

Project SN-4

**Information and Communications for
Rural Communities Project**

(InforCom Project)

Annual Report 2004

Section 2: Planning for Rural Development

Abstract

This year, the Rural Planning Group consolidated its case studies in Colombia, Bolivia, and Senegal, using methods and tools often developed by the Group itself. To transfer lessons learned, training was given to partners, both within and outside the case studies. For Colombia, the ongoing work funded through the agreement with the Ministry of Agriculture and Rural Development has expanded in geographic coverage and is complemented through agreements with the Colombian Institute of Rural Development (in collaboration with CIAT's Rural Agroenterprise Development and Land Use projects) and the Colombian Oil-Palm Research Center (in collaboration with CIAT's TSBF Institute). In Bolivia, case studies and national capacity building are being conducted in collaboration with the Vice Ministry for Sustainable Development and Planning, the Land-Use Planning Unit, and the Council for Population Sustainable Development. In Senegal, capacity building and stakeholder participation for ICRISAT's Desert Margins Program is being conducted by involving scientists in the monitoring and evaluation of the local development plans of several rural communities. Collaboration with the Andean Watersheds Project has allowed us to continue our involvement in last year's case studies in Peru through two training courses, and to contribute to a training course on land-use planning for the La Miel Watershed in Colombia. A Web page, describing the activities in all these countries, has been launched and the listserver of the Rural Planning Network continues to be used for sharing information.

Introduction

The Rural Planning Group aims to assist local stakeholders to use information for managing their natural resources by providing methods, tools, documented examples, and principles (or insights) that would help bring about successful planning, monitoring, and evaluation. Land-use administrations, institutions, and stakeholder groups can use planning, monitoring, and evaluation as mechanisms for rural development. Scientists and information providers can use them as entry points into development.

This work began in 1999 as the land use component of the agreement between CIAT and the Ministry of Agriculture and Rural Development (MADR, its Spanish acronym). Last year, it was made part of the InforCom Project and has since seen the addition of case studies in Bolivia, Peru, and Senegal. Methods and tools are developed through case studies in specific locations, and are then diffused through training events, seminars, reports, and publications, as well as through the CIAT Web page.

We are promoting a systems approach to planning, monitoring, and evaluation. In itself, this approach is not fundamentally new, as many aspects of rural development have been approached systematically for decades.

However, the actual practice of planning, monitoring, and evaluation by land-use administrations and institutions can be considerably improved. We are convinced that the link between information providers, scientists, and national institutions on the one hand, and local players of rural development on the other, can be greatly improved through the involvement of the former in the planning, monitoring, and evaluation by the latter. But for this link to be possible, the practices of planning, monitoring, and evaluation through existing and legally imposed mechanisms need to be improved substantially. We are convinced that such improvement is unlikely to occur only through using specific methods; it also requires changes in the logic with which planning is approached. We are convinced that a systems approach to planning, with a learning perspective, can help bring about change in attitude. If the process of learning is well engaged, information (in a variety of formats, including decision-support tools) will be sought and used more effectively.

Although we are convinced of the relevance of such an approach, we must demonstrate it scientifically. Through our case studies, we aim to validate a series of hypotheses, which are as follows:

- Planning, where groups engage in a continuous process of diagnosis, activity planning, and monitoring and evaluation, can greatly improve local learning, rural innovation, social capital, and the capacity of rural populations to adapt to adverse or changing conditions. This may seem obvious, but seeing how few consistent processes of planning are implemented, we think this hypothesis is worth being demonstrated.
- Many of the obstacles related to planning in a political context result from an inadequate sense of responsibility on the part of leaders and citizens, or are related to counterproductive logic, such as looking at issues with a “winners and losers” perspective, being obsessed with growth (either economic, social, or emotional) at the detriment of the group’s well-being, the quest for quick and easy gain, a dependence on assistance, or a focus that is too short term or too confined to certain economic sectors. These can be strongly moderated by adopting a logic of progression towards long-term and collective goals. This logic can be developed in planning workshops where participants discuss their desired future conditions, their possible contributions, and the contributions they need from other players (or demands).
- During diagnosis, monitoring, and evaluation, information is not used optimally if participants and planners do not have a clear idea of their desired future conditions. Clearly stating these allows indicators to be defined, and provides a reference with which to compare observed conditions. In their absence, diagnosis and monitoring remain purely descriptive, not allowing judgment, and thus reducing the possibilities of learning in the process. Data becomes accumulated without ever being used for decision making.

- Different hierarchical levels of territorial administration can improve the coordination of their development efforts by articulating the various “contributions” and “demands” of the players from one level to the next, from bottom up. This approach can be used to articulate municipal plans at the departmental level, and departmental plans at the national level.

Case studies

Colombia

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The work in Colombia is funded through three separate agreements with (1) MADR; (2) the Colombian Institute of Rural Development (INCODER); and (3) the Colombian Oil-Palm Research Center (CENIPALMA).

INCODER is managed by MADR. Under the agreement with MADR, we dedicate a significant part of the funds to reinforcing activities stipulated in the INCODER Agreement. Through this latter agreement, we aim to help INCODER plan rural development programs in four Areas for Rural Development (ARDs). These areas are defined as homogenous geographic units that can be used as units for land-use planning. INCODER’s GIS Unit has identified about 130 of these areas in Colombia, of which 15 were chosen for use as pilot sites for planning.

