Mapping indigenous territories

Part A) Overview and Synthesis of Project Cluster

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CONTENTS

The following report concerns a review of a cluster of projects funded by IUCN NL's Tropical Rainforest Programme (TRP) that involved mapping activities largely initiated and controlled by indigenous communities. These communities were practicing -until recently- sustainable livelihoods in habitats that remain largely intact, with the intent of conserving both their livelihood and habitat. The review aims to assess the actual and potential contributions of these mapping projects to the goals of biodiversity conservation and poverty reduction, and determine the general effectiveness of small grant support to this particular kind of projects.

This report consists of two parts. Volume A contains a summary of findings, conclusions and recommendations, an introduction to the subject and tables with key data on all projects in the cluster. It concludes with an analysis and synthesis of the project cluster. Volume B contains a more detailed analysis of each project, including its main strengths, weaknesses and lessons learned.

Main findings

- Most community-mapping projects have achieved – admittedly often with project extensions – substantive results: training workshops held; community-mapping conducted; boundary or occupation and land use maps produced and, often, deployed in legal procedures for acquiring land rights.

- None of the projects under analysis has as yet achieved legal recognition of collective land rights for the communities involved – in two cases formal tenure was secured prior to the project. Tenure negotiations, even when based on community maps, are notoriously slow moving. This points to the crucial importance of policy influencing.

- Community mapping has often made important contributions to creating an enabling environment for community-based conservation in terms of increased human/social capital and empowerment; it also resulted in reinforced cultural identities, more cooperative relations, and increased potential for resolving conflict.

- Projects reduced poverty to the degree that they contributed to secure community access to natural resources. Future projects may need to involve (more) livelihood components with a view to income generation, especially where the cause for indigenous land rights is to be linked up with the creation of protected areas.

- Generally, projects tend to have a one-sided focus on mapping for tenure as the preferred strategy to fend off external threats to indigenous lands and biodiversity; it is recommended that especially follow-up projects dedicate more attention to mapping as a context and tool for management planning and institution-building.

- Project sustainability is determined by the extent to which communities – independently or with the continued support of conservation organizations – are in the position to build and capitalize on the enabling conditions that were achieved in the process of the initial community mapping experience.

- It is recommended that follow-up projects pay more attention to developing local stewardship agendas and expanding local competence in on-the-ground conservation that is based on indigenous traditional knowledge and recovered and/or strengthened customary institutions for land and resource allocation and management.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Focus

1.1   There has often been a one-sided focus on mapping for tenure (indigenous land rights and ownership) against external threats; TRP-funded mapping projects so far have paid only scant attention to developing local stewardship agendas and expanding local competence in on-the-ground conservation based on traditional knowledge and strengthened customary institutions.

Situation and stakeholder analysis

1.2   The pre-project situation analysis was often poor; proposals lacked structured information on institutional context, which is elemental for assessing opportunities and chances of long-term success. There was a lack of substantive information on the socio-cultural situation of targeted communities, such as e.g. state of customary resource management institutions. Some projects failed to involve relevant government agencies, where this could have increased the legitimacy of the project and the IPO (Indigenous People's Organization).

Project design and management

1.3   Project objectives were often unrealistically formulated, due to: insufficient comprehension of community dynamics, insufficient time allocated for training, problems related to difficult terrain & technical problems. There was often little insight in the working procedure of mapping activities, and little coherence and distinction between objectives, activities, expected results and follow-up. Except for the budget/coverage relation, project achievability is difficult to estimate beforehand due to many preconditions to be met. It is for this reason that partner organizations positively consider IUCN NL for its lenient funding policy.

1.4   Mapping projects seem to have better chances of success when partner organizations are more closely related to the targeted communities, such as IPOs (Indigenous Peoples Organizations) with adequate project management capacity.

Project duration

1.5   A project duration of less than 1 year is too short for achieving even the most immediate objectives, especially in the case of projects involving a first-time demarcation of a territory.

Ecological impacts

1.6   None of the projects has brought a direct positive change in ecosystems and biodiversity – this is too much to expect. However, many have contributed to creating an enabling environment for community-based conservation (CBC).

Impacts on poverty and empowerment

1.7   Most projects had an impact on poverty reduction in that they (at least potentially) contributed to secure access to natural resources or the ability of communities to defend this security (monitor, patrol and bring formal complaints against destructive resource use). Projects also enabled communities to challenge uncompensated, externally imposed resource use restrictions. Few projects included livelihood components with a view to income generation.

1.8   Mapping projects can be a first step in recognizing land rights and have the potential for constituting a context for building effective community-based institutions for natural resource use and management. Tenure has not been acquired in any of the cases. Maps have been used to start up slow-moving tenure negotiations and communities keep waiting for their outcome while in the meantime their recently acquired skills are left unused.

1.9   In case of broad community participation, the mapping activity can function as a tool for raising awareness on environmental issues and for mobilizing communities to defend their lands and resource base.

Enabling environment

1.10   Some projects achieved territorial management plans or gains in influencing national policies and legislation favourable to indigenous (land and resource) rights, thus contributing to an enabling environment for community-based conservation. Regarding the social and institutional dimensions (human/social capital & empowerment) projects generally failed to develop measurable indicators of success, and of extent of capacity development & transfer of knowledge due to a lack of insight in methods and procedures.

1.11   Many mapping projects have made considerable contributions to enabling conditions for biodiversity conservation and poverty alleviation, in the sense of:
-       Raised awareness on environmental issues and links with their livelihoods.
-       Empowerment and increased self-confidence.
-       Reinforced cultural identities and connections to place.
-       More productive relations with outside agencies.
-       Potentially resolving conflict and territorial issues.

Continuity and sustainability

1.12   Community mapping has much more potential than only for acquiring tenure, but many partner organizations are uncertain of how to proceed into next phases.

1.13   Project sustainability is determined by the extent to which communities are in the position to build and capitalize on enabling conditions achieved during the initial mapping experience. Strengthening these conditions can be essential to maintain the momentum since securing tenure rights, with mapping as a first step, is often a lengthy process interrupted by long intervals due to bureaucratic procedures.

1.14   Much of the expertise that was developed in the early TRP-funded mapping projects was used in later projects, especially if these took place in the same region and were executed by indigenous communities and organizations that received field support from the same NGOs.

RECOMMENDATIONS

Internal vs external pressures

2.1   Most projects emphasize destructive resource uses by outside actors; they seem to neglect that resource management practices of communities are often under increasing pressure from change (demographic growth, changing settlement, breakdown of cultural values), leading to internal pressures. This issue warrants more attention.

Build environmental awareness

2.2   Projects should not uncritically assume environmental awareness of indigenous communities. To enhance compatibility between the indigenous (land rights) agenda and the conservation agenda, mapping projects should from the start explicitly draw the communities' attention to environmental concerns and biodiversity management, otherwise community mapping can turn itself against the conservation agenda.

Situation analysis

2.3   Future mapping projects should be based on a better situation analysis, especially in the sense of providing information on the wider institutional (i.e. politico-legal) context in which the project takes place, such as recent developments in national policy or legislation with respect to indigenous land rights and natural resource management (exploitation) and conservation.

Project design and management

2.4   Project objectives should be formulated more realistically and more attention is to be paid to the coherence between objectives, activities, expected results and follow-up. Proposals should give more insight into the working procedure of the mapping activity, i.e. the degree of community involvement in data gathering or whether field observations are combined with group discussions and interviews.

2.5   It is recommended to fund projects whereby an IPO functions as go-between between conservation organization/mapping support group (NGO) and communities, or whereby an IPO is fully responsible for project execution, provided it has sufficient capacity in financial project administration and the management of funds.

2.6   If legislation on indigenous land rights is poorly developed, then it is more effective to invest in policy influencing, institutional strengthening and awareness raising than in mapping for land rights.

Broadening the scope of mapping projects

2.7   In view of the sustainability of project results for community-based conservation (CBC), it is recommended that especially follow-up projects dedicate more attention to mapping for management planning and as a context for institution-building, i.e. that they make a shift in strategy from a rights-based approach to a stewardship approach.

2.8   Projects should contribute more to sustaining and expanding indigenous customary institutions to help communities deal more effectively with claimants to their resources, as well as enable them to deliberate and reach decisions among themselves on the allocation of the environmental assets that attract such outside attention.

2.9   Future projects need to involve more livelihood components for income generation, both to provide an incentive for community-based conservation and to prevent or reduce pressures on natural resources. This is especially so where the cause for indigenous land rights is to be positively linked up with the creation of protected areas.

Success factors

2.10   Because capacity development, democratic decision-making and institution building are the most important factors for success in creating an enabling environment for CBC, they deserve more thorough assessment in project evaluations. This calls for the development of better, unambiguous and measurable indicators of success.

Easing tensions

2.11   In or nearby protected areas (PAs), community mapping can turn itself against the conservation agenda due to insufficient or failing participatory mechanisms, especially in the preparatory stages of the conservation initiative. There is a potential role for TRP-funded mapping projects in easing tensions between communities and PAs.

