Bringing the Vertical Dimension to the Negotiating Table

Preliminary Assessment of a Conflict Resolution Case in the Philippines

▶ By GIACOMO RAMBALDI, SAHLEE BUGNA, ANGELA TIANGCO and DAVE DE VERA

Background

Since time immemorial humans have been increasingly competing for natural resources. Their occurrence and access have been used to exert power and authority, influence and enact policies and decisions concerning public life, and economic and social development. An uncountable series of conflicts took place because of their disputed access. As early as 2200 BC[1], humans tried to document and legalize rights to resources with the use of maps, a geographic representation of the earth that has since been considered as an authoritative reference, and accorded due -

and sometimes undue - respect and credibility. Maps can lie and ignite conflict, but can also seal the final act of a long-lasting negotiation process leading to durable peace. In managing conflicts bound to the territory, the use of maps is widespread and helps locate and visualise the source of disagreement, which frequently involves boundaries defining the geographical scope of resource use and tenure. Processes leading to consensual[2] conflict resolution are complex and articulated and need the concurrence of several factors including open access to information to grant transparency; backing of appropriate institutional and legal mechanisms; adequate communication means; existence of trust among conflicting parties and facilitators;

and the identification of underlying needs which could lead the contenders to consider the solution of the conflict from broader perspectives.

In remote, poorly served areas, community-based mapping methods can help in addressing boundary issues through the visualization of the landscape, associated land uses and settlement pattern. Since 1987, scaled relief models have been used in Northern Thailand to deal with conflicts among ethnic minorities and between these and government

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[1] The earliest known example of cartographic relief representation is found in a clay tablet found in 1930-31 in north-eastern Iraq dating 2200 B.C.

[2] The goal of consensual negotiations is to generate outcomes that are acceptable to the conflicting parties with minimum compromise and trade-offs (Warner, 1998).

agencies (Tan-Kim-Yong *et al.* 1994; Srimongkontip, 2000; Hoare *et al.* 2002). In the Philippines, the use of 3-D models started later in 1993. Integrated with Geographic Information Systems (GIS) and Global Positioning Systems (GPS), Participatory 3-D Modelling (P3DM) has been used among Indigenous Peoples under the auspices of the Department of Environment and Natural Resources (DENR) and lately, of the Office of the Presidential Adviser on the Peace Process (OPAPP). This article discusses how the method has contributed to a successfull conflict resolution case in the Cordillera Administrative Region of the Philippines.

The Office of the Presidential Adviser on the Peace Process

OPAPP was established by then President Fidel V. Ramos in 1993 through Executive Order No. 125, as the lead agency tasked with managing and supervising the comprehensive peace process in the Philippines (OPAPP, 2000a). Its administrative and technical functions evolved largely from two government entities, namely the Office of the Peace Commission (OPC) and the National Unification Commission (NUC). The current Arroyo Administration has prioritised the continuation of the peace process, a key aspect of which is the direct participation of communities in governance and in the management of local issues that directly affect peace and development. OPAPP assistance in this regard includes the provision of technical and financial support to prevent, mediate or resolve conflicts as well as to enhance local capacity in conflict management. OPAPP also facilitates inter-tribal conflict resolution through area-based dialogues in coordination with support groups and agencies, and conducts research and documentation of indigenous conflict management and resolution practices (OPAPP, 2000a).

Conflict Resolution in the Cordillera

For at least a century, the Philippines' cultural and biological diversities have been under great pressure from logging, mining, conversion of forests into farmland, population increase, and movement of lowland communities into areas traditionally occupied by Indigenous Peoples (IPs). This ignited in the '70s long-lasting conflicts between minority groups and the central government.

The 1986 revolution that propelled President Corazon Aquino into power provided the opportunities for the active participation of otherwise marginalized sectors of society.

Indigenous Peoples in particular, benefited from the 1987 Constitution, which recognized and enshrined their existence, and that of their ancestral lands, cultural plurality and autonomy (Wandag, 2001). Community-based initiatives from 1986-1992 in the Cordilleras also created "peace zones", which were de-militarized areas of dialogue and consensus building, and encouraged the operation of indigenous systems.