Three other institutions—IICA, CEGA, and CORPOICA—have also been engaged, through agreements, to help INCODER with the same planning exercises in the other areas. We are therefore participating in a giant planning exercise where different institutions are using different methodologies in different locations and, through workshops, sharing their results and lessons learned. The four ARDs relevant to CIAT encompass several municipalities within the Departments of Magdalena, Valle del Cauca, Guaviare, and Meta, as listed below:

<i>Department</i>	<i>Municipalities making up an Area for Rural Development</i>
Magdalena	El Banco, Guamal, San Sebastián, San Zenón, Pinto, Pijiño del Carmén, Santa Ana

Valle del Cauca	Florida, Pradera, Palmira, Candelaria, Ginebra, El Cerrito, Guacarí
Guaviare	Parts of the municipalities of San José, Calamar, and El Retorno that are found within the Farming Reserve and therefore do not lie within the forest reserve that otherwise covers the entire Department
Meta	Puerto Gaitán, Puerto López

The work with INCODER will finish in December 2004, after which a series of reports, programs, and projects will be published. If necessary, adjustments will be made in January and February 2005. The expected results are:

1. The participatory formulation of a rural development program for each ARD, which involves social, economic, and environmental dimensions
2. The inclusion of a portfolio of projects that will help bring about the future conditions as desired by rural communities
3. The consensual choice of one project from the portfolio, called a “region-project” or “axis-project”, it will be developed with a “ready to implement” formulation

Highlights of the work conducted with INCODER so far include:

- Two planning workshops that were conducted in each of the ARDs mentioned above. The first workshop defined the basis of a “Rural Development Program”, and the second focused on the short-term efforts of a specific project where INCODER could contribute logistically and financially
- A training event was organized in each of the four ARDs, covering the themes of participatory planning, agroenterprise development, and GIS

Within the work plan made in collaboration with INCODER, training was given to local development actors to give them the technical bases for supporting the planning exercises and to help them in other projects. The training was divided into three themes:

1. Tools and methodologies for participatory land-use planning (i.e., the Visions–Actions–Demands (VAD) method, and the HePP and SEGUIMIENTO tools
2. Decision-support tools (DSTs) with spatial analysis (cartography and MapMaker).

3. Agroenterprise management approaches (production chains, market studies, and business plans)



Workshop on “Towards the formulation of a rural development program”, held in San José del Guaviare, Colombia, 29 July 2004

For the MADR Agreement, we are following up planning exercises conducted in the Municipality of Puerto López and its rural communities. As mentioned above, these form part of the ARD in the Department of Meta. Highlights of both the work conducted in Puerto López and the follow-up of work previously carried out in Meta include the following:

- An agreement was made with the Government of Meta to develop the “Plan for Developing the Altillanura” together with the “Rural Development Program” for the Meta ARD, which itself will be developed with INCODER
- Cassava trials by the CIAT’s Cassava Improvement Project have continued in the rural community of Puerto Guadalupe and were established in the Humapo Indigenous Reserve. Both these sites have agricultural high schools
- The agricultural high schools of Puerto Guadalupe and Humapo have set aside land for production and experimentation. Discussions were held with CIAT’s Tropical Forages and Beans Projects to conduct trials at these two colleges, together with those of the Cassava Improvement Project

Bolivia

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[VMDSP]; Rene Pereira (Council for Population for Sustainable Development [CODEPO] of VMDSP), Jaime Montano and Sandra Garfias CODEPO of VMDSP); Andrés Uzeda (Institute of Social and Economic Studies [IESE] of the Universidad Mayor de San Simón [UMSS]), Fernando Antezana (Center for Planning and Administration [CEPLAG] of UMSS); Alfredo Antezana (Manager, Association of the Municipalities of Cono Sur); Bertha Gozalvez <<please check spelling>> (Director, Institute of Geographic Research of UMSA); Elise Riondel and Juan Cuentas (students)

Our work in Bolivia is funded by IRD grant no. UMR-151, CIAT, and the Bolivian VMDSP. Since 1994, the Bolivian laws of popular participation and decentralization provide municipalities with responsibilities and financial resources to administer their territory. Land-use planning as such is the object of a normative and methodological framework defined by the Bolivian Directorate General of Land-Use Planning. Since 1996, departmental administrations have prepared land use plans, known as *Planes de Uso del Suelo* (PLUS). They represent agroecological zoning, but lack relevance for planning and preparing development policy.

Just recently, some municipalities started the same process, although most of these plans are prepared by external organizations or consultants and are not effectively used, first because they do not correspond to population needs and, second, because municipal technicians find them difficult to understand. In addition, the methodology used for land-use planning is based almost exclusively on biophysical parameters used to establish a balance of use of the land's potential. Our work in Bolivia therefore aims to engage institutions in charge of participatory planning in a learning process.

We are also aiming to develop, jointly with these institutions, a set of regionally adaptable guidelines for participatory land-use planning that can be used for municipalities, associations of municipalities, or departments so they may articulate their activities in various economic sectors, and integrate local and regional development projects.