Usefulness of rights support and policy influencing projects

2.12   Projects for rights support and policy influence, typically ongoing and long-term processes, are difficult to fit into the restricted format of small grants projects. These projects however determine chances of success of mapping projects and CBC efforts, and IUCN NL support to these projects should therefore be continued.

1. Introduction

The following report concerns a review of a cluster of TRP-funded projects that involve mapping activities that are initiated and controlled by indigenous communities, practicing (until-recently) sustainable livelihoods in habitats that remain largely intact, with the intent of conserving both their livelihood and habitat. The review aims to assess the actual and potential contributions of these mapping projects to the goals of biodiversity conservation and poverty reduction, and determine the general effectiveness of small grant support to this particular kind of projects.

1.1 Indigenous mapping: definition, history and applications

Indigenous mapping can be defined as "mapping done by and for indigenous peoples to achieve political goals", however with the general purpose to assist indigenous peoples "to secure tenure, manage natural resources and strengthen [their] cultures" (Chapin, Lamb et al. 2005: 619-20).

Although cartographic representation was not new to indigenous societies, since the European conquest most indigenous spatial knowledge has gone unrecorded. All this time, communities maintained cognitive maps whereby place names and spatial orientations were communicated verbally. With the rise of indigenous movements, indigenous leaders learned that maps were symbols of state identity, and not their own, and were being used by outsiders to formalize control over their lands and resources. Since then, local indigenous communities began to develop an interest for making/using maps for their own purposes (Herlihy & Knapp 2003).

In the 1990s, in Latin America and parts of South East Asia, indigenous peoples working with geographers and anthropologists began 'remapping' their populations and lands using participatory research techniques. In the mid and late 1990s, when computerized mapping technology (GPS, GIS) became more widely available, communities were for the first time able to make more technical, geographically accurate maps that rival those of official cartography (Poole 1995 & 2005). Gradually, several methodologies developed that recognize the cognitive spatial and environmental knowledge of local peoples and transforms this into more conventional forms so as to empower communities in the representation of their lands in relations with outsiders (Herlihy & Knapp 2003: 306). Terms that have been commonly used for these activities and processes are: "participatory mapping", "community mapping", "ethno-cartography", "counter mapping", and "self-demarcation" (Chapin, Lamb et al. 2005: 623).

Initially, the main purpose of mapping of this sort has been to assist indigenous peoples to assert rights to their lands in the face of external agencies, industrial resource interests of settlers. Maps were used for filing lawsuits seeking recognition of indigenous land and resource rights based upon ancestral occupation and use. More recently, it has increasingly become clear that indigenous mapping can also fulfill other functions, such as strengthening local organizations, the transmission of traditional knowledge, and the development of land use planning tools and the promotion of indigenous stewardship (Chapin & Threlkeld 2001; Poole 2005). These more practical applications have raised the interest of conservation organizations, which have linked up with the mapping of indigenous lands for the purpose of creating protected area borders and management plans (e.g. Eghenter 2000; Chapin & Threlkeld 2001; Rambaldi, Bugna et al. 2002).

1.2 IUCN and indigenous mapping

Environmental organizations like IUCN now acknowledge that indigenous (and traditional) peoples have played an important role in the conservation and sustainable use of biological diversity. As opposed to former times, when local communities were commonly excluded from access to and use of natural resources in protected areas, frequently resulting in persistent conflicts, today it is widely recognized that "the participation of indigenous peoples in conservation initiatives in their lands or territories, either through joint activities, or exclusively by themselves, is a necessary condition to consolidate and advance towards the achievement of the conservation and management of biodiversity" (WCC Resolution 1.49).

Indigenous peoples and their organizations have repeatedly declared their intention to perpetuate their traditions of sustainable resource use and management or – in cases where these have come under pressure or have been (partially) lost – implement actions to recover and restore them. While sustained efforts to reinstate sustainability of indigenous environmental relations – possibly with needed outside assistance – are often necessary, many indigenous communities have expressed their willingness to support and actively participate in local environmental management and protection. Whatever the particular situation may be, community-based organizations have also incessantly pointed out that "recognition of land rights is an essential precondition for indigenous peoples to assume such roles, which are contingent upon secure tenure and access to resources" (Poole 1995: 21; compare with Fisher, Maginnis et al. 2005).

Conservationists have not been insensitive to this argument. In 1996, during the World Conservation Congress in Montreal, IUCN was early in calling for "recognition of the rights of indigenous peoples over their lands or territories and natural resources" (WCC Resolution 1.49).[1] Apart from considerations regarding the value of traditional knowledge and collaborative management, as well as human rights and social justice, this support for indigenous land rights also followed from the appreciation of the commonality of objectives between the goal of biodiversity conservation and the need of indigenous peoples – in view of safeguarding their livelihoods – to protect their lands, territories and resources from external threats.

So, arising from the realization that "the more [indigenous] people live in security and have their rights respected, the more they will be willing to engage in biodiversity conservation and care for their lands and resources" (IUCN 2003: 7), since the mid-1990s the Netherlands Committee for IUCN, through its Small Grants for Tropical Rainforests Programme (TRP), has funded a number of community-based projects that concerned the participatory mapping of indigenous lands as part of a strategy "to encourage the conservation of the tropical rainforest through balanced and sustainable land and forest use, with a view to halting the current rapid process of deforestation along with other environmental damage and degradation" (www.iucn.nl).

1.3 The selection of projects and methodology for their review

The cluster reviewed is made up of 15 TRP-funded projects in which the participatory mapping of indigenous lands was the main activity or in which mapping constitutes an important (secondary) project component. These 15 projects were selected from a longer list of projects (assembled by MacKinven), which also included projects with smaller mapping components. (This more inclusive list of projects was not exhaustive however.)

Within the selected cluster, 10 projects were typical field projects of which 7 involved the creation of a map of a specific indigenous territory; in 3 projects mapping was used as a tool for land use planning. The other 5 projects involved other activities directly related to mapping, i.e. rights support, policy influence, workshops, institution building and database development. Projects had initial durations of one year or less and involved budgets ranging from 80-5 thousand EUR. The cluster appeared strongly regionally focused: 9 projects were conducted in South America, of which 7 on the Guyana Shield, and 4 projects took place in Southeast Asia. One project had global coverage, entailing a worldwide inventory of mapping projects.

The cluster deliberately covers projects that together span the entire history of IUCN NL with indigenous mapping, thus enabling the reviewer to appreciate progressive changes in approach to mapping projects and their funding.

With the central question in mind, projects have been scrutinised on the basis of a checklist (slightly moderated) that was broadly divided in the following categories/questions:

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[1] Through WCC Resolution 1.49 IUCN moreover calls on its members to "a) facilitate effective participation of indigenous peoples in their programmes; b) consider the adoption and implementation of the objectives of ILO Convention No 169 and the Convention on Biological Diversity (CBD), and comply with the spirit of the draft UN Declaration on the Rights of Indigenous Peoples, as well as adopt policies, programmes and laws which implement Chapter 26 of Agenda 21; c) promote and support the objectives of the International Decade of the World's Indigenous People" (IUCN 2003: 3-4).

- Problem definition & approach/goal
- Project planning & achievability
- Project alignment, scaling up & linking
- Project design & management
- Project achievements and measurability
- Contribution to biodiversity conservation
- Contribution to poverty alleviation
- Project sustainability & follow up

Basic project data and summary of most important findings has been taken up in tables.

Information sources for the review of projects consisted mainly of project dossiers retrieved from the IUCN NL archive and from the 'F-List' on the organization's mainframe computer. Documents studies principally included proposals and progress and final technical reports (and to a much lesser degree financial reports). After an initial assessment, follow-up on particular cases or project processes was made through personal contacts with people from organizations that had/are involved with the execution of the projects (in particular Fergus MacKay of WRM/Forest Peoples Programme with reference to projects on the Guyana Shield). Incidentally, the picture was completed with published and 'grey' documents that were found on the Internet.

After completing the individual project analysis and with a view to bringing the synthesis closer to the subject of community-based conservation, the final reviewer (JvdS) compared the analysed cluster of (15) projects with a complementary quick scan of 8 other projects with mapping applications and follow-up activities for land use planning and stewardship development.

1.4 Project summary tables

The tables on the next pages present a summary of the project cluster which was studied in detail. Table 1 contains key administrative data, and Tables 2a and 2b summarize a number of key features for each project of the cluster.

