biosafety capacity building among policy-makers, regulators, scientists and CSOs so that the context, principles and tools for technology assessment and technology choices can be clarified and shared with developing countries. Although priority is given to developing countries, the course is also open to participants from developed countries who can obtain their own funding. Applications are invited and a selection process with defined criteria determines the final participants.

The first course was held at the University of Tromsø, Norway in August 2003. It consisted of 63 hours of lectures and guided discussions and 12 hours of laboratory work. The Norwegian

Government provided financial support while the University of Tromsø offered the venue and lab facilities (including the guidance of post-doctoral students to lead the course participants through the laboratory sessions). A second course will be held in 2004.

During this initial phase, the participants will be a combination of government regulators and policy makers, scientists from universities and research institutions as well as CSOs. Evaluation and feedback from participants will contribute to the refining of the course structure and organization. Regional and national training workshops will form part of the training programme in the second phase.

The total number of participants in the 2003 course was 49: 14 from Africa, 12 from Asia, 15 from Latin America and eight from Europe (five were from Central and Eastern Europe). Around 30 international resource persons were present at the course, ranging from scientists (including social scientists), policy makers, regulators, lawyers, development experts, and indigenous and community leaders. The participants were a mixture of scientists, policy makers, regulators and NGOs. The rich fertilization of disciplines and experiences meant that participants and resource persons were both learning and teaching, and this emerged as a strong characteristic of the experience.

The course offered a combination of lectures, group work, and hands-on laboratory sessions, where participants were able to perform experiments to observe the uptake of naked DNA in bacteria, for example, thus appreciating the phenomenon of horizontal gene transfer in order to understand the risks posed by GMOs.

The topics covered included:

- Overview of genomes, genes and gene expression.
- Genome sequencing, bioinformatics and functional genomics.
- Horizontal gene transfer (HGT) from GMOs.
- Application areas for genetic engineering.
- Risk areas connected to GE/GMO applications.
- Economic, legal, and ethical aspects of GE/GMO applications.
- Cultural, social, political issues in GE/GMO applications.
- Policy issues, including capacity building (scientific, monitoring and enforcement, educational, legal).
- Alternatives to GE/GMO applications;
- Gene ecology.



Participants of the course could obtain on successful completion of the course - and submission of a written paper — 12 university credit points that would contribute to a doctoral degree at the University of Tromsø.

- Laboratory practical sessions on PCR and horizontal gene transfer into bacterial and mammalian cells.

The course was premised on providing the participants with the basic foundations on which to assess the risks related to genetic engineering and genetically modified organisms, in accordance with the Precautionary Principle. The conceptual framework followed a “corridor concept”, starting from the point of ecosystems as resources, to the gene donors, and so on, and finally back to the ecosystem, where the GMO is introduced. At each ‘station’ in the ‘corridor’, the scientific and socio-economic concepts, risks and implications were critically examined.

The molecular biological underpinnings of genetic engineering were closely scrutinized. Emphasis was also placed on concepts of risk and governance of science. Issues relating to the use of genes and resource providers, along with the ensuing complications of ownership and intellectual property rights were also explored. The course examined the use and development of GMOs in the context of sustainable development and agriculture, technology assessment and choice, and offered alternative concepts, solutions and paradigms to the mechanistic and determinist option of genetic engineering and GMOs, which in many parts of the developing world are not “alternatives”, but rather living and vibrant systems of knowledge and practice.

Legal and regulatory issues were also discussed in this context, focusing on the Cartagena Protocol on Biosafety, other international instruments, regional and national experiences. There were sessions, too on participatory mechanisms and approaches.

In the six months since the first course, there have been requests for regional and national workshops. A number of the resource persons with their collective expertise have also been sought for their experience and knowledge. Expertise from within the regions is being identified to expand the pool of people and further develop the course to meet regional needs and strengthen regional capacity. UNEP has also joined in as a co-convenor for future training programmes.

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2.3 SHORTER TAKES ON BETTER PRACTICES

Nadep method of compost manufacture, India

The livelihoods of smallscale farmers can be strengthened through adopting simple and affordable technologies that promote sustainable agriculture practices such as composting. This can also contribute to the conservation of biodiversity, ensure food security and generate income for poor farmers. The Nadep method provides an excellent example of one such technology that has been developed in the third world.

Compost improves soil biodiversity, soil health and nutrient availability improving plant productivity and resistance to pest and diseases. Sir Albert Howard, working in the 1930s in India, found that crop plants relied symbiotically on root fungi (mycorrhiza) for their phosphorus needs. In return for supplying the plant with phosphorus, the fungus took its carbohydrates from the plant. These fungi needed particular soil conditions for their survival and the plants on which they thrived often required the fungi for their survival. The soil conditions they favoured were high in humus from decomposed crop residues and animal manures and biological activity. He promoted the manufacture and use of compost not only because of improved production through increased nitrogen availability, eliminating the need for artificial fertilisers, but also its presence in the soil increased phosphorus and other nutrient availability and thus improved plant health and resistance to pests and diseases, reducing the need for pest control measures. Compost technology is biodiversity enriching and sustains livelihoods. The technology is being transferred worldwide especially to support agroecological and organic farming systems.