Methodological collaborations have been initiated with the UOT, which is oriented towards biophysical considerations, and CODEPO, which establishes demographic policies. As explained in the *Introduction*, the case studies were conducted to ensure that the proposed guidelines were adapted to the Bolivian context. Contrasting sites were chosen to allow Bolivian diversity to be taken into account. As in the other countries, these case studies will also yield examples that will be communicated throughout Bolivia, and will provide opportunities for testing our research hypotheses. Highlights of our activities in Bolivia this year are:

- Continuous seminars have been organized between CIAT, UOT, and the Ministry of Strategic Planning and Popular Participation to redefine the methodology for land-use planning. A methodological

guidebook is to be published before the end of 2004 so municipalities may prepare land-use and development plans (PMOTs and PDMs) in 2005.

- In collaboration with the respective institutions, we have begun elaborating municipal land-use and development plans in three zones of Bolivia: Calamarca and the Lipez Association of Municipalities (high plains zone), the Association of the Municipalities of Cono Sur (13 municipalities in the valley zone), and the Association of the Municipalities of Pando (AMDEPANDO, tropical zone). The plan for Calamarca will be finished in October 2004 and will be used as the basis of a synthesis document on a new land-use planning method for Bolivia. For the other zones, dialogue has begun but the actual fieldwork will begin only in 2005, after the municipal elections in December 2004.
- In the Municipality of Pojo (Association of the Municipalities of Cono Sur), we began a planning program with various communities to encourage innovation in water management. Through close collaboration with a farmers' association, we developed two project proposals that were presented for funding to the International Land Coalition (ILC) in Rome and to Electricité sans frontières in France. The project was entirely managed by the farmers, without intervention from the municipal administration or NGOs. The farmers responded very well, showing high innovation capacity. The projects will continue in 2005 with the construction of an 8-km channel for irrigation and of a small electricity-generating station. The Association will also prepare plans for land use and local development (POTs and PDLs) with the new municipal administration, and a training program. The results of this experience will be published in a book.
- CIAT, CODEPO, and the Ministry of Strategic Planning and Popular Participation, with support from the French Embassy in Bolivia, organized a national conference on land-use policies and planning for land management. The conference was held in La Paz on 24–25 June 2004. At this conference, the Vice Minister redefined the 2004–2007 agenda to strengthen planning for development and the fight against poverty (PFPD, <<couldn't verify>> its Spanish acronym). The agenda was later presented on 9 September 2004.
- The same conference was held again in Cochabamba on 21–22 October, organized by the Prefecture of Cochabamba, CIAT, the College of Architects of Peru, and CESU (UMSS). At this conference, we prepared a working agenda to implement, in this Department, the Vice Minister's new strategy for strengthening planning for development.

Agreements signed or being drawn up with:

The Vice Ministry for Sustainable Development and Planning through the:

- Land-Use Planning Unit (UOT); an agreement was signed in 2003
- Council for Population for Sustainable Development (CODEPO); an agreement is being drawn up. CODEPO would be the host institution for this work

Universities:

- IESE and CEPLAG at the Universidad Mayor de San Simón (at Cochabamba); an agreement is being drawn up
- Faculty of Geography at the Universidad Mayor de San Andrés (at La Paz); an agreement is signed with IRD
- Universidad Amazónica de Pando (at Cobija); an agreement on development **has been drawn up** <<add?>>

Grassroots organizations:

- Mayoral Office for Calamarca (conducting land-use planning with UOT)
- Association of the Municipalities of Cono Sur (Department of Cochabamba); an agreement is being drawn up
- Lipez Association of Municipalities (Department of Potosí); an agreement was made with UOT
- Association of the Municipalities of Pando (AMDEPANDO); 🚩 <<is anything missing?>>



National conference on “Land-use policies and planning for land management”, held in La Paz, Bolivia, 24–25 June 2004

Peru

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GTZ); Rubén Dario Estrada (CIP/CONDESAN); Edwin Pajares (Ecumenical Center for Social Promotion and Action [CEDEPAS]); Fanel Guevara (Social Management of Water and the Environment in Watersheds [GSAAC])

Work in Peru is funded by GTZ–Peru. The Peruvian Congress approved two new laws: in May 2003, the “Ley Orgánica de Municipalidades” (*Municipalities Law*), which defines the provincial and district responsibilities of municipalities; and, in October 2003, the “Reglamento de Acondicionamiento Territorial y Desarrollo Urbano” (*Regulation of Land Preparation and Urban Development*), where the municipality is responsible for promoting its own integrated, sustainable, and harmonious development. The municipality would be assisted by a local planning process that must be integrated, permanent, and participatory, and coordinated with the Government at regional and national levels. A variety of sectorial and multi-sectorial plans are required from the municipalities on a regular basis. Multi-sectorial plans include the “Development Plan”, the “Rural Urban Plan” for districts, and the “Land Preparation Plan” for provinces. Every year, the municipalities must also plan their budget on a participatory basis to result in a “participatory budget”.

The Andean Watersheds Project of CONDESAN and GTZ had identified the need to strengthen the capacity of professionals, community leaders, and decision makers to manage land-planning processes in several district and provincial municipalities located in the Project’s pilot watersheds. With this objective, the Project identified, based on the demands of its local partners, two sites where land planning that, not only responds to legal requirements, but also contributes to more equitable, integrated, and sustainable land use would be encouraged. The two pilot districts—Morropón and Lalaquiz—were chosen in the Province of Piura, northern Peru, together with another four—San Pablo, San Bernardino, Tumbaden, and San Luis—in the Province of San Pablo, located in the Jequetepeque watershed.