Besides the projects detailed in the tables, the following other mapping-related projects were quick-scanned:

6AS95A -	YBA (Indonesia) -	Sustainable non-timber forest products (NTFP)
6AS110A -	BIND (Philippines) -	Community property rights & forest conservation through NTFP development
6AS117A -	Keystone F. (India) -	Conservation & development with indigenous honey collectors
6LA128A -	FGA/Acaipi (Colombia) -	Fortelacimiento & desarrollo del Plan de Vida de la asociación de autoridades de Acaipi
6LA132A -	Kuyujani (Colombia) -	Effective recognition of the territorial rights of the Ye'kwana and Sanema
6LA159A -	NYTUA (Ecuador) -	Awacachi Corridor, protection & management
6LA181A -	Serjali (Peru) -	Land tenure & indigenous territorial security
6LA211A -	APA (Guyana) -	Controlling the environmental & social impact of mining on Amerindian lands

PROJECT SUMMARY TABLE 1

code	NGO/IPO	Country	Project Title	Duration	Budget	Area Size	Comm. Target	Add. Funding
AZ 3013	SKO	Malaysia (Sarawak)	Keruan project for the development of Penan communities	Oct - Dec 1995 (extd. Oct 96)	NLG 11,605	unknown	5 communities (16 originally planned)	unknown
(AZ 3039) 1AS54A	BRIMAS	Malaysia (Sarawak)	Mapping & demarcation of native customary lands in Sarawak	Dec 1997 – Dec 98	NLG 103,415	77,426 ha	9 villages (Dayak; 1,400 people)	yes (not from IUCN)
6AS102A	CELCOR	Papua New Guinea (PNG)	Mapping for the future: securing community-based property rights on the Managalas Plateau	Jan 2002 – Jan 03 (extd Aug 03)	EUR 31,317	300,000 ha	10 sub-clans (10,000 people)	yes, under 6AS124A (same NGO, other relevant project)
6AS153A	PAFID	Philippines	Mapping network workshop	Oct - Nov 2004 (closed in 06)	EUR 12,400	NA	representatives of support groups/communities of 6 countries	unknown
LA 5036	WRM	Guyana	Upper Mazaruni land demarcation & mapping project	Nov 1995 – Nov 96	NLG 92.535	600,000 ha	2 communities* (7 Akawaio & Arekuna villages); 4 people trained	yes, under 6LA161A & 6LA211A
LA 5064	CI-Suriname	Suriname	Advancing conservation in Suriname through training in the use of geographical information	Jul 1997 - Jul 98 (closed in 2000)	NLG 141,000	NA	2 communities (10 originally planned)	no
LA 5084	WRM & Kuyujani	Venezuela	Territorial mapping of Indian land claim in the Upper Caura	Oct 1997 – Oct 98	NLG 150,000 (total USD 151,600)	34,200 ha (part of larger indigenous territory)	2 communities* (Ye'kuana & Sanema); 20 people trained	yes (including from NC-IUCN under 6LA132A; approx. EUR 60,000)
LA 5106	FPP	Guyana, Suriname, French Guyana	Three Guyana's Program	Dec 1997 – Jan 1999	NLG 60,000	unknown (dossier missing)	see under 6LA205A	yes, under 6LA205A
(LA 5168) 1LA22A	CRIMA & FGA	Colombia	Apoyo al proceso de ordenamiento territorial en la región del Medio Río Caqueta	Sep 1999 - Sep. 2000 (extd Mar 01)	NLG 53,000	part of 5,800,000 ha recognized territory	21 communities (3,000 people) of 6 different indigenous ethnic groups	unknown
1LA10A/ 1LA55A	Fundecol, Altropico	Ecuador	[10A] Strengthening environmental information capacities of the Awa federation [55A)] Aerial examination of the effects of industrial shrimp farming on mangroves & people in Esmeraldas	Mar 2000 – May 01	NLG 81,560 + 12,500 (NLG 94,060)	101,000 ha	3 communities* (Awa & Chachi indigenous forest communities & (maroon) fisher communities	yes, under 6LA158A & 6LA159A (other NGOs, same project area/communities)
6LA161A	APA	Guyana	Amerindian lands in Guyana, protection from mining	Aug - Nov 2002 (extd Dec 02)	EUR 11,456	unknown	1 community* (Arau; 80 people); 3 people trained	yes, under 6LA211A
6LA172A	VIDS	Suriname	Rainforest conservation, indigenous rights & mapping	Oct 2003 – Jun 04 (3x extd Feb 2005)	EUR 38,700	45 km Corantijn river: approx. 100,000 ha	3 villages (Arawak, Kalin'a & Warao); 1,400 people; 3 people trained	yes (not from IUCN)
6LA205A	FPP	Guyana, Suriname	Sustained support for indigenous & tribal peoples	Jan 2005 – Feb 06	EUR 60,310	NA	indigenous & tribal peoples (approx. 180,000 people in 230 communities)	yes (not from IUCN)
L63A	LEO	Global	Mapping exchange	Aug 2003 – Mar 2005	EUR 29,000	NA	Community Mapping Centers (regions: SE Asia & Pacific + Guyana Sh.)	NA

PROJECT SUMMARY TABLE 2A

project	biodiversity threat	legal-political context	mapping /planning	NGO/IPO/CBO	livelihood component	alignment	upscaling/linking	other funding
SKO (AZ 3013) Malaysia	encroaching timber extraction (logging) & plantation operations	WEAK - Sarawak Land Code (Section 5.3); Land Surveyors Ordinance 2001	mapping - documenting boundaries/extent of native customary lands	community training & assistance in mapping provided by NGO	none (indirect poverty alleviation assumed)	building on training by PACOS (Partners of Community Organizations)	replicated in Upper Baram Penan communities (Sarawak)	Hivos (other activities)
BRIMAS (1AS54A) Malaysia	encroaching timber extraction (logging) & plantation operations	WEAK - Sarawak Land Code 1958 (Sec. 5.3); Land Surveyors Ordinance 2001	mapping/planning - documenting boundaries & incipient planning	community training & assistance in mapping provided by NGO	yes (?); inventory natural livelihood resources	no information provided	replicated in 40 Dayak community territories (Sarawak) > 6AS153A	no information provided
CELCOR (6AS102A) Papua New Guinea	proposals for timber extraction (logging), oil palm & mining development	MODERATE - alienable customary ownership; Conservation Area Act 1978	mapping - delineate perimeter of lands owned under customary law	NGO provides training to "mapping team", including community members	none (indirect poverty alleviation assumed)	embedded in PwM "Managalas Plateau Conservation Area Project"	plans for mapping other conservation areas such as Mt Bosavi region (PNG)	various - e.g. Macarthur Foundation, Rainforest Foundation, ICON
PAFID (6AS153A) Philippines	NA	STRONG (Philippines), moderate (PNG) to WEAK (Thailand)	attention for mapping as well as land use planning	NGO enables Philippine network to exchange with regional IPOs/SGs	NA	building on training experience by NGO (PAFID)	aims to expand Philippine network to include IPOs/SGs in 6 countries	various - e.g. Biodiversity Support Program (BSP), UNDP-SGP, Cordaid
WRM (LA 5036) Guyana	encroaching (small-scale) illegal mining activities	WEAK - 1976 Amerindian Act (discriminatory, provides little protection)	mapping - demarcating boundaries of Amerindian lands (land claim)	community training & assistance in mapping provided by NGO	none (indirect poverty alleviation assumed)	building on mapping experience from elsewhere by Poole (LEO)	replicated in Wai Wai-Wapisiana, Central Rupununi > 6LA211A	FPP, Rainforest Foundation
CI (LA 5064) Suriname	encroaching timber extraction (logging), (illegal) gold mining	NONEXISTENT - no legal recognition of indigenous (land) rights whatsoever	planning - GIS training for land use planning & biodiversity conservation	NGO provides training to community representatives (no meaningful participation)	none whatsoever	no alignment (stand-alone project)	no information provided	no information provided
WRM & Kuyujani (LA 5084) Venezuela	planned hydropower project; encroaching timber extraction (logging) & mining	MODERATE - recognition land rights (implementation pending); ILO 169 ratified	mapping/planning - documenting boundaries & incipient planning	community training & assistance in mapping to IPO/CBOs provided by NGO	yes (?); inventory natural livelihood resources	building on mapping experience from LA 5036	MINENV & PA agency contracted IPO/CBOs as park guards > 6LA132A	UNEG (Experimental University of Guyana)
FPP (LA 5106) 3 Guyanas	encroaching (illegal) mining, infrastructure & timber extraction (logging)	MODERATE (Guyana) to NONEXISTENT (Suriname)	mapping/planning - but mainly rights support & capacity-building IPOs	community training & legal assistance provided to IPOs provided by NGO	none (indirect poverty alleviation assumed)	in part building on experiences from LA 5036 & LA 5084	influencing national legislation; strengthening national IPOs > 6LA205A	Novib, SIDA, Bilance (Cordaid), W. Alton Jones Foundation