In 1992, the National Unification Commission was created to identify the root causes of the conflicts through nation-wide consultations. As a result, the Social Reform Agenda and other peace initiatives were launched. The DENR issued DENR Administrative Order No. 2 Series 1993 (DAO 2, S. 1993) that

sought to recognize, identify and delineate areas occupied by Indigenous Peoples. The Order provided for the issuance of Certificates of Ancestral Domain Claim (CADC) to eligible groups. In order to avail of the legal stewardship entitling IPs to live, manage and utilize their ancestral domain, applicants had to meet a series of requirements including providing proof of use and occupation of given portions of the territory, since time immemorial.

In this context, maps exerted all their power in addressing resource tenure and access, and in influencing national governance: cartography resulting from two and three dimensional community-based maps, supported by GPS/GIS applications, formed the foundations upon which IPs filed numerous applications and developed ancestral domain resource management plans.

In 1996, Cordillera peace partners formulated the Four-Point Cordillera Peace and Development Agenda (**Box 1**).

A series of follow-up consultations resulted in the identification of critical peace and development issues related to land tenure / security and ancestral domain recognition.

Year 1997 marked the passage of the Indigenous People's Rights Act (IPRA) that laid the foundation for the recognition of indigenous groups' *tenurial* rights on their ancestral domains.

Box 1. Cordillera Peace and Development Agenda	
Ancestral Domain • Identification, definition, delineation • Resource use and management (land use mapping, Ancestral Domain Resource Management Plan preparation) • Innovative and sustainable development (social equity, ecological integrity)	**Cultural Integrity** • Pluralism • Enculturation • Harmony in Diversity
Healing and Reconciliation • Pluralism • Re-entry, re-integration, accomodation • Addressing the roots of insurgency	**Autonomy** • Empowerment of people through consultation consensus and participatory governance • Re-definition of governance

Between February 1996 and June 1998[3], DENR issued 23 Certificates of Ancestral Domain Claims (CADC) within the Cordillera Administrative Region including one in favour of the municipality of Balbalan in Kalinga. Most of the CADC awarded did not undergo actual ground delineation due to administrative and financial constraints.

Prior to the awarding of the certificates to the municipalities of Balbalan and neighbouring Conner (Apayao Province), OPAPP provided venues and facilitated consultations with local communities to formulate ancestral domain resource management plans with the assistance of local NGOs.

Like many other CADC holders, Balbalan signified its intention to have its CADC converted into a Certificate of Ancestral Domain Title (CADT) under the auspices of the IPRA law.

In 1999, OPAPP formulated an Integrated Conflict Resolution and Management Programme (ICRMP) for 11 pilot CADC municipalities in partnership with the Cordillera Ancestral Domain Partners for Peace and Development (CADPPD). The Programme aims to support local conflict management and resolution processes, and promote the use of indigenous knowledge, systems and practices.

Specifically, the ICRMP intends to:
1. Facilitate the settlement of boundary disputes through the interface of local governance and indigenous knowledge systems and practices of conflict resolution and management;
2. Provide assistance in preventing the escalation of conflicts that could lead to tribal wars due to territorial boundary disputes;
3. Document the processes undertaken during dispute settlement; and
4. Prepare the grounds for ac-

tual delineation and conversion of CADCs to CADTs, a prerequisite of which is the absence of boundary conflicts.

Critical components of ICRMP are capacity building; organisational strengthening; conflict management and resolution; and process documentation. As part of the capacity building component, a training programme on community land use planning and Participatory 3-D modelling[4] (P3DM) was designed in coordination with the Philippine Association for Intercultural Development (PAFID), to first be put into action in Balbalan, Kalinga (OPAPP, 2000a).

To implement the ICRMP, a series of workshops was held to establish municipal Conflict Management Committees (CMCs). The CMC, multi-sectoral in nature, is usually headed by the local chief executive, and composed of representatives from the local government units, church, people's organisations and other stakeholders present in the locality. Composition of the CMC may vary according to the nature of the conflict. OPAPP provides technical and financial support and has no membership in the committees, likewise the tribal elders who maintain a lead role in active negotiations.