To initiate planning, two training courses were organized, one in the City of Piura and the other in San Pablo. Both were directed at professionals working on the theme, local authorities, representatives of primary and secondary educational centers, irrigation organizations, farmer organizations, and representatives of NGOs who work on development in the pilot sites. The first training workshop was held in December 2003 and the second in May 2004. Their objectives were to:

- Raise awareness of local stakeholders of the importance of land planning
- Transmit the conceptual and methodological bases so land planning can be started
- Discuss methodologies and instruments for land planning, using, as a management unit, a watershed and the municipalities it encompasses
- Plan the implementation, review, and articulation of land plans

Results:

- A commitment of district authorities, communities, and the Andean Watersheds Project to promote land planning during 2004
- A commitment from four district authorities, communities, CEDEPAS, and the Andean Watersheds Project to promote and formulate the province's Land Preparation Plan for 2004
- Conformation of work groups comprising representatives of the four districts that will work on specific aspects of land planning such as social, economic, biophysical, cultural, and health issues. These groups will collaborate in collecting information and identifying community demands. These will then be linked and integrated with analyses conducted by a technical group coordinated by CEDEPAS.



**Participants in the training workshop on
“Conceptual and Methodological Bases for
Land Planning”, held in San Pablo, Peru**



Group exercise on desired future conditions expressed in different dimensions, San Pablo, Peru

Senegal

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Work in Senegal is funded by GEF and is made possible by the posting of Nathalie Beaulieu at ISRA, and her inclusion in the team of ICRISAT's Desert Margins Program (DMP). The DMP aims to improve rural livelihoods by increasing the capacity of populations to manage their fragile environments in a sustainable way.

One objective is to improve knowledge on the existence and management of biodiversity and soil fertility. It started in 2003 and works in nine sub-Saharan countries: Senegal, Niger, Mali, Burkina Faso, Namibia, Kenya, South Africa, Zimbabwe, and Botswana. Two of its outputs are entitled "stakeholder participation" and "capacity building".

In Senegal, we have chosen to implement these outputs with community rural councils by monitoring and evaluating their local development plans. Rural communities can be seen as equivalent to municipalities as they can include various villages. The president and counselors of the rural council are democratically elected.

Local development plans are required by the Senegalese Law on Decentralization. Usually, they contain important components of managing natural resources, agriculture, forestry, and livestock. Improvement of soil fertility and biodiversity is, in many cases, explicitly expressed as an objective in these plans.

The DMP can contribute by providing training, documentation, seeds, and plant materials. The contributions will be planned through regular meetings with the rural council, development committee (which is in charge of monitoring the local development plan), union of farmer organizations, and federation of women's groups. Soil, crop, and livestock management, and plant and tree varieties can be experimented with by farmers, and their success evaluated in follow-up meetings. ICTs (Internet and telephone) can be used to communicate the rural communities' needs within a network of resource persons composed of rural extension agents and scientists.

The Senegalese component of the DMP is focused, for the first 2-year phase, on four regions of the country—Kaolak, Diourbel, Fatik, and Thiès. DMP and its partners chose 20 rural communities, five in each of the four regions. The working program for capacity building and stakeholder participation includes three monitoring and evaluation (M&E) meetings per year in each rural community and four regional training events where farmers from several rural communities participate. This adds up to a total of 60 M&E meetings and 16 training events per year. Extension agents of the National Agricultural and Rural Advisory Agency (ANCAR) will ensure follow-up between meetings and training events. The highlights of our activities in Senegal for this year are:

- With CIAT's Information Systems Unit, we finalized a French version of the "Expertise" software. We also ran a separate listserver for rapid communication between participants.
- Meetings were conducted in 15 rural communities. In two of these, we began monitoring local development plans and evaluating the progress of the components related to managing natural resources and agriculture. We therefore could identify specific needs of various rural communities, plan a series of training events, and distribute documentation and plant materials.
- Two training events, one on horticultural techniques and the other on forage conservation, were given in rural communities of northern and central Thiès.
- We analyzed satellite images (Landsat ETM+) of 2002 to prepare a map showing land use and potentially degraded land (i.e., areas that were bare or sparsely vegetated in both dry and wet seasons) in most of area covered by the Senegalese component of DMP. We may be able to measure variations in certain land quality indicators in the future.

We expect the monitoring process to be functioning in the 20 rural communities of the four regions by early 2005.



Ngandiouf, 22 June 2004, and Mbayène, 29 September 2004, respectively. The photographs show two meetings, held as part of a capacity-building approach on monitoring and evaluating the natural resources component of local development plans in Senegal

Further reading:

Beaulieu N. 2004. Rapport sur l'élaboration d'une carte d'occupation des sols de la région de Thiès à partir de deux images Landsat ETM+ acquises en 2004. CIAT; GeoMaps-Sénégal, Dakar, Senegal.