CRIMA & FGA (1LA22A) Colombia	encroaching illegal mining, fishing & colonization	STRONG - active recognition land rights & autonomy; ILO 169 ratified	mapping/planning - mapping as part of territorial planning	community meetings & technical assistance to CBOs facilitated by IPO/NGO	yes; livelihood strategy development as part of territorial planning	building on previous (active) recognition of land rights & autonomy	used for obtaining official (technical) approval from environmental authority	Tropenbos-Colombia
Fundecol & Altropico (1LA10A/55A Ecuador	encroaching palm oil plantations & shrimp fishing industry; pressure from forestry	MODERATE - recognition land rights (implementation pending); ILO 169 ratified	mapping/planning - mapping explicitly to be used for territorial planning	execution of aerial photography & mapping exercises provided by NGOs at request & to benefit of IPO/CBOs	yes (1LA55A); planned restoration of mangrove ecosystem & livelihood resources (explicit attention for defense of community use rights)	[10A] building on previous activities by IPO & collaboration with WWF-US; [55A] embedded in "Reserva Ecologica de Manglares Cayapas"	[10A] activity extended to other indigenous territory (Chachi); [55A] used for lobbying government for more responsible policies > 6LA158A & 6LA159A	FEPP, LEO, Fauna & Flora International (FFI), NC-IUCN Small Grants for the Purchase of Nature (SPN)
APA (6LA161A) Guyana	encroaching mining operations, small-scale illegal mining activities	WEAK - 1976 Amerindian Act (discriminatory, provides little protection)	mapping - documenting occupation & land use/ demarcating boundaries	training community members & verification facilitated by IPO	yes; explicit attention for resource mapping, including livelihood activities	building on experiences from LA 5036	used for developing mining protocol, to apply elsewhere > 6LA225A	FPP, Rainforest Foundation
VIDS (6LA172A) Suriname	encroaching mining concessions; planned hydropower project	NONEXISTENT - no legal recognition of indigenous (land) rights whatsoever	mapping - documenting traditional occupation & land use	NGO provides training to "mapping team", including community members	yes; explicit attention for resource mapping, including livelihood activities	building on mapping experience elsewhere & legal study by FPP	used for preparing legal case; influencing national legislation (land rights)	NCIV, FPP, LEO, Rainforest Foundation, Novib
FPP (6LA205A) Guyana /Suriname	encroaching (illegal) mining, infrastructure & timber extraction	MODERATE (Guyana) - Revised Amerindian Act - & NONEXISTENT (Suriname)	mapping/planning - but mainly rights support & capacity-building IPOs	community training & legal assistance provided to IPOs provided by NGO	none (indirect poverty alleviation assumed)	aligned with LA 5106 & building on experiences from LA 5036 & LA 5084	influencing national legislation; strengthening national IPOs > 6LA225A	various - e.g. W. Alton Jones Foundation, GEF
LEO (6GL63A) Global	NA	NA	attention for mapping as well as land use planning (indigenous stewardship)	NA	NA	aligned with 6AS153A	database indigenous mapping projects; used for deciding on target regions for network (Guyana Shield)	no other funding

PROJECT SUMMARY TABLE 2B

project	project design & management	performance & substantive results	contacts & reporting	impact biodiversity	link conservation & socio-economic issues	impact poverty reduction	project sustainability & lessons learnt	Show-case?
SKO (AZ 3013) Malaysia	gross underestimation budget & time (pioneer project); overall lack experience of NGO	mapping partly completed; questionable quality (no GPS); poor measurability	no report on longer term results (NGO not obligated to do so)	NEUTRAL - increased community awareness; negative policy impact	OK - secure tenure precondition for community-based conservation (CBNRM); no specific target	SOME EXTENT - increased human/social capital	UNCERTAIN - no follow-up, negative policy; [lesson] involving government agencies imperative	
BRIMAS (1AS54A) Malaysia	clear problem analysis; good preparatory work; lack involvement government agencies	mapping/maps completed & deployed in court cases; extra - partial land use mapping	considerable delay in reporting; no report on longer term results (NGO not obligated to do so)	NEUTRAL - intracommunity dispute resolution; increased community awareness; negative policy impact	OK - secure tenure precondition for community-based conservation (CBNRM); no specific target	SOME EXTENT - increased human/social capital	UNCERTAIN - no follow-up, negative policy; [lesson] involving government agencies imperative	
CELCOR (6AS102A) Papua New Guinea	deficient proposal (no clear activities & outputs); gross underestimation budget & time	planned outputs (training/map) not achieved, even after extension; poor measurability	reporting does not match proposal (addressed other - trouble-shooting - activities instead of planned outputs)	ENABLING - intracommunity dispute resolution; synergy land rights & future PA	OK - secure tenure for integrating conservation & development (collaborative management PA)	SOME EXTENT - increased social capital; enhanced public participation	MODERATE - embedded project, customary ownership; [lesson] better pre-planning & preparatory work needed	
PAFID (6AS153A) Philippines	good justification; unclear distinction objectives/follow-up; organizational problems in NGO	primary planned output (workshop) achieved; other goals fall outside timeframe project (follow-up)	poor communication with NGO; deficient reporting	ENABLING - increased community awareness & access to networks/knowledge (not in timeframe project)	NA	SOME EXTENT - increased social/human capital (not in timeframe project)	UNCERTAIN - internal organizational problems (network appears to be operational > 6GL63A)	
WRM (LA 5036) Guyana	gross underestimation time; insufficient preparation; lack experience of NGO with GIS	mapping/maps completed, but with considerable delay; capacity development IPO (APA)	delay in reporting by NGO; does not use standard format	ENABLING - increased community awareness/ empowerment	OK - secure tenure precondition for community-based conservation (CBNRM); no specific target	SOME EXTENT - increased human/social capital	MODERATE - strong IPO, sustained support, court case pending	
CI (LA 5064) Suriname	technocratic; poor management; lack experience of NGO working with communities	no capacity development (planned output); questionable quality maps & purpose/use maps unknown	poor communication with NGO; considerable delay in reporting	NO - (possible) tension land rights & PA ("Eilert de Haan Nature Reserve")	FLAWED - no genuine attempt CI to devolve management to communities; initiative by outsiders; tension with PA	NO (no meaningful participation in project activities)	LOW - stand-alone project, no capacity development; [lesson] better preparatory work needed	NEG
WRM & Kuyujani (LA 5084) Venezuela	adequate planning (timescale vs. coverage); technical/logistical difficulties	mapping/maps completed & deployed in court cases; capacity development IPO/CBOs	no remarks	ENABLING - increased community awareness/ empowerment; synergy land rights & future PA; positive policy impact	OK - secure tenure for integrating conservation & development (collaborative management PA)	SOME EXTENT - increased social/human capital; enhanced public participation	HIGH - strong IPO, sustained support, legal reform; [lesson] involment government agencies beneficial	POS

FPP (LA 5106) Three Guyanas	see analysis under 6LA205A	see analysis under 6LA205A	see analysis under 6LA205A	see analysis under 6LA205A	see analysis under 6LA205A	see analysis under 6LA205A	see analysis under 6LA205A	
CRIMA & FGA (1LA22A) Colombia	undermined by constraints of persistent illegal mining & fishing (due to large coverage)	workshops held; maps & territorial management plan completed; local government strengthened	communication problems (due to distances & lack of infrastructure)	ENABLING - increased community awareness/ empowerment; revival/building local institutions	OK - secure tenure precondition for community-based conservation (CBNRM); no specific target	YES - increased social capital; increased legal capital (prior to project); devolution of power	HIGH - strong IPO, autonomous process, sustained support, secure tenure; [lesson] legal context important factor	POS
Fundecol & Altropico 1LA10A/55A Ecuador	many technical/logistical problems (obstruction by government agency & bad weather conditions); security problems in border area	aerial photography/maps completed, but with considerable delay (other planned outputs not achieved in timeframe project)	reporting does not match proposal; no report on longer term results (NGO not obligated to do so)	ENABLING - increased community awareness; revival/ building local institutions (not in timeframe project); synergy land rights & PA	OK - secure tenure precondition for community-based conservation (CBNRM); no specific target [10A]; — for integrating conservation & development (collaborative management PA) [55A]	YES - increased social capital; [10A] increased legal capital (prior to project); [55A] enhanced public participation (not in timeframe project)	HIGH - strong IPO, embedded project, secure tenure; [lesson] better pre-planning & preparatory work needed	
APA (6LA161A) Guyana	proposal short & sketchy; very short timeframe (3 months); good preparatory work	occupation & land use map completed; (other planned outputs not achieved in timeframe project)	no remarks	ENABLING - increased community awareness/ empowerment; positive policy impact (not in timeframe project)	OK - secure tenure precondition for community-based conservation (CBNRM); no specific target	SOME EXTENT - increased human/social/legal capital	HIGH - strong IPO, sustained support, favorable court decision (implementation pending)	POS
VIDS (6LA172A) Suriname	deficient proposal (no problem analysis); underestimation time; lack involvement government agencies	occupation & land use map completed/presented; IPO/CBOs mobilize to defend lands	delay in reporting by NGO; does not use standard format	NEUTRAL - increased community awareness; tension land rights & future PA	PROBLEM - secure tenure precondition for community-based conservation (CBNRM); tension/conflict with PA (WWF)	SOME EXTENT - increased human/social capital	UNCERTAIN - tension with WWF, negative policy, court case in preparation; [lesson] need for harmonizing agendas	
FPP (6LA205A) Guyana/Suriname	no clear separation between this & other projects, past & present (e.g. LA 5106 & 6LA225A)	major gains in protection & recognition of rights (other planned outputs achieved to lesser extent)	reporting on ongoing activities does not fit into restricted 1-year review format	ENABLING/NEUTRAL - positive policy impact [GU]; tension land rights & future PA [SU]	PROBLEM - secure tenure precondition for community-based conservation (CBNRM); tension with PA	YES/SOME EXTENT - increased social/human capital [GU/SU]; increased legal capital [GU]	MODERATE - degree of dependency; [lesson] project not most appropriately funded through Small Grants Program	
LEO (6GL63A) Global	good justification; unclear follow-up	review (database) mapping projects completed; two CMCs indicated; recommendations	no remarks	ENABLING - increased community access to knowledge (not in timeframe project)	NA	SOME EXTENT - increased social/human capital (not in timeframe project)	NA	

2. Analysis of the project cluster: synthesis

2.1 Problem definition and primary goal of community mapping

Generally, it can be said that natural resource management in indigenous territories – be they recognized or ancestral – has two dimensions, an internal and an external dimension. The external dimension relates to collective rights – recognized or claimed – regulating the defence of, or control over land and resources by the larger territorial community towards 'outsiders', i.e. non-indigenous economic, administrative or environmental (government) actors and agencies (but also indigenous groups not belonging to the local territorial unit). The internal dimension, on the other hand, relates to social arrangements, norms and institutions that regulate the day-to-day use and control over resources among families, lineages/clans and communities. It is concerned with local customary administrative systems and practices.