Since then there have been a number of developments in producing high quality compost of which the Nadep method of making compost, first developed by a farmer named N.D. Pandharipande (also popularly known as "Nadepkaka") living in Maharashtra (India), is an example. The Nadep method of making compost delivers large quantities of high quality compost within 3 to 4 months with a minimum of human effort. The system permits conversion of approximately 1 kg of animal dung into 40 kg of rich compost, which can then be applied directly to the field. The Nadep method of composting enables the farmer to increase the quantity of compost rapidly within a given frame of time and without any significant additional expense.

Description of the practice/innovative experience and its main features

The Nadep method involves the construction of a simple, inexpensive rectangular brick tank with enough spaces maintained between the bricks (partial honeycomb pattern) to provide for necessary aeration. The recommended size of the tank is of the order of 10 ft (length) x 6 ft (breadth) x 3 ft (height). The tank can be erected with bricks and with the use of mud mortar. Cement may also be used throughout but this is not necessary. However, the last two (topmost) layers of brick ought to be fixed in cement or other binder so that the structure has stability and is not damaged during actual operations of filling and emptying

the tank. Bricks used may be either sun-dried or kiln-fired. The total number of standard bricks required for a tank of this size is approximately 1,500. The compost will take between 90 and 120 days to be completely ready for removal and use. Nadep compost could also be generated in dug pits, although this may take longer.

Effects of the practice/innovative experience

- Large quantities of organic manure or compost are made available through the Nadep process.
- The compost, worked into the soil prior to the planting of seeds, has a remarkable impact on the growth of the plants, improves the condition of the soil and increases the ambient environment to enable proliferation of soil microorganisms, including earthworms.

Significance for (and impact on) policy-making

Agriculture departments can cooperate with rural development departments and organisations to organise production of Nadep compost on a large scale as the system makes available to the farmer a fairly large amount of compost on a sustainable basis without requiring continuous financial inputs.

The method can also provide the basis of a rural development scheme, which will idle labour in the manufacture of a socially useful product and also enhance incomes as the compost produced has a ready demand among farmers.

Possibility and scope of transferring to other communities or countries

The Nadep method of making compost is a simple technology, which can be disseminated to other communities and countries through a well-designed manual of not more than 4-5 pages.

Source: Khor and L. Li Lin, 2002b.

Nayakrishi Andolon: A community-based system of organic farming, Bangladesh

In Bangladesh, community-based organic farming started from the realisation of the harmful effects of so-called modern agriculture. Modern agriculture, introduced in the mid-sixties as a package of chemical fertilisers, pesticides, high yielding variety (HYV) seeds and irrigation water, started showing a tremendous decline in crop yields. This led to an enormous increase in demand for application of inputs, especially fertilisers and pesticides. Groundwater was no longer as

available as it used to be. The livestock, fish and poultry populations were diminishing. Exotic varieties were being introduced gradually. Many poor farmers were forced to sell land and other productive assets, and to shift from farming to non-farming occupations. It was amid such a background that some farmers gathered together to seek an alternative - not just an alternative method of farming, but community-based work which is organic in nature. They named it Nayakrishi Andolon, to indicate that this method is not "old" in a backward sense, but is a newer method, incorporating traditional knowledge and wisdom. It appropriates newer ideas and "scientific" innovations if they are suitable for the farmers and the environment. Through a great deal of interaction and sharing among the farmers they have developed a philosophical base to relate productively with Nature and seek happiness. The farmers also call it an Andolon - a movement - because they feel that a change is necessary in the mindset of the people with regard to crop production and distribution. The work must be done collectively; farmers must be mobilised. It is, therefore, essentially an andolon of the farmers to produce healthy food, a healthy environment and a happy life. In its simplest expression, it is an act of ananda, a happy way to relate with Nature and enjoy life. More than 25,000 farmers have since been organised in the four districts of Tangail, Pabna, Cox's Bazar and Noakhali.

Nayakrishi Andolon is based on 10 simple principles developed through the experiences and knowledge of farmers.

Nayakrishi Principle 1: Absolutely no use of pesticides.

Nayakrishi Principle 2: No use or gradual decrease in the application of chemical fertilizers.

Nayakrishi Principle 3: Multicropping, inter-cropping, mixed cropping, agroforestry and other familiar methods are used to retain and enhance soil fertility.

Nayakrishi Principle 4: Practice of agroforestry and integration of fuelwood, fruit and various multipurpose trees along with rice and vegetable fields.

Nayakrishi Principle 5: Calculate total yield of a farming household and the material gains of the community as a whole through maintenance and enhancement of biodiversity.

Nayakrishi Principle 6: Livestock, poultry and semi-domesticated birds are part of the farming household.

Nayakrishi Principle 7: Local varieties of livestock, poultry and fish are given priority.

Nayakrishi Principle 8: Seeds and genetic resources must be conserved at the household and community level. The privatisation of seeds and genetic resources and the patenting of life forms are resisted.

Nayakrishi Principle 9: Water resources must be conserved.