Beaulieu N; Tamba A. 2004. Rapport sur le renforcement des capacités et la participation des acteurs dans le cadre de la composante sénégalaise du programme d'action dans les marges du désert, Septembre 2003–Octobre 2004. Internal report, CIAT/ISRA, Dakar, Sénégal.

Methods and Information Tools Developed for Rural Planning

A series of tools and methods was “launched” last year as a result of the 1999–2003 Agreement with the Colombian Ministry of Agriculture and Rural

Development. The preliminary development of most of these tools was reported in previous annual reports of CIAT's Land Use Project. We are continuing to adapt and develop them with partners through extensive training and follow-up in Colombia, and through our work in the various case studies mentioned above. On 14 November 2003, at the Tequendama Hotel in Bogotá, we organized an information meeting to publicize these methods and decision-support tools.

We benefited from the participation of representatives of farmer associations and unions, the private sector, the academic community, regional environmental corporations, NGOs, research institutes, municipal administrations, departmental administrations, UMATAs, and other institutions involved in environmental management. These methods and tools are described in InforCom's 2003 annual report and on our Web page at <http://www.ciat.cgiar.org/planificacion-rural>.

Beginning this year, we have not been developing further tools and methods. Instead, we have been using the existing ones with our partners in the case studies, and modifying them as needs are identified. This year, the tools modified through use with partners were GEOSOIL and CUFRUCOL, and the Visions-Actions-Demands (VAD) method.

GEOSOIL Applications and Adaptations

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GEOSOIL is a database tool that stores information from soil profiles or from soil maps. For each new entry, the user may enter available physical and chemical data without having to fill in all the fields. For soil characteristics that are not numerical such as texture or land forms, the user can choose from a range of options. For several soil properties that can be used as soil-quality indicators, the database produces a diagnosis, using criteria established for the Colombian Eastern Plains. It permits comparison of soil characteristics with the requirements of a given crop and, when the necessary chemical information is available, it can recommend appropriate fertilizer applications. Soil requirements can be imported from the CUFRUCOL database or be specified by the user. The user may also export soil data and corresponding geographic coordinates to GIS programs for their mapping, or to geostatistical programs for a spatial analysis of variability and interpolation.

CENIPALMA, Colombia's oil-palm research center, requested CIAT's assistance with its soil and water management program for the plantations in Colombia's major oil-palm-producing region. GEOSOIL is being used in this context so CENIPALMA may systematize information at a scale of 1:10000.

GEOSOIL will also be used to evaluate soil distribution and suitability for oil-palm plantations. The soil parameters that define suitability will be included in the tool. In addition, the tool is being improved to include socioeconomic aspects of oil production, farm sizes, and tree distribution at different scales, ranging from farms to groups of farms. The final objective is to define better soil management systems to increase productivity and sustainability through the application of precision agricultural practices. Highlights of the work conducted with CENIPALMA so far include:

- We helped select aerial photography and thematic maps of the pilot sites and areas of influence of the plantations growing around San Vicente de Chucuri, Barrancabermeja, and Sabana de Torres (Santander)
- We provided assistance in photo-interpretation and the preparation of a preliminary soils legend
- In collaboration with CENIPALMA's soils expert, we identified necessary modifications to GEOSOIL in function of the specific requirements of oil palm
- We began systematizing information on soils and land use
- We designed and began preparing a training pamphlet for extension workers
- We began improving the didactic manual for GEOSOIL

GEOSOIL is also being used to store soil information and to determine the spatial variability of soil quality indicators in CORPOICA's new Taluma Experiment Station in the Municipality of Puerto López. We sampled an area of 20 hectares to begin characterizing physical and chemical soil properties and analyzing these data in a geo-statistical base. We hope to know the current values of different parameters, together with their variability. In the future, values found can be compared with changes induced by new soil and crop management systems. The soil properties that most change with use will be selected as indicators of soil state and will be monitored over time.

GEOSOIL is also being used to support studies with small farmers. Data capture forms were extracted from GEOSOIL to be incorporated in an iPALM computer for use in the field, using the ArcPad software. The parameters in the extracted forms correspond to visual indicators of soil state, as well as physical and chemical indicators.

CUFRUCOL Applications and Adaptations

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The CUFRUCOL database stores information on the botanical characteristics of crops, their biophysical requirements, and production costs. It allows input of data into GIS DSTs such as ClimCrop, and allows the printing of illustrated and informative cards for participatory discussion of crop options with farmers. CUFRUCOL was first developed in 2001 and has since been improved, with data added. Data on botanical characteristics, biophysical requirements, and production costs were compiled for 120 crops of interest to Colombia, including grains, forages, fruits, and vegetables. These data were stored in a database in the Microsoft Access format. Where possible, data were taken from Colombian sources and, when these were unavailable, the biophysical requirements were taken from the Ecocrop database developed by FAO. Users can also input their own data into the database, if they comprise local data or data related to specific varieties. They can also add new entries on crops not yet considered, or on combined production systems.

This database was designed to be flexible and useful for a variety of users. If adequately distributed, farmers could consult it at UMATAs. It could also be used by the UMATA agents themselves to help farmers plan production projects that combine a variety of crops, and make economic evaluations of different scenarios. The collection of information for this database requires a strategy involving research institutions, universities, and farmer unions. These stakeholders may become facilitators, as well as users of the data.