In their problems definition, most projects in the cluster primarily or in the first instance emphasized the abovementioned external dimension, in the sense that they were aimed at defending indigenous lands against 'outsiders', mostly economic actors or 'resource industries', who threaten the resource base of a particular community with environmentally unsound activities (all projects, with the exception of 1AS153A [PAFID] and 6GL63A [LEO]). This was being justified by the fact that, at the time of project inception, there was no or insufficient recognition of the collective right of the community to the lands and natural resources they traditionally occupy and use. In the case of most and particularly the older projects, mapping was primarily a means in the pursuit of secure tenure and resource rights. The strategy for addressing the problem as defined thus follows a 'rights-based approach'.

A number of projects were also concerned, to a lesser or greater degree, with the internal dimension, i.e. the use and management of natural resources by local communities as well as their potential role in biodiversity conservation.[2] These project components were mostly placed under the header of 'land use planning', 'management planning' or 'territorial planning' (Sp.: ordenamiento territorial). Several projects made an inventory of land use and mentioned management planning as a secondary activity, which for various reasons – though mainly time – could not be completed or implemented within the timeframe of the project (LA 5084 [WRM/Kuyujani]; 1AS54A [BRIMAS]; 1LA10A [Altropico]; 6LA161A [APA]; 6LA172A [VIDS]). In one project, where tenure rights had been secured prior to the project, mapping was used as one of several techniques in a larger process of management planning (1LA22A [CRIMA/FGA]).

As will be argued more fully below, the most important criticism regarding the problem definition and primary goal of the mapping projects funded under TRP concerns the one-sided focus on mapping for tenure as the preferred strategy to fend off external threats to indigenous lands and biodiversity. In view of the sustainability of projects results for community-based conservation, it is recommended that especially follow-up projects dedicate more attention to mapping for management planning and as a context for institution-building, i.e. that they make a shift in strategy towards the development of local stewardship agendas. This has not, or not sufficiently been done until now. This criticism also applies to a scan of other TRP-funded projects with mapping components (e.g. 6AS95A, 6AS117A, 6LA181A, 6LA211A).

2.2 Project duration, planning & achievability

Most projects initially covered a period of one year or less. In many cases this has proven too short for achieving even the most immediate planned objectives: trained community mappers, relevant geographical data gathered, map produced and presented to the communities and outside public. This is especially so in the case of projects involving a first-time demarcation of a territory.

Where the NGO or IPO did not have previous experience with the social and logistical intricacies of community mapping, objectives were often unrealistically formulated. Organizations responsible for

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[2] "Customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements" (CBD, article 10c).

the execution of the project either had insufficient comprehension of the social dynamics of working with communities (LA 5064 [CI-Suriname]; 6AS102A [CELCOR]); allocated insufficient time for the training of mapping teams; were faced with government agencies that were uncooperative in furnishing existing available data or working permissions (LA 5036 [WRM]; 1LA10A/55A [Fundecol/Altropico]); or experienced problems due to difficult accessible terrain or other, technical difficulties (6LA161A [APA]; 6LA172A [VIDS]). The resulting backlogs and delays required sometimes-considerable project extensions that were mostly paid for by the donor (IUCN NL). In one case, even an 8-month extension did not suffice to complete the mapping activity (6AS102A [CELCOR]).

In the case of demarcation of indigenous territories, it can be estimated beforehand whether a project is achievable (feasible) by looking to the budget/coverage relation. A project with a small budget that within a period of one year or less aims to chart an extended area with a relatively large population, as was the case with project 6AS102A (CELCOR) in PNG, which aimed to map an area of 300,000 ha with 10,000 inhabitants in with a budget of only 32,000 EUR – is not very likely to be feasible. This strongly contrasts with the relatively successful LA 5084 (WRM/KUYUJANI) project in Venezuela, which in the same amount of time (1 year) counted with 150,000 USD to map a territory of 34,200 ha inhabited by 2 (extended) indigenous communities. In the case of projects that are more oriented towards land use and management planning (stewardship) this budget/coverage relation is different (feasibility is less determined by technical, and more by social factors).

Positive exceptions excluded (1AS54A [BRIMAS]; LA 5084 [WRM/Kuyujani]), and not considering other than field projects (not 6AS153A [PAFID]; 6GL63A [LEO]), it appears that in general project achievability is difficult to estimate beforehand, particularly in view of the numerous preconditions that must be met in community-mapping projects. It is for this reason that partner organizations positively consider IUCN NL for its lenient funding policy.

A look at the quick scan of other projects that include mapping components – or builds on the results of previous mapping (for stewardship development) – learns that newer TRP-funded projects fortunately have longer term durations of up to 3 years (e.g. 6LA128A [Acaipi] – 36 months! – and 6AS110A and 6LA132A – both 24 months).

2.3 Project alignment, scaling up & linking

Much of the expertise that was developed in the early TRP-funded mapping projects was used in later projects, especially if these took place in the same region and were executed by indigenous communities and organizations that received field support from the same NGOs. In this case, a learning process could develop and there was replication of successful approaches and methodologies applied elsewhere previously. This is very clear in the Guyana Shield Region, where related organizations World Rainforest Movement and Forest Peoples Programme were responsible for the execution and/or support of 4 subsequent demarcation projects (LA 5036 [WRM]; LA 5084 [WRM/Kuyujani]; 6LA161A [APA]; 6LA172A [VIDS]). All these projects moreover received technical assistance from mapping expert Peter Poole of Local Earth Observatory (LEO), who had previous experience with mapping in other parts of the world, particularly relating to the integration of locally collected geographic data into GIS applications and the processing of maps. In the meantime, the Ecuadorian double project also gained from Poole's experience (1LA10A/55A [Fundecol/Altropico]). In Southeast Asia (Sarawak), the organizations involved with two projects later independently continued (without sustained support from TRP) to apply their previously developed methodology.

Four projects made important contributions in feeding back (linking) achieved project results to processes on a higher level. Two of these had the explicit goal to improve the wider institutional context for community mapping, indigenous rights and community-based conservation (LA 5106 [FPP]; 6LA205A [FPP]). Starting from problems encountered in the field, both associated projects were aimed at the institutional strengthening (capacity-development) of indigenous organizations so as to enable them to better defend community lands against ecologically destructive developments – as well as imposed conservation projects – through legal and political processes on a national level. Since favourable legislation is to a considerable extent determining the (long-term) sustainability of indigenous communities' efforts in environmental management and conservation – an important goal of all mapping projects, and the most important reason for IUCN NL to support them – such capacity building and policy influencing projects have a crucial supporting role to fulfil

(something which does not always seem to be sufficiently acknowledged; see review 6LA205A). Two other projects were specifically aimed at contributing to the establishment of regional community mapping centres (CMCs). Project 1AS153A (PAFID) succeeded in bringing together people with different national mapping experiences in a workshop that functioned as the launch pad for a Southeast Asian network; project 6GL63A (LEO) set up a database of indigenous mapping projects, including relevant expertise and technology sources. The resulting contacts and knowledge base facilitate the exchange of experiences, skills and information and lead to a more effective utilization of locally generated, regionally appropriate mapping expertise.

Several of the projects mentioned were included in two recent international volumes on community-based conservation and mapping: **Brosius, J. P., A. Tsin, et al.** (2005). *Communities and conservation: histories and politics of community-based natural resource management.* Walnut Creek CA, Alta Mira Press. / **Fox, J., K. Suryanata, et al.** (2005). *Mapping communities: ethics, values, practice.* Honolulu, Hawaii, East-West Center. Both works are likely to influence and leave their mark on international policy discussions.

2.4 Project design & management by the partner organization

Many organizations failed to include a thorough pre-project situation analysis in their project proposal, in the sense that they provided little or fragmented information in relation to the wider institutional (i.e. politico-legal) context in which the project took place, such as recent developments in national policy/legislation with respect to indigenous land rights and natural resource management (exploitation) and conservation (this was the case with most projects, with notable exceptions in LA 5106 [FPP], 1LA22A [CRIMA/FGA], 6AS205A [FPP]). In view of the 'rights-through-mapping' strategy followed by most projects, clear information on this situation is essential for assessing opportunities and chances of (long-term) success. Because of the generally narrow focus of projects on achieving tenure, proposals also often lacked substantive information with regard to the indigenous communities that are being targeted, for example about recent socio-cultural change and the state of local customary systems of resource management (all projects, with a notable exception in 1LA22A [CRIMA/FGA]). This information is highly relevant when the goal of projects is to (ultimately) contribute to conservation that combines local traditional knowledge with science-based methodologies. Finally and strangely, proposals often did not give much insight into the working procedure of the mapping activity, i.e. the degree of community involvement in data gathering or whether field observations are combined with groups discussions and interviews (Poole 2003). This makes it hard to assess the degree of effective/meaningful participation.

