

ForDev, CIFOR, CIRAD and FundSI - Mission report

TICOYA: Collaborative models for legal and sustainable hunting and trade among indigenous communities in the Amazon, Colombia.

Between the 12th and the 16th of November 2014, CIFOR (Centre for International Forestry Research), Fundación SI (Science International, Bogotá) and ForDev (Forest Management and Development group - ETH Zurich/CIRAD) started mapping the hunting territories in Puerto Nariño and explored the concept of sustainable management of natural resources with the indigenous communities through the use of role-playing games.

The ForDev group was invited by the project leaders to present their work at the Research Institute of Biological Resources Alexander von Humboldt in Bogotá. Dr. Claude Garcia gave a talk on “*Scenarios, games and strategies: participatory modeling and multi-actors managing of natural resources*” - <http://fr.slideshare.net/claudioantoniojarcia/fronteras-y-juegos-bogota-garcia-2014>.



Figure 1 The hunting path connecting the communities of Puerto Nariño and San Martín (Amazonas, Colombia).
C. Garcia.

Field activities started in the department of Amazonas, both in the urban center of Leticia and in the village of Puerto Nariño. The mission aimed at setting up the basis for the fieldwork in the Ticoya indigenous reserve and ascertaining the possibility of using role-playing games as tools to explore scenarios of management of natural resource.

The team started the GIS mapping of the hunting territory (Fig. 1) and organized two focus group discussion on the definition of management using the ReHab game as support for the discussions (Le Page et al., 2014).

The game resolves around the management of a resource distributed in a landscape (a grid of 5*4 cells) and imbued with internal renewal dynamics. Players are either Clan Leaders sending harvesters to collect the resource in order to feed their families, or Park Managers seeking to maximize the reproduction of a migratory bird nesting in the landscape, and sensitive to human disturbance. The situation creates a two-fold tension: villagers need to learn how to harvest and share the resource in a sustainable way, and the villagers and park managers need to resolve their apparently conflicting agendas. Each game is played in two scenarios (same rules, but time for negotiation given in the second scenario), with a debriefing in between.

In the first session (13/11/2014) hunters and community members of Puerto Nariño (10 persons - Fig 2) went through a phase of over-harvesting and resource hoarding, with a slow depletion of the resource base and a complete failure of reproduction of the migratory bird.

When given time to negotiate and prompted with information to consider the trends, they managed to secure agreements to adjust the harvest levels, and respect the protected areas delineated by the Park Managers. The results of these agreements and of their compliance were a recovery of the resource base, a

reduction in inequalities among villagers and a moderate success in bird reproduction rates – in effect an improvement over the first scenario on all counts.

The same game was used in the following day with students and professors of the Amazonian Institute of Research (IMANI) of the National University of Colombia in Leticia (Figure 3). In that case, despite being aware of the trends, having time for discussion and negotiation did not improve the final result – suggesting that information and communication between stakeholders are not sufficient to resolve the trade-offs between conservation and development.

The game sessions ended with a collective debriefing on the concepts of management and sustainability, and on the elements required to sustainably manage a natural resource. Despite its simplicity and abstraction, the socio-ecological system represented in the ReHab game allows exploring these concepts and involving the stakeholders in the research process, through experiential learning. The successful ReHab session in Puerto Nariño is prompting the team to organize additional sessions in other communities of the Ticoya reserve, applying a standardized protocol to generate a locally meaningful and evidence based definition of management.

We have formulated a PhD project to develop this concept further, and co-design - together with all relevant stakeholders – models of wildlife management and hunting in the Ticoya indigenous reserve. Such models would include dynamics of hunting, land use, zoonotic diseases and animal populations. They could be used to explore, through gaming and simulation, alternative governance regimes, the individual coping strategies of the hunters and the responses of the ecosystem, and in turn inform management.

Bibliography

Le Page, C., Dray, A., Perez, P. and Garcia, C. (2014) "Can Communication Save The Commons? Lessons From Repeated Role-Playing Game Sessions." *The Shift From Teaching To Learning: Individual, Collective and Organizational Learning Through Gaming Simulation.*, pp 365-79. Wbv, Bielefeld.



Figure 2: Rehab session in the indigenous reserve Ticoya . D. Cruz-Antia



Figure 3: Rehab session in the NUC in Leticia. N. Ponta