The CUFRUCOL database was presented last year to many institutions, most of which had contributed data that became integrated in a new version.

Discussions are under way with the Secretariat of Agriculture of the Department of Valle del Cauca in Colombia, to allow them to integrate CUFRUCOL in their agricultural planning activities. We planned a training day with the UMATAs of Valle del Cauca so they may implement the tool for the priority crops of the Department's fruit cultivation plan, as well as use it to help farmers seeking information on crops.

Further reading:

Rubiano Y. 2004. Manual del usuario Sistema Georreferenciado de Indicadores de Calidad del Suelo: GEOSOIL.; Ministerio de Agricultura y Desarrollo Rural, Internal report. CIAT, Cali, Colombia.

Applications and Adaptations to the Visions–Actions–Demands (VAD) Approach:

Contributor:s Nathalie Beaulieu, Rogelio Pineda (CIAT-InforCom Project)

This approach was first formalized in 2000 as an 8-step methodological proposal. In 2001, during workshops conducted for the municipal development plan of Puerto López, it was pared down to three basic concepts: Visions (desired future conditions), Actions (what can we do to achieve them?), and Demands (what could other stakeholders, or higher administrative levels, do to help us achieve our goals?). It was formalized into an approach that matched

the actions of certain stakeholders with the demands of others, articulating them from the village to the municipality and, eventually, to higher administrative levels.

This approach is now being used both to assist INCODER in Colombia to plan for the Areas for Rural Development (ARDs) and in Senegal to monitor and evaluate local development plans. In both cases, the approach was adapted. With INCODER, a methodology was jointly defined for the planning workshops. Because the partners were very much acquainted with the SWOT matrix, we agreed to use a slightly modified SWOT matrix as well as the Visions–Actions–Demands tables. This slight modification involved picturing the strengths, weaknesses, opportunities, and threats in terms of expressed desired future conditions.

Strengths correspond to internal factors or actions that have been achieved; weaknesses to things that remain to be done; opportunities to external factors that help us reach desired future conditions; and threats to external factors that prevent us from attaining them. By contextualizing SWOT in the progression between actual and desired future conditions, the exercise becomes more useful and motivating. After completing the SWOT analysis, the participants completed a table of Visions (desired future conditions), Actions (what can we do about this?), and Demands (what could other stakeholders, or higher administrative levels, do to help us achieve our goals?). Many of the actions listed corresponded to the weaknesses that were identified in the SWOT analysis and many of the demands to the external factors impeding attainment of the desired future conditions. The 2003 manual was updated to include this modified SWOT exercise.



Participants of the “environmental table” filling in a modified SWOT matrix during the workshop on “Towards the formulation of a rural development program”, held in San José del Guaviare, Colombia, 29 July 2004

In Senegal, the VAD approach is being used to monitor and evaluate local development plans. The 2003 manual was modified to include forms for

separately monitoring actions, for example, did we, our partners, and the ones to whom we demanded actions do what was planned? What was done and what remains to be done? Did the actions give good results? The forms were also used to monitor conditions through the use of indicators such as crop yield, soil organic matter, ground cover, land use, and species used. Finally, the forms were used to monitor the capacities we were trying to build: What have we learned since the last meeting? What questions remain? Who can help us?

Further reading:

Beaulieu N; Grupo de Planificación para el Desarrollo Rural. 2004a. Guía para la planificación, el seguimiento y el aprendizaje orientado al desarrollo comunitario. Updated version of an internal report. CIAT, Cali, Colombia. 21 p.

Beaulieu N; Groupe de Planification pour le Développement Rural. 2004b. Guide pour la planification, le suivi et l'évaluation participatifs avec une approche systémique. Updated version of an internal report. CIAT; ISRA, Dakar, Senegal. 21 p.

Outreach and Capacity Building

Organization of Seminars and Training Activities

Many of the training activities in Colombia were given as part of the capacity-building component of the agreement between CIAT and MADR. The training was oriented towards professionals of departmental and municipal administrations, NGOs, foundations, and universities.

This year, many training activities were also conducted as part of our agreement with INCODER, and aimed to build capacity in the identified ARDs and among the INCODER staff. Collaboration with the Andean Watersheds Project allowed us to contribute to a training event in Manizales. Related to land planning for the La Miel Watershed, it was very much in line with the same collaborative training events that were organized in Peru. As mentioned in the section on case studies, seminars were organized in Bolivia within the framework of collaboration between CIAT, IRD, UOT, and CODEPO, and involving other institutions as well. In Senegal, some training activities were organized within the framework of the Desert Margins Program.

The following list indicates the training events and seminars that were organized or co-organized by members of our team:

Colombia

Basic concepts of remote sensing and management of the SPRING program.
Held in Villavicencio, Meta, 18–22 November 2003.
Training provided by Nathalie Beaulieu and Ovidio Muñoz (CIAT-InforCom).

Participants (31) came from institutions such as the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), CORPOICA, National Institute of Land Development (INAT), Municipal Division for Water (DIMA), Corporation for the Sustainable Development of the Special Management Area of La Macarena (CORMACARENA), CIAT-Santa Rosa, Universidad de los Llanos (UNILLANOS), National Police of the Department of Meta, Environmental Management and Secretariat of Planning of the Government of Meta, Universidad Nacional de Colombia, UNITROPICO, CENIPALMA, Geographic Institute “Agustin Codazzi”, Cattlemen’s Committee of Meta, Cattlemen’s Association of Meta, and the Technical and Industrial Institute.