Proposals often left to be desired in terms of coherence and distinction between objectives, activities, expected results (planned outputs) and follow-up activities. Project 6AS102A (CELCOR), for example, included a sound problem analysis, but missed clearly articulated activities and planned outputs – seemingly indicative of the NGO's lack of strategic direction. The proposal of project 6LA172A (VIDS) did not include a problem definition as such and only consisted of an enumeration of activities and planned outputs – apparently knowledge of the project background was taken for granted. Sometimes proposals were very short and sketchy, like that of 6LA161A (APA), which may be explained by the time pressure under which the otherwise very focused project was formulated. However important, projects for rights support and policy influence (LA 5106 [FPP]; 6LA205A [FPP]), typically ongoing and long-term processes, are difficult to fit into the restricted format of small grants projects, a problem that becomes particularly evident in project reporting. Another serious problem is that a number of projects did not clearly distinguish between activities/planned outputs and possible or desirable follow-up activities. By formulating outputs that cannot realistically be achieved within the project timeframe, projects create unrealistic expectations and run the risk of being negatively evaluated (6AS153A [PAFID]; 1LA10A55A [Fundecol/Altropico]).

Regarding project management and performance by the partner organization (NGO or IPO), project showed mixed results. A number of mapping exercises to a greater or lesser degree were dealing with lack of experience. It should not surprise that some of the pioneer projects had to cope with technical-logistical problems and planning difficulties (AZ 3013 [SKO]; LA 5036 [WRM]). With projects in the Guyana Shield Region, such problems were in part overcome with training and technical support by external experts, like Peter Poole of LEO; subsequent projects profited from previously acquired skills. (This was also the case with PACOS' assistance to the Sarawak projects). In two cases, partner organizations had little or no experience in working with community groups

(LA 5064 [CI-Suriname]; 6AS102A [CELCOR]). CI-Suriname not only did not have this experience, it also did not align with the needs of the communities (it attempted to buy the participation of village leaders). The organization's capacity for managing this kind of project, as well as its intentions for undertaking it, must be seriously questioned. On account of the above, it seems that projects have better chances of success when partner organizations are more closely related to the targeted communities. This would argue for funding projects whereby an IPO functions as go-between between conservation organization/mapping support group (NGO) and communities, or whereby an IPO is fully responsible for project execution.[3]

A number of projects failed to involve relevant government agencies (e.g. land survey department, geographical institute, ministry of natural resources) as a major project stakeholder (AZ 3013 [SKO]; 1AS54A [BRIMAS]; 1LA10A/55A [Fundecol/Altropico]; 6LA172A [VIDS]), which, as other projects have positively demonstrated (LA 5084 [WRM/Kuyujani]; 1LA22A [CRIMA/FGA]), may increase the acceptance and legitimacy of the project and the IPO involved, and significantly contributes to its immediate and long-term chances of success. Positive government involvement is not always easily achieved however in view of opposing agendas of different stakeholders and sometimes-hostile relations between indigenous peoples and governments. Here rights support and policy dialogue can offer valuable contributions.

2.5 Project achievements & measurability

Most projects have achieved – admittedly often with project extensions – their immediate objectives (planned outputs), that is, they have realized substantive results in the sense that training workshops have been held, community-mapping exercises were successfully conducted, geographically accurate boundary and/or occupation and land use maps were produced and presented to communities and outside (government) agencies and, in various cases, deployed in court cases and/or legal procedures for acquiring land rights (all except 6AS102A [CELCOR]). One project – where land rights had already been secured – succeeded in completing a territorial management plan and having it officially endorsed by communities and regional (state) environmental authorities (1LA22A [CRIMA/FGA]). Two successive projects achieved important gains in influencing national policies and legislation (laws) that are favourable to indigenous peoples' rights, especially land and resource rights – although it is difficult to ascertain whether these results can actually be attributed to this particular project or the organization's other activities, both past and present (LA 5106 [FPP] & 6LA205A [FPP]). Finally, two projects contributed to community mapping centre (CMC) development, respectively by organizing a regional workshop and by setting up a database (6AS153A [PAFID]; 6GL63A [LEO]). All outcomes contribute towards creating an enabling environment – no more and no less – for community-based conservation, but all need follow up to make use of this potential.

Logically, technical results of the community mapping projects – "has the mapping taken place?" / "has the map been produced, presented and/or deployed in court (land claim cases)?" – can be more easily measured than 'soft results', i.e. project contribution to increasing 'human/social capital' – capacity development through training – and 'empowerment' – enhanced participation in decision-making, or strengthened institutions. Nonetheless it should be noted that projects (proposals), with regard to this social and institutional dimension, have generally failed to develop measurable indicators of success. Indicators or, if not provided (as is the case with many projects), 'concrete examples' mostly give limited insight in the scope and significance of the achieved results (e.g. "mapping served as a tool for community education", 1AS54A [BRIMAS]); or in the way they are supposed to contribute to addressing the identified problem (e.g. "the project increased the confidence of the community", 1LA55A [Altropico]; 6LA172A [VIDS]). Often actual and potential future results are being confused (e.g. "the activity enabled communities to reflect on land use", LA 5036 [WRM]). While capacity-development through training is mentioned as a project result (11 of 15 cases), it often remains unclear whether or to what extent this knowledge was transferred to other groups in the communities, because no insight is provided into the mapping procedure, e.g. participation in preparations and data collection and evaluation.

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[3] This may however lead to new kinds of problems relating to the limited capacity of relatively young indigenous organizations in financial project administration and the management of funds. In the case of Kuyujani in Venezuela, for example, a financial audit recently pointed out that the follow-up project to LA 5084 (WRM/Kuyujani), 6LA132A (Kuyujani), was plagued by 'grave irregularities' (pers. comm. Rietje Grit).

Because capacity development, democratic decision-making and institution building are the most important factors for success in creating an enabling environment for community-based conservation, they deserve more thorough assessment in project evaluations. This can only be done if project reports contain more specific information on these subjects. It is therefore up to IUCN NL to develop and demand unambiguous and measurable indicators of success.

2.6 Contribution to biodiversity conservation & poverty alleviation

2.6.1 Biodiversity conservation

Although a fundamental question that needs to be asked, none of the projects can be said to have brought about "a positive change in the state of the ecosystems and biodiversity" (question in review form of technical final reports). This may be too much to expect, as this would require that, in a period of (only) 1 to 1.5 years,[4] projects achieve both community maps and secure tenure rights, as well as effective community-based regimes for biodiversity management that are capable of defending ecosystems in indigenous territories against destructive resource industries and regulating sustainable land use and development by and for local communities.

Reality is different. Tenure negotiations, whether on the basis of community maps or not, are notoriously slow moving. Even 10 years after the first community mapping project was completed – Upper Mazaruni in Guyana (LA 5036 [WRM]) in 1996 – none of the land claims (aboriginal title) cases that were started by the projects under analysis have as yet achieved legal recognition of collective land rights (secure tenure) for the communities involved – not even in Venezuela (LA 5084 [WRM/Kuyujani]) where a new political constitution, adopted in 1999, includes language referring to the recognition of indigenous lands and 'habitats'. And even with secure tenure achieved, it is not very likely that illegal resource exploitation activities by outside actors and agencies can immediately, let alone completely, be stopped or prevented. This is illustrated by the projects in Ecuador (1LA10A) and Colombia (1LA22A), where indigenous territorial rights were recognized prior to the project, but communities are still today coping with encroachment by plantations, illegal resource exploitations and colonization. The access and use of these vast stretches of sparsely populated rainforest (encompassing hundred thousands or even millions of hectares) are not easily controlled. Also, even when external threats, at least theoretically (on paper), are reduced – because with formally recognized tenure (collective ownership), unconsented resource extraction would at least become illegal where formerly it was not – internal threats to biodiversity are not necessarily addressed. While all projects seem to be essentially concerned with preventing logging, mining, plantation development, and hydropower projects, they generally seem to neglect the fact that local resource use practices and management (institutions) are often under increasing pressure from change (demographic growth, changing settlement, breakdown of leadership/cultural values).