Nayakrishi Principle 10: Use of deep tubewells for irrigation is not necessary.

source: Khor and Li Lin, 2002a.

Transferring Tsetse fly trapping technologies to communities in protected area buffer zones, Kenya

Kenyan livestock owning communities, living in the buffer zone of a game park protected area, have embraced a simple technology based on complex science to reduce the population of blood feeding Tsetse flies (*Glossina genus*). These flies harbour a trypanosome parasite that causes debilitating and often fatal diseases known as trypanosomosis, for example sleeping sickness in humans, and drastically reduce cattle productivity and hence livelihoods. People living in these buffer zones can be in conflict with the management of the Protected Area when they identify transmission of such diseases from wildlife that threatens their health and livelihoods.

The 3,600 households in the Kathekani community near Tsavo game park, who depend on livestock raising - as cropping is risky due to the uncertainty of rainfall - have found a solution. They have disseminated a simple technology, based on insect ecology and behaviour research by ICIPE (International Centre for Insect Physiology and Ecology) that lures Tsetse flies into trap where they perish. Fly populations can be consistently reduced by 99% and with concomitant reductions in the incidence of Trypanosomosis. This has resulted in improved buffer zone management and reduced conflict.

ITDG has been developing a "bottom-up" process to control Tsetse flies and Trypanosomosis with the Kathekani community. The trap technology used was developed by ICIPE and is based on attracting the flies through odour and colour. Acetone and/or cattle urine is used to provide the odour. The trap is made from blue material that attracts the flies. The participatory methodology used for dissemination has involved a dynamic interplay between local livestock keepers, a community-based institution - Mbung'o Committee, ITDG and the Kenya Trypanosomiasis Research Institute (KETRI), a national research institution for Tsetse fly and Trypanosomosis.

In 1994, ITDG carried out a survey of Tsetse fly density/population dynamics. The technical information compiled for planning and priority setting was data on (i) the distribution and prevalence of the disease and (ii) the appropriateness of the available control methods under existing socio-economic and ecological conditions in Kathekani. The appropriateness of the available control methods was assessed by determining their suitability, transferability and sustainability in Kathekani. Suitability was determined by an assessment of the technical efficiency, community participation and cost-effectiveness of the various methods ranging from traps, targets, insecticides, sterilization of male Tsetse flies and use of nets.

In Kathekani, Tsetse fly-trapping control through the use of odour-baited traps was identified as the most appropriate technology by the communities.

Achievements

The level of Trypanosomosis was reduced from 30% in 1998 to only 6% in 2000 when ITDG interventions ceased. However, because of the perceived benefits, the local community has continued to control Tsetse flies through maintenance of traps and the technology is being transferred to other communities.

Summary of activities that have helped to ensure continuity of the Kathekani initiative and wider technology transfer to other communities:

- Involving a decisive number of key community members in appreciation of the problems of Tsetse flies and Trypanosomosis and the need to facilitate full participation by most of the community.
- Creating wider community awareness through meetings and demonstrations about the problem.
- Supporting members of the local communities to access full information on available technologies to enable them to make significant input into decision-making about technology choice for Tsetse fly control
- Establishing and strengthening community organization structures such as the Mbung'o (Tsetse fly) Committee. Local businesses are also involved.
- Involving the community in project identification and design.
- Monitoring and data collection by community members themselves.
- Broadening involvement: the initial project included only three villages but now, 46 villages are using the traps after learning from fellow farmers.

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2.4 WORST PRACTICES, IN DEPTH

Maize Rage: GM contamination in the centre of origin for maize, Mexico

Twenty-five months after the first scientific evidence became public, the Mexican government and the scientific community acknowledge that Mexico's traditional maize crop is contaminated with DNA from genetically modified (GM) maize despite government prohibition on the planting of GM seeds in Mexico. Mexico is the centre of origin for maize - one of the world's most important food staples.

On 9 October 2003, peasant farmers and indigenous communities along with civil society organizations in Mexico publicly released the results of their own testing that found GM contamination of native maize in at least nine states - far more serious and widespread than previously assumed¹². They even found cases of single plants contaminated with multiple transgenes derived from different GMO varieties.

The issue of the contamination in the centre of genetic diversity of maize, one of the world's most important food crops, has long-term negative implications that extend far beyond Mexico

If the Mexican government lifts the moratorium on commercial planting of GMOs it will find itself in the unenviable historical role of having permitted the destruction of a resource that is critical for future global food security, and of having put the most treasured heritage of Mexican indigenous peoples and peasant farmers at risk.

Uncertain is the word that best describes GM technology today. The long-term impacts of GM contamination on crop genetic diversity are not known. However, there is growing evidence that GM crops can pose a threat to the stability of a crop's genome and can have other negative impacts on related biodiversity and the environment.

¹² The document released is a collective effort prepared by indigenous communities and peasant farmers from Oaxaca, Puebla, Chihuahua, Veracruz and CECCAM - Centro de Estudios para el Cambio en el Campo Mexicano, CENAMI - Centro Nacional de Apoyo a Misiones Indígenas, Grupo ETC - Grupo de Acción sobre Erosión, Tecnología y Concentración, CASIFOP - Centro de Análisis Social, Información y Formación Popular, AJAGI - Asociación Jalisciense de Apoyo a Grupos Indígenas, UNOSJO Unión de Organizaciones de la Sierra Juárez de Oaxaca.