Using the Visions-Actions-Demands (VAD) methodology.

25 February 2004.

Training provided by Ovidio Muñoz and Rogelio Pineda (CIAT-InforCom Project). Participants (15) were from the municipal administration, UMATA, and associations of the Municipality of Bugalagrande, Valle del Cauca.

Workshop for diffusing the tools and methodologies to support decision making.

Held in Suárez, Cauca, 13 February 2004.

Organized by Ovidio Muñoz and Rogelio Pineda (CIAT-InforCom Project).

Participants (20) were members of the municipal administration and associations.

Workshop for diffusing the tools and methodologies to support decision making.

Held in Restrepo, Valle del Cauca, 16 March 2004.

Organized by Ovidio Muñoz and Rogelio Pineda (CIAT-InforCom Project).

Participants (10) were members of the municipal administration and associations.

Workshop for diffusing the tools and methodologies to support decision making.

Popayán, Cauca, 5 April 2004

Organized by Ovidio Muñoz and Rogelio Pineda (CIAT-InforCom Project).

Participants (14) were from secretariats of planning and agriculture, NGOs, and associations.

Land-Use and Territorial Environmental Planning.

Held in Manizales, Caldas, 3–8 May 2004.

Training workshop organized by the Andean Watersheds Project.

Training provided by Marcela Quintero (CIAT-InforCom Project); Wilson Otero (GTZ-Colombia); Rubén Darío Estrada (CIP/CONDESAN), Alonso Moreno (Andean Watersheds), Andres Felipe Betancourth (CONDESAN/Universidad de Caldas).

Participants (20) were involved in land planning for La Miel Watershed, including representatives of the Masters program in Production Systems at the Universidad de Caldas, employees of the local environmental authority (CORPOCALDAS), staff from the Institute of Higher Education of the Municipality of Pensilvania, and representatives of NGOs and the Departamental Secretariat of Planning.

Diffusion of soil research and of the methodologies and tools to support decision making in rural planning.

Held in Buenaventura, Valle, 17–18 May 2004.

Organized by Yolanda Rubiano (CIAT-InforCom Project).

Participants (70) were from the CVC, NGOs, Universidad del Pacífico, and municipal administration.

Implementing and managing the SIG MapMaker Popular.

Held at CIAT, Palmira, Valle del Cauca, 26–28 May 2004

Training provided by Ovidio Muñoz (CIAT-InforCom Project).

Participants (15) were from WWF-Colombia, OSSO, Biomacizo Project, IEP-UNIVALLE, CAMAWA, CHONAPI, Nasa Cxha Cxha Program, Universidad del Pacífico-Colombia.

Implementing and managing the SIG MapMaker Popular.

Held in Santander de Quilichao, Cauca, 1–2 June 2004.

Training provided by Ovidio Muñoz (CIAT-InforCom Project).

Participants (5) were from the Association of Indigenous Councils of Northern Cauca (ACIN).

Implementing and managing the SIG MapMaker Popular.

Held at CIAT, Palmira, Valle del Cauca, 8–10 June 2004.

Training provided by Ovidio Muñoz (CIAT-InforCom Project).

One participant, who was from CORPOICA–Tibaitata.

Implementing and managing the SIG MapMaker Popular.

Held in San José del Guaviare, 30–31 July 2004.

Training provided by Ovidio Muñoz (CIAT-InforCom Project).

Participants (5) were from INCODER's Amazon regional office.

Tools and methodologies to support decision making.

Held in San José del Guaviare, 24 August 2004.

Training provided by Ovidio Muñoz and Rogelio Pineda (CIAT-InforCom Project).

Participants (20) were from various institutions in the Guaviare ARD, including INCODER, the Secretariats of Planning and Agriculture, and the Regional Autonomous Corporation.

Tools and methodologies to support decision making.

Held in San Sebastián, Magdalena, 8 September 2004.

Training provided by Ovidio Muñoz (CIAT-InforCom Project).

Participants (60) were from the various institutions involved in the southern Magdalena ARD, including INCODER, the Secretariats of Planning and Agriculture, the Regional Autonomous Corporation, and NGOs.

Tools and methodologies to support decision making.

Held in Palmira, Valle del Cauca, 14 September 2004.

Training provided by Ovidio Muñoz and Rogelio Pineda (CIAT-InforCom Project).

Participants (45) were from the various institutions involved in the southeastern Valle ARD, including INCODER, the Secretariats of Planning and Agriculture, and the Regional Autonomous Corporation.

Tools and methodologies to support decision making.

Held in Puerto López, Meta, 21 September 2004.

Training provided by Ovidio Muñoz (CIAT-InforCom Project).

Participants (35) were from the various institutions involved in the Meta ARD, including INCODER, the Secretariats of Planning and Agriculture, and the Regional Autonomous Corporation.

National Workshop on Soil-Quality Indicators: Concepts and Principles Applied to the Evaluation of Land Degradation.

Held at CIAT, Cali, Valle del Cauca, 20–22 October 2004.