Concluding, it can be said that small grants projects for community mapping are no more than a first step towards recognition of land rights and constituting effective community institutions for land and resource management and biodiversity conservation; in this long-term process, secure tenure only is one of many enabling factors – even though a very important one. Nonetheless, the mapping experiences under analysis in many cases have made considerable contributions to creating "better conditions for biodiversity conservation" (and poverty alleviation) in the medium and long term. Most importantly, these are:

Education & empowerment

Mapping is an empowering and constructive enterprise. Members of community mapping teams acquire new knowledge and various kinds of skills, such as reading, interpreting and using maps, collection and compiling field data and making inventories of valuable resources, their use and location (settlements, areas for hunting, gathering, and significant cultural activities). Indigenous organizations involved with the coordination of the mapping increase their institutional capacity and organizational strength (see Kuyujani, APA and VIDS now independently conducting mapping exercises). In case of broad community participation, the mapping activity can function as a tool for raising awareness on environmental/conservation issues and mobilizing communities to defend their lands and resource base. Commonly it generates curiosity among community members about, for example, the motivation of outsiders with an interest in their territory, such as conservationists, or

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[4] Although the selected projects all had initial durations of one year or less, many were extended. Theoretically however, small grant projects can have maximum duration of 3 years (with a budget of up to 85,000 Euro).

alternative ways to generate income from traditional resources. The map, and the information contained in it, can serve to spark discussions on actual and future use and allocation of natural resources, i.e. on resource use and management planning. This has occurred (incipiently) in projects: 1AS54A (BRIMAS); LA 5084 (WRM/Kuyujani); 1LA22A (CRIMA/FGA); to a lesser extent 6AS102A (CELCOR); and 1LA10A/55A (Fundecol/Altropico). In this way, maps can "stimulate communities to reflect upon their situation, openly discuss interactions between their environment and local institutions" and – as a next step, which was often not yet made in the project period – "collectively assume responsibilities for allocating and managing lands and local natural resources" (Poole 1995: 3). Finally, maps are deployed, as legal capital, in proposals for land legalization and political negotiations (during or after most field projects).

Reinforced cultural identities and connections to place

"Mapping reinforces indigenous cultural identities and connections to place" (Herlihy & Knapp 2003: 310). Some community mapping projects list increased self-confidence and processes of cultural revitalisation of involved communities as important results (AZ 3013 [SKO]; 1AS54A [BRIMAS]; 1LA55A [Altropico]; 6LA172A [VIDS]). To those without anthropological background, this may seem trivial or exotic, while in fact it is very important. For communities dealing with eroding social cohesion, diminishing ethnic identity and a fatalistic general attitude, the reversal of this 'downward' trend may be the beginning of a process of recovery of traditional customs, practices, and institutions, including ecological knowledge and resource management practices. Through a rediscovery of their economic, cultural and spiritual relationships with the land and natural environment, communities develop stronger attachment to the land they occupy or otherwise use, and are more likely to become committed to biodiversity conservation. Map-making capabilities in this way can also be used to actively restore lands and traditional agricultural and resource use practices, but this potential has until now been left unutilized (this was defined as objective in 1LA55A).

More productive relations with outside agencies

Mapping exercises and the resulting maps have been cause and medium for better communication between indigenous communities and outside agencies. In the map-making process indigenous ecological knowledge is recorded and transformed into maps and descriptive information. Like this, maps can strengthen the voice of indigenous communities in discussions relating to conservation and natural resources. Moreover, "policymakers easily understand maps, and information movement between indigenous and state authorities [and conservation organizations] becomes more fluid when they are present" (Herlihy & Knapp 2003: 310). In Venezuela (LA 5084 [WRM/Kuyujani]) there was promising cooperation between communities and National Parks agency Imparques; in Colombia (1LA22A CRIMA/FGA) territorial planning based on mapping led to agreement with state environmental authority Corpoamazonía; and in Ecuador (1LA55A), although not achieved within the project period, aerial photographs and maps were likely to be used in cooperation with the NGO FEPP, which is involving communities in the management of the nearby Mangrove Ecological Reserve (see also follow-up project 6LA159A). It should be noted however that in all of these projects, both parties are drawing together for the first time, and whether or not this will result in fruitful collaborative management remains to be seen. Also, cooperation with outside agencies has tended to increase the legitimacy of indigenous organizations both towards the government/conservation organizations and towards their constituencies (e.g. LA 5084 [WRM/Kuyujani]; 6LA161A [APA]).

Potential for resolving conflict and territorial issues

Mapping can provide insight in – but can also cause – conflicts over land and natural resources between and among communities, which may originate from old rivalries or are caused by competing claims that are the result of recent changes in settlement or resource use practices. In the cluster under analysis, this was the case between Dayak/Penan communities in Sarawak (1AS54A [BRIMAS]) and between the different clans that make up the larger community of the Managalas Plateau in PNG (6AS102A [CELCOR]). In both cases, mapping has played a part in the resolution of these conflicts/competing claims (resolving boundary disputes), thus contributing to an enabling environment for conservation. This can however be a time-consuming process and calls for careful exploration and pre-project planning. With regard to the mapping projects in the Guyana Shield Region, it remains unclear from the project documentation whether similar problems have occurred and/or have been resolved.

Especially because mapping is a tool for empowerment, projects can considerably change the way communities perceive rights to land, i.e. in terms of "prior rights of local people and the recent claims of rights [by others] over the same territory" (Eghenter 2000: iii), including those of conservation organizations. Where projects do not from the start explicitly draw the communities' attention to environmental concerns and biodiversity management, community mapping can turn itself against the conservation agenda. In principle, this resistance "is an indication of a successful implementation of the activities and transfer of skills that are now being used on behalf of the emerging and specific interests of the participants" (Eghenter 2000: 24). The problem here is that conservation awareness among communities and their understanding of the importance of a protected area cannot be automatically assumed. In project 6LA172A (VIDS) – like in other projects – the aspect of community-based conservation planning/management remained strangely marginal compared to the goal of protecting lands against the external threat of destructive resource industries. Nonetheless, also – or maybe even especially – in cases where there is a divide between community concerns and biodiversity protection, it should be pointed out that mapping activities, provided they are well-focused (also management planning), can provide a context for removing these tensions – which may have already been present latently – and finding reasonable and fair solutions, for example in elaborating a zonation and land use plan (see appendix for listed stewardship applications).[5]

2.6.2 Poverty alleviation

In the selected cluster of mapping projects, individual projects rarely if ever included explicit references to poverty and did not involve specific activities directed at poverty alleviation. This should come as no surprise since they involved short-term projects that were mainly focused on mapping indigenous lands for the protection of their (rights to) natural resources. Possibly, this is also due to the fact that these communities derive their livelihoods from habitats that have, until recently, remained largely intact and which still have access to a wide range of natural resources. As such, poverty is not as big an issue as in the case of other, more marginalized communities elsewhere. But since continued access to natural/livelihood resources is increasingly coming under threat from various external as well as internal factors, it can be said that projects have a positive impact on 'poverty' to the degree that they contribute to secure access to natural resources, or to the ability of communities to defend this security.[6]

Various projects contributed to curbing competing or destructive resource uses that imply a deterioration of natural/livelihood resources – in terms of availability, quality and diversity. Although few of the projects under study have achieved secure or exclusive tenure rights (land claim cases are pending, even many years after the project), the resulting (land use) maps have helped the communities in bringing formal complaints, while capacity development and institution building processes that were set into motion may enable them to more effectively monitor and patrol uncontrolled resource use. Several projects have achieved some degree of success in this respect (most notably the Guyana projects, but also 6LA172A [VIDS], and, potentially, 1LA10A/55A [Fundecol/Altropico]). The poverty situation can also be served in case the mapping experience gives communities the confidence to challenge externally imposed resource use restrictions, for example by mining/logging concession holders, but also in the face of (possibly) undemocratically constituted nature reserves or protected areas (see 6LA172A [VIDS]; 6LA205A [FPP]).[7]

However, decreasing access to natural resources and, in consequence, decreasing livelihood security, is not always only caused by external threats, but sometimes also by changing land and

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[5] Eghenter (2000) describes a very similar conflict case in Kayan Mentarang, Indonesia.

[6] Avoiding the narrow definition of poverty as a lack of income, IUCN applies a "multi-dimensional concept of poverty", adapted from the World Bank (Fisher et al. 2005). This concept has it that there are three dimensions of poverty: lack of assets, powerlessness and vulnerability; and, consequently, promotes a three-pronged strategy for poverty reduction: building assets by providing opportunities for growth, empowerment and increasing security.

[7] Communities involved in 6LA172A (VIDS) seem to have grown weary of protected areas and WWF in particular, because the organization is purported to have recently established "a study area leading to the establishment of the Roraima sandstone (Rudi Kappel) savannah Protected Area without notifying (the consent of) the communities" (pers. comm. MacKay, Feb. 2006). As was the case with CI-Suriname before (LA 5064), WWF apparently does not succeed in winning the trust of indigenous communities and convince them that their access and use rights to natural resources in the proposed nature reserve will be sufficiently guaranteed. I all likelihood (in view of the information on the WWF 'Roraima project'), this is due to insufficient or failing participatory mechanisms, especially in the preparatory stages of the conservation endeavour. There is a potential role for IUCN NL Small Grants here, in easing tensions between communities and protected areas.

resource use patters of the indigenous communities themselves, for example as a result of increasing population, changing settlement patterns causing local overuse or depletion, pressures and enticements of the market (e.g. for bush meat or for timber) or, more generally, rapid cultural change causing customary indigenous management regimes to disintegrate or break down. Emphasizing external threats, few projects explicitly mention these internal pressures (exception: 1AS54A [BRIMAS]), although they can be assumed to exist in most cases. This situation can be helped by using maps as cause or tool for land use inventory or livelihood strategy development activities (1LA22A [CRIMA/FGA]; 1LA55A [Altropico], to lesser degree 6LA161A [APA], 6LA172A [VIDS]). This problem however warrants far more attention, both in future mapping projects and in projects following mapping experiences!