The CMCs' tasks include coordinating the conflict management and resolution process; implementing identified critical interventions; convening meetings and consultations; guaranteeing mobilisation and full participation of all parties to the conflict during negotiations; ensuring and facilitating compliance with agreements or resolutions made; recording, consolidating outputs of meetings and consultations; and maintaining records and documents used during the negotiation processes.

The Balbalan Case

In 1966, Republic Act 5695

subdivided the Mountain Province into four provinces, one of which included both Kalinga and Apayao. In 1992, by virtue of Republic Act 7878, the former became a separate province with eight municipalities: Balbalan, Pasil, Lubuagan, Pinukpuk, Rizal, Tabuk, Tanudan and Tinglayan. Administrative boundaries of the single municipalities were mapped, neither undergoing a proper consultative process nor considering local cultural and environmental settings.

Kalinga is located centrally in the Cordillera Region and features a rough mountainous terrain with still pristine forests. Balbalan encompasses the Balbalasang-Balbalan National Park, which is considered, from a biodiversity point of view, one of the most interesting sites in Northern Luzon. The Park, covering a total area of 1,338 ha, was established in 1972 and proclaimed in 1974. Its expansion to approximately 16,700 ha and its conversion into a Natural Biotic Area is being considered by the Department of Environment and Natural Resources (Lepiten-Tabao *et al.* 2001). The Park falls within the ancestral domain of the Balbalan Municipality, which covers a total land area of 533[5] km^2, subdivided into 14 smaller administrative units (barangays). It is home to the Kalinga ethno-linguistic group, specifically to seven subgroups: Banao, Buaya, Daoangan, Mabaca, Gubang, Poswoy and Salegseg.

Over the centuries, the social characteristics among Kalinga peoples have been shaped by the harsh

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[3] Memorandum Order No.15 Series 1998, of DENR Sec. Antonio H. Cerilles instructed field offices of DENR to stop processing and issuing CADCs and CALCs.
[4] On January 4, 2001, the Philippine Department of Environment and Natural Resources institutionalized P3DM, by virtue of Memorandum Circular No. 1, S. 2001, as a process to be adopted in protected area planning and sustainable natural resource management.
[5] 679 after the boundary conflict resolution process, which has involved adjacent municipalities.

mountainous environment, isolation due to poor communications, strong cultural identity and the desire to maintain independence from central rule.

Traditionally, disputes among neighbouring villages or ethno-linguistic groups have been governed by peace pacts (*bodong*). Fundamentally, the *bodong* is a written bilateral agreement defining inter-tribal relationships that minimizes traditional warfare and serves as a mechanism for the initiation, renewal, maintenance and re-enforcement of social ties. In recent years, the *bodong* system has been expanded into a multi-lateral peace pact to foster unity in the Cordilleras.

Peace pacts were and are developed by individuals who carry the responsibility of their implementation on behalf of the group they represent. The agreements define physical boundaries between the economic and cultural domains of the signatories and lay out by-laws governing infringements in the use and access to resources, personal security and belongings. Boundaries are mainly described and occasionally depicted by supporting sketch maps.

According to precise rules, the responsibilities attached to the pacts are inherited by a close kin upon the death of the holder. Being passed on from generation to generation, the pacts have to be regularly renewed to maintain a common understanding of boundaries, rules and by-laws. In addition, their renewal or "warming up" involves a revision and re-negotiation of their provisions. In some cases, a *bodong* becomes "dormant" if upon the death or departure of the holder, it has not been properly transfered, thus setting the basis for disputes.

A number of concurrent factors contributed to escalating boundary conflicts. These include the assimilation of the municipality into a centralized institutional framework with consequent (top-down) setting of administrative boundaries and as-

sociated allocation of Internal Revenue Allotments[6] (IRA), development pressures linked to the discovery of mineral deposits and geo-thermal resources, and the increasingly perceived value of water as a finite resource.