Recombination of transgenic bacteria in plants and animals and the potential to trigger allergies in those who consume GM crops are also grave concerns, as well as the possibility of contamination by crops modified to produce non-food substances, from plastics to pharmaceuticals. The presence of patented traits in farmers' maize is particularly worrying because biotech companies are aggressively prosecuting farmers for patent infringement. Under patent law in the US and many other industrialized countries, it is illegal for farmers to re-use patented seed, or to grow GM seed without a licensing agreement. Farmers in North America are being prosecuted for growing patented seeds on their land, even if they didn't buy the seeds, or benefit from them.

Contamination of farmers' varieties threatens many centers of crop diversity, particularly in the South. Although GM contamination has been known to exist for more than two years in Mexico, neither governments nor international institutions have taken action to stop GM contamination and to protect farmers' and indigenous peoples' livelihoods. Travelling transgenes are a global problem, not one confined to maize in Mexico. Among others, GM contamination of traditional varieties of cotton in Greece¹³, canola (rapeseed) in Canada¹⁴, soy in Italy¹⁵, and papaya in Hawaii¹⁵ have been reported¹⁶.

The international community and the Mexican government must take action immediately to stop and prevent further contamination of traditional varieties. No fewer than four government-sponsored studies have been undertaken in Mexico over the past two years to determine whether or not transgenes are present in native maize. Although none of the studies has yet been published, each study found varying levels of contamination in two or more states.

But acknowledgment of gene flow has not come with a clear plan of action to address contamination and to prevent it from continuing. Neither is there a plan to protect vital national and international collections of crop germplasm stored in gene banks in Mexico and elsewhere. Given the failure of action by the Mexican government, international plant breeding institutes and the multinational Gene Giants, the true creators and

custodians of maize decided to take matters into their own hands. Indigenous and peasant farmer communities in Mexico joined with civil society organizations, including ETC Group, to announce the results of genetic testing of maize grown by traditional farmers in 138 communities last October. The results show that contamination has spread to farmers' fields in nine states, including Chihuahua, Morelos, Durango, Estado de Mexico, Puebla, Oaxaca, San Luis Potosi, Tlaxcala and Veracruz. Of 2,000 maize plants tested, samples from 33 communities in nine Mexican states tested positive for contamination. In some cases as many as four GM traits, all patented by multinational Gene Giants, were found in a single plant. The organizations were especially alarmed to find traces of the insecticidal toxin (Cry9c), the engineered trait found in StarLink maize (formerly sold by Aventis CropScience). StarLink was never approved by the US government for human consumption because of concerns it could trigger allergic reactions. Illegal traces of StarLink were found in US food products in 2000. Following a massive recall of tainted food products in the US, Aventis withdrew StarLink from the market. Apparently, StarLink sought asylum in Mexico.

A coalition of indigenous communities, farmer and civil society organizations supported by many scientists have demanded that the Mexican government make public the results of all studies on GM contamination, stop all imports of transgenic maize, continue its moratorium on the cultivation of transgenic maize, and scrap the flawed "biosafety" bill crafted by biotech proponents, which is now under discussion in Congress.

Safe Contamination?

In a familiar response, many Mexican government officials and scientists acknowledged contamination, but insisted that it wasn't a problem.

At a conference held September 29-30 in Mexico City, academics, and government officials confirmed - and even Gene Giant corporations accepted - that there has been a "flow" (contamination) of GM traits into traditional maize varieties in at least two states. The conference,

¹³ Dina Kyriakidou, "Greece to further test, destroy any GM cotton crops," July 4, 2000, Reuters News Service. Available on the Internet: <http://www.planetark.org/dailynewsstory.cfm?newsid=7343>

¹⁴ See www.percyschmeiser.com

¹⁵ David Brough, "Italy police seize more Monsanto seed in raid," April 10, 2001, Reuters News Service. Available on the Internet: <http://www.mindfully.org/GE/GE2/Italy-Seizes-Monsanto.htm>

¹⁶ Greenpeace, "Genetically Engineered (GE) Papaya — Unknown Plant," June 2003. http://www.greenpeace.org/international_en/multimedia/download/1/29039_4/0/papaya_unknown_plant.pdf

¹⁷ Lourdes Rudino, "Aprueban experimentos con maiz transgénico - Tiene SAGARPA 'laboratorio natural' en Oaxaca," *El Financiero*, October 3, 2003

titled "Gene Flow: What Does It Mean for Biodiversity and Centers of Origin," was organized by the Pew Initiative on Food and Biotechnology (PIFB) and the U.S.-Mexico Foundation for Science (FUMEC). www.maizegeneflow.org.