Although some indigenous communities may be intent on continuing their traditional life ways, others have a legitimate desire to increase, now or in the future, their standard of living. The projects analyzed in this cluster almost without exception did not include a livelihood component with a view to income generation. Future and follow-up projects may need to involve such components, however, both to provide an incentive for community-based conservation efforts (indigenous stewardship) and to prevent or reduce pressures on natural resources. This is particularly the case in situations where the cause for indigenous land rights is (to be) positively linked up with the creation protected areas (LA 5084 [WRM/Kuyujani]; 1AS102A [CELCOR]; 1LA55A [Altropico]; possibly: LA 5036 [WRM]; 6LA172A [VIDS]).

2.7 Project sustainability and follow-up of community mapping projects

The problem with mapping for acquiring secure tenure is that after the map has been made, legal proceedings are started and difficult and tiresome tenure negotiations take on for years in distant government buildings. In the meantime, local communities see their community mapping teams dismantled and are left behind, with all their recently acquired capabilities unused, while unsustainable resource exploitation continues on pretty much the same footing. As was stated by Peter Poole in his report for IUCN NL (6GL63A): "If community mapping is going to have any long term effects, at community level, then it will have to be linked to something else than the short term production of a map for tenure negotiations. Tenure mapping is good at getting things going, but not at keeping them going." This conclusion coincides with the one made by the IUCN NL reviewer (Wensing) of the final report of project 6LA205A (FPP), when summarizing the findings of the field evaluator (Van der Hoeven) after visiting various Surinamese CBOs: "Most partner organizations succeed in collecting and systematizing information (see the maps they make) but generally are uncertain of how to proceed into the next phase". As has been argued by Poole, community mapping has much more potential than only for acquiring tenure. Maps as well as the traditional and local information they contain also can be used to expand local competence in one-the-ground conservation. For this to happen, environmental issues need to be addressed in as early a stage as possible however. Also, such efforts should go further than merely inducing communities to commit to the goal of biodiversity preservation and informing, educating and training of them in western, science-based conservation techniques. Instead such projects should involve the participatory development of local stewardship agendas and contribute to sustaining and expanding local indigenous customary institutions to help communities deal more effectively with contemporary claimants to their resources and, at the same time, enable them to deliberate and reach decisions among themselves on the allocation of the environmental assets that are attracting such outside attention. Information-gathering/mapping skills that communities have acquired in previous (first) community mapping experiences can be helpful tools in the process (Poole & MacKinven, no date; Poole 2005). From this follows that project sustainability is determined by the extent to which communities – independently or with the continued assistance/support of conservation organizations and agencies – are in the position to build and capitalize, in the post-project phase, on the enabling conditions that were achieved in the process of the initial community mapping experience.

Of the 11 field projects that were analysed, 7 projects – 6 in Latin America and 1 in Southeast Asia – to some degree dedicated attention to biodiversity inventory and management planning (other projects were restricted first-time demarcation). Within this selection (of 7), only in 3 cases IUCN NL remained active in the area through the funding of a follow-up project, in all cases in Latin America. The Venezuelan project LA 5084 (WRM/Kuyujani) was followed by 6 LA132A (Kuyujani). Where the first project was primarily focused on the demarcation of the territory of the Ye'kuana/Sanema, the second project built on previously acquired experiences and capabilities by

further developing a management plan or the area; also there was attention for capacity/institution-building, but with an emphasis on 'non-traditional, western techniques of management'; although traditional knowledge was mentioned, the project did not explicitly refer to customary indigenous regulatory systems (summary/results in 'roots'). The Ecuadorian double project 1LA10A/55A (Fundecol/Altropico) was succeeded by 6LA159A, however through the support of a different NGO (NYTUA). The project was aimed at protection and management of the Awacachi Ecological Corridor. Although mention was made of 'rangers' and 'work plan' (for patrolling), management planning was not explicitly defined as a project activity and neither did the project pay attention to indigenous community institutions and traditional regulatory systems. The project was prematurely terminated due to irregularities in the administration of funds by the NGO (summary/results in 'roots'). In four other projects that defined or initiated inventory and planning activities (1AS54A [BRIMAS], 1LA22A [CRIMA/FGA], 6LA161A [APA], 6LA172A [VIDS]) these activities were not (yet) continued within a TRP-funded follow-up project. If this situation were to remain in the future, this would be disappointing because communities in this way will not accompanied in the process of the institutional operationalisation of their management plan.[8]

In this context (project sustainability), it is also interesting to briefly observe a number of other TRP-funded projects (with indigenous peoples) that have a mapping component – or build on previous (not TRP-funded) mapping experiences – and see where these projects put their emphasis. In Guyana, 6LA211A (APA), which builds on mapping experiences from project 6LA161A (APA), was involved with conducting an alternative AIE/SIA with a view to protecting indigenous lands against mining operations; 6LA211A does not continue the biodiversity inventory activities conducted under 6LA161A. In Peru, 6LA181A (Serjali) was aimed at protecting indigenous territorial rights in the Nahua/Kugapagori reserve in the face of immediate threats of illegal logging and gas exploration. However important, these projects continue to use a rights-based approach, and are not concerned with developing a stewardship agenda (i.e. capacity-development in CBNRM) for the communities concerned. A notable exception and – in the eyes of the analyst (JvdS) – an exemplary project is 6LA128A (Acaipi) in Colombia. Although indigenous communities in the Vaupés resguardo do not face immediate external threats, the project aims to develop a management plan for CBNRM, thereby prioritising the recovery and strengthening of communities' "own forms of social organization, including traditional knowledge and regulatory systems" (results in 'roots'). In Asia, three other projects involving mapping/community property rights stand out for including – much more than in Latin American projects – livelihood components, i.e. NTFP micro enterprise development (for damar resin, rattans, bamboo, honey), as an incentive for community commitment to biodiversity conservation and as a contribution to poverty reduction. In Indonesia (6AS95A) and India (6AS117A), projects however seem to be concerned more with reducing human pressure and dependence on buffer zone and biosphere reserve – i.e. through 'alternative livelihood strategies' – than they are concerned with management planning and the development of a community stewardship agenda for continued sustainable use and conservation of natural resources. Project 6AS110A (BIND) in the Philippines, distinguishes itself from the previous two projects to the extent that it includes participatory biodiversity inventory (in PRA), comprehensive resource use planning and the institutionalization of activities in which an attempts is made to "weld indigenous knowledge with assisted natural regeneration activities, planting and reforestation" (summary in 'roots').

Concluding, it can be said that TRP projects that are concerned with indigenous mapping and property rights – also those outside the analysed cluster – still only pay scant attention to, and are rarely specifically aimed at developing local stewardship agendas and expanding local competence in on-the-ground conservation that is based on indigenous traditional knowledge and recovered and/or strengthened customary institutions for land and resource allocation. If community-mapping projects are to contribute to building community-based natural resource management that is responsive to the needs of both communities and conservation, it is recommended that future mapping is directed more towards finding practical solutions for, and are used as a context for achieving indigenous stewardship (see appendix for listed applications).

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[8] It is possible that the results of finalised projects that were not continued under TRP have been independently taken up by the involved partner organizations or have been used as a starting point for follow-up activities that were funded by other donor organizations. With the information available, this could not be ascertained. Concerning follow-up funding under TRP, it should be noted that the TRP3 programme has been concluded (terminated) in September 2005 and no new selection rounds have been held since, except for budget-neutral extensions; so some partners have not been in the opportunity to present new project proposals to IUCN NL.

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Appendix: stewardship applications of indigenous mapping
(taken from: Poole 2005: 27)

Protecting indigenous territories and Practice
Demarcation
Boundary monitoring
Reserving sites for special reasons
Mapping areas of importance for traditional uses

Sustaining the local economy
Mapping and allocating community environmental assets
Tourism: eco-tourism, scientific tourism, hunters
Non-timber forest products potential
Community-scale forestry and milling
"Green" artesanal gold-mining
Biodiversity "gardening" & plant collecting

Ecological restoration and management
Conserving or adapting traditional management regimes
Restoring clearcut forest
Fish re-stocking and hatcheries
Restoring salmon runs
Restoring mangroves to abandoned industrial shrimp farms.
Restoring coral reefs
Breed and release re-stocking: turtles, crocodile, raptors.
Wildlife husbandry projects
Wildlife and Fisheries Management

Environmental impact management
Assessment
Mitigation
Monitoring

Compliance
Monitoring environmental impacts of mining and utilities
Monitoring logging
Gathering evidence of illegal logging
Detecting illegal mining operations
Detecting point source water pollution

Environmental Services
Watershed conservation
Biodiversity protection
Carbon sequestration surveys
Biodiversity "gardens