The Conflict Resolution Process

The process started in August 1999 with an internal Conflict Management Assessment (CMA) that led, through the active participation of all concerned parties, to the identification of the conflicts, their causes and the common benefits which would derive from their solution (OPAPP, 1999). Balbalan representatives identified 18 boundary conflicts, involving seven different ethno-linguistic groups, 14 barangays and three municipalities (**Figure 1**), and defined *conflict* as "the absence of peace, personal or social, with violent or cold manifestations brought about by, but not limited to the following (OPPAP,2001a):

- Violations of the *bodong* and/ or its elements;
- Infringement of personal rights;
- Theft;
- Inter-personal, inter-family or clan, inter-village and inter-group differences;
- Unclear, ambiguous or unknown administrative boundaries;
- Issuance of dubious or inappropriate tenurial instruments;
- Development aggression by government and private entities; and
- Ideological differences.

Cross-cutting benefits from a clear definition of the administrative boundaries would include the possibility of pursuing the conversion of the CADC into a proper Title (CADT) and ease in preparing Barangay and Municipal Development Plans to access development funds.

Most issues were intertwined and analysis would show that conflicts

were largely categorized into the following:

The CMC agreed that OPAPP's assistance would focus on external or inter-municipal conflicts, while local government units would handle inter-tribal and inter-barangay conflicts.

Conflict	Issues
Inter-tribal	Resource use, tribal disagreements, cultural boundaries.
Inter-barangay	Administrative boundaries, resource use and access, internal revenue allotment (IRA).
Inter-municipal/ provincial	Administrative boundaries, resource use and access, internal revenue allotment (IRA).

Unlike those in other municipalities, the CMC in Balbalan decided to address barangay conflicts simultaneously.

Toward the end of year 1999, almost all inter-barangay conflicts appeared to be settled while the inter-barangay/municipal conflicts remained open. These included the following:

1. Banao Peoples (Barangays Balbalan, Balbalasang, Talalang and Pantikian) *versus* Balatoc Peoples (Barangay Balatoc, Pasil Municipality);
2. Mabaca Peoples (Barangay Tawang) *versus* Daga People (Barangay Daga, Conner Municipality);
3. Poswoy Peoples (Barangay Ab-abaan) *versus* Limos People (Barangay Limos, Pinukpuk Municipality).

Most conflicts focused on resource use and access and were "resolved" by updating existing

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[6] IRA is allocated to each administrative unit on the basis of three criteria having different weights: population (50%), land area (25%) and equal sharing (25%).

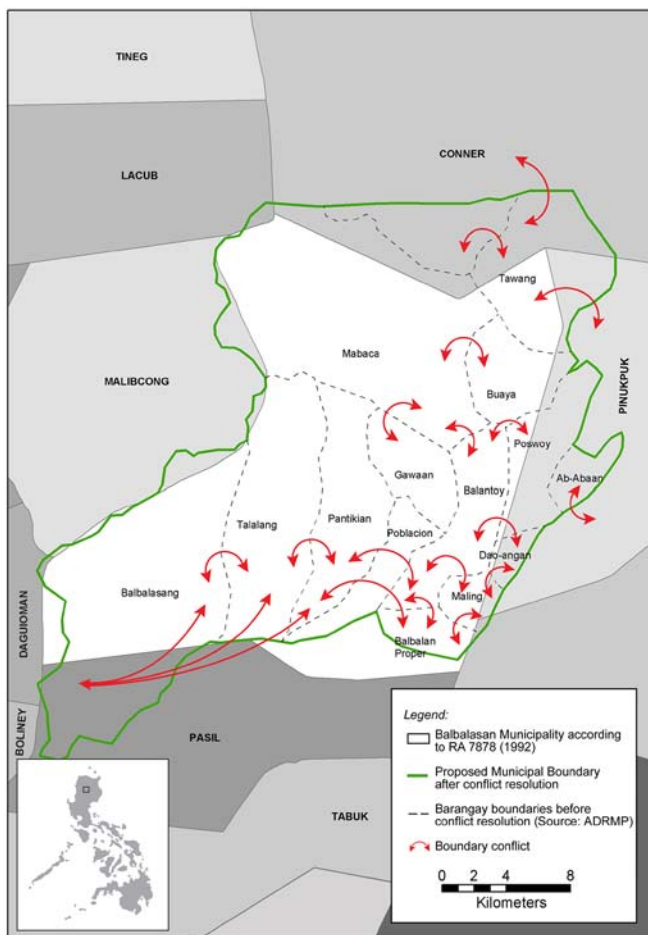[7] A MOA was signed between Banao and Balatoc Peoples, but it was contested soon after.