At the conference, Klaus Amman, Director of the University of Bern's Botanical Garden (Switzerland), argued that there are no known environmental impacts of transgenic gene flow. Amman cited data from Novartis (one of the Gene Giants - now Syngenta) showing that under field conditions genetically engineered Bt maize posed minimal risk to Monarch butterflies in the United States. Jorge Soberón, the director of Mexico's National Commission on Biodiversity (CONABIO) pointed out that a comparison between field conditions in the US and those in mega-diverse Mexico may not be relevant. He noted that the USA has around 60 butterfly species whereas Mexico has more than 2,000. In the meeting, Soberón called for a strict application of the precautionary principle.

A representative of the Mexican Ministry of Agriculture, Dr. Victor Villalobos, recently described the GM contamination in Oaxaca as "a natural laboratory" to study the effects of gene flow, and he complacently urged that the moratorium on the planting of GM maize be lifted⁶.

"It is exasperating that many scientists refused to take action on gene flow for more than two years, insisting that they required stronger scientific evidence," said Silvia Ribeiro of ETC Group. "Now those same scientists admit gene flow but are claiming - in the total absence of scientific proof - that gene flow poses no threat to biodiversity or to people. Using Mexico and its people as guinea pigs is good science?"

Studies Concur

According to Ezequiel Ezcurra, the director of Mexico's National Institute of Ecology of the Secretariat of Environment and Natural Resources, four government-sponsored studies have been undertaken in the past two years to determine whether or not transgenes are present in maize in Mexico. Although none of the studies has yet been published, Ezcurra stated that each study found varying levels of contamination in two or more states:

- The National Institute of Ecology, an agency that operates under Mexico's Secretariat of Environment and Natural Resources, conducted an initial study that was released in September 2001.
- The National Institute of Ecology (INE) and the National Commission for the Knowledge

and Use of Biodiversity (CONABIO) jointly sponsored a study that was conducted by scientists at the National Autonomous University of Mexico (UNAM) and the Center for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV). The results of this study were announced in December 2002.

- The Secretariat of Agriculture, Livestock and Fisheries (SAGARPA) conducted a study that was commissioned by the Intersecretarial Commission for Biosafety and Genetically Modified Organisms (CIBIOGEM). The results of this study have not been made public.
- The National Institute for Agriculture and Forestry Research (INIFAP). The results have not been made public.

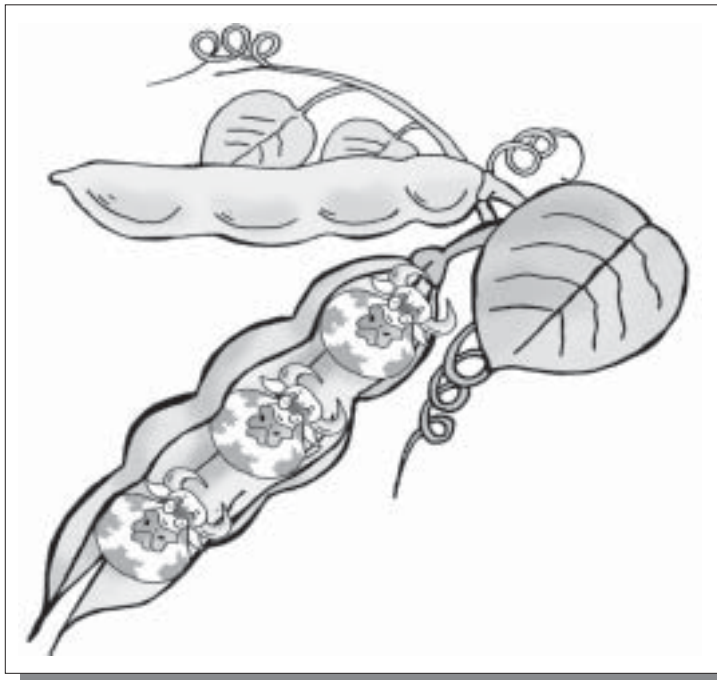
The studies corroborate the independent findings of two University of California (Berkeley) researchers who first reported their conclusions in *Nature* in September 2001. In an unprecedented move, the editor of *Nature* later disavowed the Berkeley scientists' peer-reviewed report in his own journal.

International Action Needed

In February 2002 La Via Campesina (the international organization of small farmers) and several hundred other civil society organizations worldwide joined forces to call upon the UN Food and Agriculture Organization (FAO) and CGIAR (Consultative Group on International Agricultural Research) to address the issue. Although FAO has expressed concern, it has only been in touch with CIMMYT (International Maize and Wheat Improvement Centre), the CGIAR institute in Mexico, which has global responsibility for maize breeding and for the world's most important maize gene bank. CGIAR has refused to take decisive action until they are convinced there is solid scientific proof of contamination.

However, CIMMYT did decide to halt its maize collection program in the region for fear that it could inadvertently introduce GM traits into its gene bank, and began to test for the presence of transgenes in its seed collection.

Representatives of Indigenous peoples and small farmers at the press conference last October described CIMMYT's failure to acknowledge and take action on the contamination of traditional maize as "deplorable," and urged that responsibility for the CIMMYT gene bank as well as other banks in the CGIAR network be surrendered to an intergovernmental body such as FAO, under conditions that will make it more responsive to the concerns of small farmers and indigenous people.