Figure 1. 1999 (disputed) boundaries

Figure 2. 2002 negotiated boundaries (preliminary outlining)

peace pacts and attached sketch maps, and signing Memoranda of Agreement[8] (MOA) specifically dealing with a description of the boundaries, but in the absence of supporting geo-referenced information like sufficiently large-scaled maps or aerial photography.

There was little follow-up in the first part of year 2000 due to the transition from the Estrada to the Arroyo Administration. Activities resumed during the second semester with the organisation of a municipal-wide participatory 3-D modelling exercise designed for land use planning, Ancestral Domain Resource Management Plan preparation, as well as for the verification of details, including locations, landmarks and boundaries of existing peace agreements. In addition, the model was to be tested as a vehicle for conflict resolution for the pending cases.

The Participatory 3-D Model

The exercise started in November 2000. Participants from all 14 administrative units and including all Barangay Captains[9] constructed a 1:5,000-scale geo-referenced model covering an area of approximately 70,000 hectares.

Contours for the area were obtained from maps produced by the National Mapping and Resource Information Authority and blown up to the desired scale. Local participants traced the single contour lines on rubber sheets, cut them out and pasted them one on top of each other thus forming the scaled relief of the entire municipality.

Land use and cover, settlement and a number of other features were depicted at a later stage based on the individual cognitive maps of the participants. In doing so, data including names of features were discussed and agreed upon.

It is important to recall that the

different ethno-linguistic groups would use dissimilar names for the same landmark, whether it was a creek, river, peak, hill, or others. In providing a common vantage point, the model has offered, for the first time, an opportunity for all concerned groups to level off their understanding of the territory.

The accurate 3-dimensional depiction of terrain, land use and vegetation cover and common denominations used for selected landmarks, served as basis to countercheck the earlier signed MOAs and Peace Pacts, with regard to the outlining of boundaries.

At planned intervals, pact holders and confronting groups gathered around the model, learned on a common ground, and negotiated

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[8] The MOA has been conceived as a modern version of a peace pact, but is limited to the description of the outlining of the boundaries and does not include by-laws.

[9] Barangay Captains are elected representatives of the barangay. They are political leaders.

Figure 3. Boundary delineations described in the MOA and Peace Pacts are verified with the use of the 3-D Model

(**Figure 3**). Boundaries were visualised by colour-coded yarns, a flexible coding means able to accommodate endless adjustments.

In trying to display the boundaries as described in the MOA and peace pacts signed one year earlier, new disputes surfaced. Some were settled amicably by negotiating the position of the boundary (visualised on the model by a yarn) and in consequently updating MOAs; others triggered new confrontations.

Initial negotiations were held by the Barangay Captains but final agreements on boundary outlining had to be validated and endorsed by the Elders (**Figure 4**).

Conflicts evolved along different pathways.

The boundary dispute between the Banao and Balatoc Peoples heated up and three attempts were made by the CMC to settle the conflict in 2001. At that point, the tribes were on war footing, although

Figure 4. Elders representing opposing groups in discussion.

there was no actual eruption of violence. Negotiations, revolving around the 3-D model as a spatial reference, continued in 2002. In April, the process came to a fruitful conclusion, and the MOA and the peace pact were signed.