FAO and CGIAR need a specific strategy and procedure to ensure that gene bank accessions are protected from contamination and that the vitally important exchange of genetic resources between gene banks and breeders is not imperiled by concerns about contamination.

Because all GM traits are patented, the intellectual property implications of accidental contamination and dissemination should also be studied. Until the studies can be completed and evaluated by farmers' organizations and the international community, existing national moratoria on GM crops should remain in place. These issues should be discussed at the FAO Commission on Plant Genetic Resources for Food and Agriculture, the CBD COP-7 and Cartagena Protocol COP/MOP-1.

The group also condemned the Convention on Biological Diversity for its failure to effectively address GM contamination in centers of genetic diversity.

Next Steps: The long-term impacts of GM contamination on crop genetic diversity are not known. Neither governments nor international institutions have taken action to stop GM contamination and to protect farmers and indigenous peoples' livelihoods. Hundreds of civil society organizations, indigenous peoples and local communities are calling for a global moratorium on the shipment of GM seed or grain to countries or regions that form part of the center of genetic diversity for the species.

ETC Group believes that a number of issues urgently require further study. Most obviously, studies are needed to determine the impact of GM contamination on traditional maize varieties in Mexico, not only looking at the traits that are currently contaminating the crop but also consider future introductions that might include traits for industrial or pharmaceutical compounds. Most importantly, we need to understand not only how to prevent further contamination but whether or not it is possible to de-contaminate without further harming diversity.

Peasant farmers throughout the world, those who hold intimate knowledge of local farming systems and crop diversity, are the only ones capable of undertaking the task, but must have the support of the international community in this process. Globally, there is a pressing need to study more broadly the impacts of gene flow, which are already affecting other crops and regions. Most urgently,

Source: Action Group on Erosion, Technology and Concentration (ETC)

Compiled by: Chee Yoke Ling

2.5 SHORTER TAKES ON WORST PRACTICES

Terminator Technology - A Case Study in Negative Technology Transfer¹⁷

As a case study of the worst technology transfer practices, Terminator technology wins hands down. Why? Terminator technology - genetic seed sterilization - is being developed by the multinational seed and agrochemical industry as a biological mechanism to extinguish the right of farmers to save and re-plant seeds from their harvest. Over 1.4 billion people - primarily poor farmers and their families - depend on farm-saved seeds as their primary seed source.

Terminator technology has been condemned by civil society and some governments as an immoral application of genetic engineering. Terminator has been on the agenda of the Convention on Biological Diversity (CBD) for the past five years. CBD prefers to use the term "GURTs" - a reference to a technology that allows a plant's genetic traits to be

¹⁷ The Action Group on Erosion, Technology and Concentration (ETC), formerly RAFI, is an international civil society organization headquartered in Canada. The ETC group is also a member of the Community Biodiversity Development and Conservation Programme (CBDC). The CBDC is a collaborative experimental initiative involving civil society organizations and public research institutions in 14 countries. The CBDC is dedicated to the exploration of community-directed programmes to strengthen the conservation and enhancement of agricultural biodiversity.

switched on or off when a chemical is applied to the plant or seed. Varietal GURTs (V-GURTs or Terminator) refers to the most dangerous form of this technology — plants that have been genetically modified to render seeds sterile, thus preventing farmers from saving and re-using seeds.

The language of GURTs is confusing but the threat posed is crystal clear. If commercialized, Terminator is a global threat to food security, to poor farmers, and to biodiversity because it threatens to restrict farmer access to and use of genetic resources, especially in the South.

The US government and Delta & Pine Land, the world's largest cotton seed company, jointly hold three patents on Terminator technology. Syngenta, DuPont, BASF and Monsanto are among the other Gene Giants that have won patents on genetic seed sterilization. Some people mistakenly assume that the multinational seed industry has abandoned its quest to commercialize Terminator seeds due to public protest. Nothing could be further from the truth. A recent paper drafted by representatives of Monsanto and Delta & Pine Land for the International Seed Federation extols the virtues of Terminator for farmers everywhere:

“The International Seed Federation (ISF) believes that GURTs have the potential to benefit farmers and others in all size, economic and geographical areas...the potential effects of the GURTs may be beneficial to small farmers and quite positive for the environment and biodiversity.”¹⁸

In reality, genetically modified Terminator seeds are neither affordable nor relevant to the needs of resource-poor farmers; but that doesn't mean poor farmers won't get access to Terminator seeds if they are commercialized. A recent study on Terminator conducted by Wageningen University for the Food and Agriculture Organization finds that: “Serious seed security risk can be expected for those already seed insecure poor farmers who are not able to save their own seed for the next season. Risk of crop losses due to absent viability exist when poor farmers access the grain market for their seed (in many cases 20% of farmers), often at a late moment.” If the grain contains Terminator genes and the farmers unknowingly plant it as seed, it would not germinate. Similarly, farmers who depend on humanitarian food aid risk devastating crop loss if they unknowingly use food aid containing Terminator genes as seed.