One (minor) pending case is the boundary dispute between Barangay Mabaca and Barangay Buaya. In this case, one Barangay Captain failed to accept the revised bound-

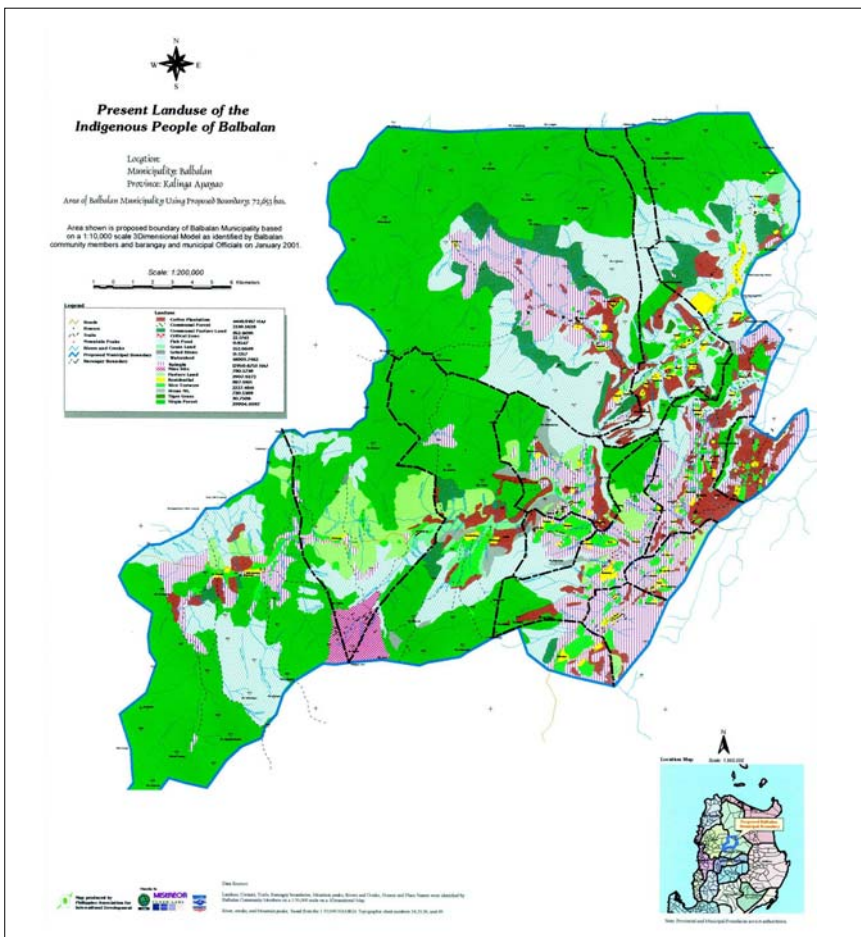Figure 5. Contending parties shaking hands as a sign of reconciliation

Figure 6. Land Use and Land Cover Map derived from the 1:5,000-scale 3-D Model (Source: PAFID, 2002)

will be responsible for their identification during the forthcoming ground survey.

This final act, which will conclude the peace process, will be conducted with the assistance of a licensed geodetic engineer as spelled out in a recent Administrative Order (AO) issued by the National Commission on Indigenous Peoples (NCIP) (NCIP, 2002). The fact that the elders and the barangay captains already defined a survey plan represents a reasonable guarantee for the respect of the right to self-delineation enshrined in the provisions of the IPRA law.

Derived Maps

In collaboration with the local communities, the data depicted on the 3-D model have been extracted and imported into a GIS environment. Thematic maps have been produced and validated by the different groups.

The model and derived maps (**Figure 6**) will be used to prepare Barangay and Municipal Development Plans and to update the 1999 Ancestral Domain Resource Management Plan. The latter may include the proposal for the establishment of an Ancestral Domain Park in lieu of the existing National Park. In addition, the maps will be attached to memoranda and peace pacts.

The Role of the 3-D model in the Negotiating Process

Adding a shared perspective and common language

Different opinions are frequently based on different perspectives and the quality of the media used to communicate. Cases in point are the conflicts in Balbalan. Their origin is fundamentally territorial and relates specifically to boundaries that have been agreed upon by Elders and handed over from generation to generation as written documents with an oral descriptive support. The

ary that has been endorsed by the Elders. As shown on **Figure 2**, the case is still pending.

For the remaining cases, the outlining of barangay and municipal boundaries has been agreed

upon by all contending parties.

In support of the data displayed on the 3-D model, the voluminous process documentation includes the description of the boundary corners and the names of the individuals who

visualizing instruments at hand were at best sketch maps.