The seed industry is now waging an aggressive “greenwashing” campaign to promote Terminator technology as a biosafety tool for containing unwanted gene flow from genetically modified plants. In other words, the Gene Giants tell us we must accept Terminator genes as a method to contain genetic pollution caused by their

genetically modified plants! This is twisted and dangerous logic. If Terminator is commercialized under the guise of biosafety, it will be incorporated in all genetically engineered seeds. Seed sterility is the ultimate monopoly-maker. With Terminator seeds, the Gene Giants will gain unlimited control over crop germplasm. And unlike patents, with Terminator there's no expiration date, no exemption for breeders, and no need for lawyers.

The time for expert panels and studies is over. COP7 must recommend that Terminator technology be banned as a clear threat to food sovereignty and agricultural biodiversity.

Written by Hope Shand, from ETC

The Corporate Trawling Seed Net Condoned by the Nuffield Council on Bioethics¹⁹

In December 2003, the Nuffield Council on Bioethics released the latest version of its report, “The use of genetically modified crops in developing countries”. It is full of useful facts. But it steers clear of uncomfortable conclusions that those facts add up to.

The Nuffield report suggests that there is a moral imperative for investment into GM crop research in developing countries. But the moral imperative is in fact the opposite. The policy of drawing of funds away from low-cost sustainable agriculture research, towards hi-tech, exclusive, expensive and unsafe technology is itself ethically questionable. There is a strong moral argument that the funding of GM technology in agriculture is harming the long-term sustainability of agriculture in the developing world. There are plausible and viable alternatives to GM, but they are being ignored and under funded as a result of the expensive demands of GM research and development.

I could also point out other uncomfortable conclusions to do with biosafety evaded by this “Council on Bioethics”. But I have to make my comments brief. I am reassured, however, by the fact that the Cartagena Protocol on Biosafety, albeit imperfect, has come into force. I find the Council's criticism of the precautionary principle, on which the Cartagena Protocol on Biosafety is based, unethical.

¹⁸ Harry B. Collins and Roger W. Krueger, “Potential Impact of GURTs on Smallholder Farmers, Indigenous & Local Communities and Farmers Rights: The Benefits of GURTs,” p. 1. Paper made available to the CBD's Ad Hoc Technical Expert Group on the Impact of GURTs on Smallholder Farmers, Indigenous People and Local Communities, February 19-21, 2003. The paper is presented as the official position paper of the International Seed Federation.

¹⁹ http://www.nuffieldbioethics.org/filelibrary/pdf/gm_crops_paper_final.pdf

For example, in Section 5.10 of its Chapter 5, it states, “we draw attention to our view that a highly restrictive interpretation of the precautionary approach is likely to ignore the possibility that, in some cases, the use of a GM crop variety may pose fewer risks than are implied by current practices or by plausible non-GM alternatives.”

Why go to GM if there are plausible non-GM alternatives? And I know that there are. How can an approach be precautionary if the issue of certainty of safety is befuddled in “may pose fewer risks than are implied...?” “If we are not sure that a GM variety will not “pose fewer risks”, is it not the essence of the precautionary approach that we become careful? I am puzzled by this attempt to fuzz such a complex issue, considering that the risk is making safety even more difficult to achieve.

Let us look at its Chapter 6, on “Control of and access to genetic modification technologies”. This chapter shows that, as exemplified by the “Golden Rice”, one GM variety can have “70 patents belonging to 32 different owners”. Make a developing country’s small holder farmers grow such a GM variety (even if it proves to be viable and safe), and you make each one of them pay 70 different royalties: What will be left for them? Make each of them negotiate with 32 foreign owners, all in English, German, Japanese etc: How will they unravel the tangle? I know that the Nuffield Council on Bioethics gives some examples of attempts by some organizations which try to obtain exemptions for small holder farmers from some patent owners. Is this a strong enough basis to recommend that the poor small holder farmers of Africa and the rest of the South be baited into planting GM crops through “genuinely additional resources be[ing] committed by governments, the European Commission and others, to fund a major expansion of GM-related research into tropical and sub-tropical staple foods?”

And how strange it is that this “Council on Bioethics” ignores the biological fact that, once a variety with 70 patented genes is planted by a single person, those genes will be passed on to the small holder farmers’ own non-GM varieties? And how conveniently it fails to mention the implication of Article 34 of the World Trade Organization’s Agreement on Trade-related Aspects of Intellectual Property (TRIPS) on this biological phenomenon? The surreal fact that Article 34 of TRIPS twists into this condition of globalization is that the small holder farmers then become patent infringers. What a perfect trawling net a GM variety then becomes to land all the farmers’ varieties, and thus the lives of the farmers, small holders or otherwise, under the control of the “32 patent owners”! If this is the way to help agriculture in developing countries, I do not know what wrong the slave raiding and trading

ships of the previous centuries did to help globalize poor rural Africans!

Sadly, the “Nuffield Council on Bioethics” is becoming a Council for putting an ethical garb on this new kind of slavery. Last September, in a meeting organized in London by the Intermediate Technology Development Group, I debated the issue with Professor Michael Lipton, a member of that Council. And yet there is no reference in Chapter 5 of the report to Article 34 of TRIPS. Why?