The municipality maintained the same visualising pattern in dealing with the settlements of most disputes during the year 1999 as testified by the Ancestral Domain Resource Management Plan comprising 28 sketch maps. Due to the lack of specificity and geographic accuracy and leaving considerable space for subjective interpretation, the settlements appeared to be short-lived once confronted with the holistic and geo-referenced perspective offered by the 3-D model, which effectively established a common vantage point for understanding the territory.

Through the use of the relief model, it became apparent that diverse ethno-linguistic groups were using different names for natural landmarks, like creeks and peaks. Residents of different locations would construe "the boundary running along the highest mountain" depending on their own viewpoint. Different denominations and interpretations of landmarks and features were ineluctably sources of disagreement.

When a process is geared towards addressing conflicts bound to the territory, communication systems are essential ingredients to provide all parties with equal access to information in order to develop a common understanding of the issues at stake. When language barriers like the ones existing among the Elders of different ethno-linguistic groups in the Cordillera do represent an additional constraint, information exchange best occurs via *visual* communication based on colour, shape and texture, like in a 3-D model.

In such context, there is no doubt that the third dimension and the holistic view offered by the relief model have been key factors in facilitating the consolidation of the negotiation process: there were only one highest mountain and one creek *so-and-so* to be *named, seen, felt and touched* by all concerned.

Enhancing learning capacity and the power of mind

Spatial knowledge develops in humans through three progressive stages including landmark, route and survey knowledge. The first one refers to the capacity of memorizing places in relation to an event; the second, to developing the sense of ordered sequences of landmarks. The last and more progressed stage is the one where the knowledge simultaneously embraces more locations, their interrelations and allows for detouring, shortcutting and creative navigation (Montello, 1997). This is the learning itinerary undertaken by informants depicting the landscape on a blank relief model. At first, they look for landmarks to establish their physical location *vis-à-vis* the model. In a few minutes they are able to locate themselves and/or their households, and to establish spatial relationships between different landmarks (**Figure 7**). Once this is done, informants will link the model to the real world and be in the position to precisely depict their mental representation of space.

Experiences gained in Balbalan and in other places, where participatory 3-D modelling has been used, have shown that when informants are provided with a blank relief model instead of a blank contour map or a blank sheet of paper, they can easily depict their spatial knowledge in a scaled, geo-referenced manner and add a lot of precise details. The fact that relief models facilitate scaling allows for filling in information more fully and accurately on a given area. This facilitates a precise and comprehensive understanding of the entire landscape. This is not the case in sketch mapping, a practice traditionally used to substantiate the descriptive portions of peace pacts and widely adopted in the context of participatory development. The difference between a blank contour map and the corresponding relief model is the physical vertical dimension, which provides essential cues for stimulating memory and for establishing spatial associations.

In addition, by providing a bird's eye view, and by accommodating different layers of information[10], the relief model has contributed to widening the participants' evaluative frame of reference on spatially

Figure 7. Discovery learning

Photos by Dave de Vera

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[10] Thanks to the variety of coding means (paint, yarns and pins) a 3-D model, can accommodate overlapping layers of information like, for example, "land use" and "land tenure" depicted by colour-coded paints and yarns respectively.

defined issues, and thus stimulated active learning and analysis. In other words, it has helped participants in understanding ecological and social dynamics going beyond their individual cognitive boundaries.

Increasing access to information and adding transparency

Success of a negotiation process frequently depends on providing concerned parties with open access to information. For conflicts bound to the territory like the one in Balbalan, the 3-D model has offered for the first time a comprehensive, detailed visual representation of the entire territory of the municipality and bordering barangays, therefore adding transparency to the process and reducing the space for subjective interpretations (**Figure 8**).

Deciding on what is relevant

A 3-D model is meant to distinguish the territory with the use of coded polygons, lines and points. Each feature needs to be identified, defined and associated to a particular symbol. All these symbols and their descriptions are summarised in the form of a map key or legend, which is the graphic vocabulary that allows users to decode and interpret displayed data. The preparation of the legend, particularly the listing and description of the different items, is a key factor that determines the usefulness of the model as a communication means and the final intellectual ownership of the output.