What I would have expected from a respectable Council on Bioethics is, first and foremost, a respect for the life of the poor humans of the South. I would have then, as a minimum, expected to see a statement emphasizing that, if genetic engineering is to help farmers in the South, it has to be freed from the patent knots that are making it an effective global slave trawling net.

Although the report does admit that patents on agriculture may not serve the interests of the developing world, it does not go so far as to condemn them. If the Nuffield Foundation truly considers itself to be a council on bioethics, then it should have a strong and clear position on this.

Written by Tewelde Berhan Gebre Egziabher
General Manager Environmental Protection Authority
Ethiopia

Arbitrary Export Controls

An “informal arrangement” (i.e. non-treaty agreement) between a club of rich countries that prevents transfer of certain “dual use” biotechnology and knowledge that is considered to be potentially security-related, export controls deny transfer of bioprocessing, containment, and manufacturing technologies that are potentially critical for sustained use and benefit-sharing — the technologies used, for example, to produce some pharmaceuticals, biological controls, and industrial enzymes. More than half the world’s population lives in the more than three dozen countries subject to the strictest controls. The controls are arbitrary - countries can be added to the list without any explanation. Countries denied technology have no right to an international hearing or appeal. Export controls might slow the spread of some technology that would be dangerous in the wrong hands; but they can also be used to defend product markets and to prevent commercial competition. In response to this unfair and capricious arrangement, developing countries have proposed that the Australia Group be disbanded and that it be replaced by a fairer and more transparent United Nations agreement.

Written by: Edward Hammond
<http://www.sunshine-project.org/>

PATENT SECURITY

Patents are very problematic for technology transfer; but many patentable inventions, including in the biological sciences, are controlled even more tightly. These are the patent applications that are deemed so sensitive that they are denied and then sealed under a “secrecy order” that imposes criminal penalties if the information is divulged. In the US, there are currently almost 5,000 secret patent applications in the nuclear, chemical, aeronautical, cryptographic and, increasingly, biological sciences. While many of the secret technologies are primarily military, the application of patent secrecy to biology hides knowledge and stops transfer of technologies that have peaceful uses relevant to the CBD. And, at the same time, many of the developed countries that use patent secrecy also argue that developing countries must accept life patenting - even though the rich countries themselves exclude many technologies from patentability based on “national security” concerns. Because almost the entire patent secrecy system is concealed by classification, the true extent of its impact on technology transfer is unknown to the public.

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2.6 CONCLUSIONS AND RECOMMENDATIONS

The case studies above illustrate some key aspects of technology transfer and cooperation. They reaffirm the multi-faceted nature of technology as a complex package of techniques that can contribute to sustainable development only when the environmental, human health and socio-economic dimensions are fully integrated within an inter-generational context. They also alert us to the pitfalls when technology decisions are dominated by giant commercial interests, as seen in the GURTS and Mexican maize contamination cases. The latter is also a powerful reminder of the deep cultural and ethical roots of biodiversity: in addition to potential ecological and health hazards, the release of genetically engineered crops generates social and cultural tumult.

The discussion on patents shows the expansion of economic tools and measures legitimised by rules such as TRIPS that are directly in conflict with the spirit and objectives of the CBD. The exercise of export controls reinforces the double standards of countries with technology advantage so that where technologies are indeed “biodiversity- and people-friendly”, they may be kept out of the reach of the majority of the world’s people. At the same time, best practices such as those presented here do not

receive due support to be replicated or mainstreamed through technology transfer and cooperation.

Thus, in establishing an Ad Hoc Expert Group on Technology Transfer and Cooperation as proposed by SBSTTA-9, COP 7 should adopt a work programme on technology transfer and cooperation that:

1. Protects the rights, knowledge and technological innovations of local and traditional communities as human rights;
2. Includes, in addition to product development, technologies that are relevant to monitoring, conservation and planning;
3. Ensures that intellectual property rights regimes support and do not undermine the objectives of the CBD by requiring that further studies cover the provisions of various international (especially the WTO TRIPS Agreement), regional and bilateral agreements, which may have the effect of hindering transfer of technology to developing countries and provide recommendations to mitigate the negative effects of these provisions. The scope of the studies should also include proposals for amending existing provisions to harmonise them with the principles and objectives of the CBD;
4. Promotes and strengthens international cooperation in public research and technology development in developing countries with full and effective public participation in determining the direction and priorities of research;
5. Develops and implements a comprehensive and holistic framework, methodologies and specific capacity building activities for technology assessment (including the assessment of the impact on biological diversity, environmental and human safety, as well as socio-economic impacts) and decision-making so that the development and transfer of technology is consistent with the CBD objectives (conservation, sustainable use and equity) and the Precautionary Principle as embodied in Preambular paragraph 9 of the CBD;
6. Examines the restrictive practices adopted by transnational corporations (TNCs) in the area of transfer of technology and recommend ways to prevent TNCs from taking recourse to such restrictive practices. Simultaneously, recommendations could be made as to the methods through which TNCs could be made effectively to transfer technology that supports the objectives of the CBD.

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