In the case of Balbalan, the legend includes 23 different features, all of which have been identified and defined by the participants according to commonly agreed criteria and most importantly according to what the different groups perceived as relevant, making the "vocabulary" of the medium open and transparent.

Peer-to-peer communication with the outside world

In order to translate cognitive

Figure 8. Added transparency

maps into high quality geo-referenced information, P3DM has been integrated with GIS and GPS. This has brought about the reproduction of people's knowledge in a *cartographic, mobile and reproducible* format accepted at institutional levels as part of a negotiation process.

In the Philippines, the concurrence of such technical elements, the existence of a favourable regulatory framework – from which the Balbalan case has been benefiting - and a supportive NGO advocacy, have been instrumental to improving the capacity of communities to interact with national and international institutions and finally to induce substantial nationwide change[11] in terms of resource allocation and management.

Additional Factors which Contributed to the Negotiation Process

The capacity for accommodating change

It is worth recalling that an interactive process involving 3-D modelling may set the basis for constructive action but that it may also be instrumental in making latent conflicts explicit. Therefore, it is impor-

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[11] As of June 1998, 181 Certificates of Ancestral Domain Claim, covering 8.5% of the Philippines, have been awarded to Indigenous People.

tant that the process – like in the case of Balbalan - be carefully prepared, well managed and embedded in a long-lasting, articulated intervention, in the position to deal with follow-up arrangements to accommodate new realities emerging from the process (Leeuwis *et al.*, 2001).

Building on underlying needs

The identification of underlying factors that could stimulate a consensual resolution of conflicts, is extremely important. Fundamentally, these are stalled situations, which would take advantage from the solution of the conflict. The benefits deriving from the settlement would over-ride the trade-offs necessary for its achievement. In the case of Balbalan, there are two such important factors. The long-lasting boundary disputes hampered the single administrations from preparing proper development plans hence accessing funds for their implementation; and the absence of boundary conflicts is a pre-requisite for converting the existing Certificate of Ancestral Domain *Claim* into a proper *Title* (CADT).

Third-party and mutual trust

One determining factor in the process has been the composition of the mediating body including OPAPP, experienced NGOs, Church and Local Government Units and in some cases neutral ethno-linguistic groups, and the rapport these parties have developed with the contenders. Only once sufficient trust, effective communication and transparency (please refer to previous paragraphs) have been developed could collaborative negotiations start and lead to better anchored, likely stable solutions.

Traditional mechanisms

Last but not the least is the fact that the process has evolved along traditional conflict-resolution patterns, leaving the chief negotiating role in the hands of the elders and maintaining the traditional *bodong* as an integral component of the final settlement.

Conclusions

This preliminary assessment of the Balbalan case indicates that the use of a 1:5,000-scale relief model, encompassing the entire municipality and portions of the neighbouring municipalities, has been instrumental in facilitating a series of consensual conflict resolution processes. Almost all have led to potentially stable solutions, anchored on *objectively verifiable, geo-referenced* sources, including a 3-D model, derived map and the technical descriptions that will be produced by the forthcoming ground survey.

In the light of growing development pressures, agreements making use of sketch maps and non-technical descriptions appear to be short-lived because these are prone to subjective interpretations.

In addition, the model has contributed to improving communication by creating a shared vantage point and a common visual vocabulary, thus bridging communication barriers due to different perspectives and spoken languages.

Final Note

In the framework of the Integrated Conflict Resolution and Management Programme, OPAPP now supports the construction of Participatory 3-D models in other municipalities in the Cordillera.■

Giacomo Rambaldi and **Sahlee Bugna** *work as Information Communication Advisor and writer/researcher respectively at the ASEAN Regional Centre for Biodiversity Conservation.* **Angela Tiangco** *is the Cordillera Peace Program Officer at the Office of the Presidential Advisor for Peace Process and* **Dave de Vera** *is the Executive Director of the Philippine Association for Inter-Cultural Development (PAFID). All are based in the Philippines.*

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