Organized by Yolanda Rubiano (CIAT-InforCom Project) and Edgar Amezcuita (CIAT-TSBF Institute).

Participants (92) included representatives from MADR, the Ministry of Environment, the National Department of Planning, research centers, universities, Regional Autonomous Corporations, NGOs, farmers' unions, indigenous and Afro-Colombian communities, and municipal authorities.

Peru

Land-Use Planning with a Focus on Watersheds, and with a practical component in the Districts of Morropón and Lalaquiz.

Held at Piura, 1–7 December 2003.

Training workshop organized by CONDESAN/GTZ (Andean Watersheds Project) and GSAAC.

Training provided by Marcela Quintero (CIAT-InforCom Project); Wilson Otero (GTZ-Colombia); Rubén Darío Estrada (CIP/CONDESAN), and Alonso Moreno (Andean Watersheds Project).

Participants (XX) included representatives from authorities and decision makers involved with the region's land-use planning.

Conceptual Bases and Methodologies for Land-Use Planning, including a practical component in the Province of San Pablo.

Held in San Pablo, 24–27 May 2004.

Training workshop organized by CONDESAN/GTZ (Andean Watersheds Project) and CEDEPAS.

Training provided by Marcela Quintero (CIAT-InforCom Project); Wilson Otero (GTZ-Colombia), Rubén Darío Estrada (CIP/CONDESAN), and Alonso Moreno (Andean Watersheds Project).

Participants (68) were mainly from community and municipal authorities.

Bolivia

National Conference on Land-Use Policies and Planning for Land Management.

Held in La Paz, 24–25 June 2004.

Organized by the Ministries for Sustainable Development and Planning, and Strategic Planning and Popular Participation, CIAT, and the French Embassy. 120 participants.

Seminar on "Land, Territory, and Planning: A Municipal Balance in the Framework of National Land-Use Policies.

Held in Cochabamba, 21–22 October 2004.

Organized by the Prefecture of Cochabamba, CIAT, College of Architects of Peru, and CESU (UMSS).

80 participants.

In addition to these two events, we also participated in the creation of a Masters program entitled *Planning for Land Management*, together with the Universidad Católica de Bolivia, the Universidad Mayor de San Andrés, IRD, and CIAT, with a proposal to extend it to the Universidad Autónoma de Manizales (Colombia), the Universidad Católica de Ecuador, and the Université de Toulouse (France). The program will begin in September 2005.

Senegal

Basic functions of the Geographic Information System SPRING.

Held in Dakar, 28–30 June 2004.

Training provided by Nathalie Beaulieu (CIAT-InforCom Project).

Participants (5) were from LERG.

Techniques of market gardening.

Held in Ngandiouf, 13 October 2004.

Training organized by Nathalie Beaulieu (CIAT-InforCom Project) in response to demands expressed during the monitoring and evaluation of communities' rural development plans. Training provided by Meissa Diouf and Cheikh Lô of ISRA–CDH.

Participants (28) were from the rural communities of Ngandiouf, Mbayène, Taiba Ndiaye and Méouane.

Postgraduate studies

This year, two of our national staff have initiated postgraduate studies and will capitalize on their experiences in the group while increasing the research focus in their work to validate some of the hypotheses mentioned above. Through these studies, the group will increase its own scientific capacity while initiating new partnerships with universities and other institutions.

Jaime Jaramillo began a doctorate in environmental sciences at the Autonomous University of Barcelona (UAB), with an option in ecological economics and environmental management. He has completed the pre-doctorate curriculum of courses in Barcelona and is now working in Colombia to complete a preliminary thesis on national and regional policies that give impetus to local development. When it is approved, he will receive the equivalent of a master's degree. His doctorate will aim at drawing lessons from the comparison of rural planning groups' applications in Bolivia and Colombia, again with the objective of validating some of the above-mentioned hypotheses.

Adriana Fajardo has begun a master's in rural development through a distance-learning program at the National University of Costa Rica. The objective of her research, which will be conducted during the next 2 years in Colombia, will be to demonstrate the roles planning, monitoring, and evaluation, together with communication mechanisms, play in the construction and strengthening of social capital in a collective organization. This research will result in validated recommendations for practices of communication, planning, monitoring, and evaluation to improve a community's cooperation, reciprocity, and confidence.

Yolanda Rubiano is continuing her PhD in agronomy, with a focus on soil sciences.

Web Page

In March 2004, we re-structured our page on the CIAT Web site, which can be accessed at <http://www.ciat.cgiar.org/planificacion_rural>. This virtual space allows us to communicate our results of the case studies, method and tool development, and outreach activities. It also allows us to suggest related links, advertise events, and make documents available to users. The Spanish-language page was last updated in August, this year. We plan to have an English version before the end of 2004. The number of visitors to our page in May was 5586; in June, 4071; in July, 3906.

Listserver for the Rural Planning Network

This is a platform or dynamic space, for diffusion, where interested parties may share information, promote their work and events, discuss and contribute knowledge. The listserver's address is <planific-rural@bayern.ciat.cgiar.org>. So far, we have 185 participants inscribed at a national level, and some from other countries.

Radio and newspaper interviews

- Colombian National Radio, 14 November 2003.
Nathalie Beaulieu and Rogelio Pineda discuss the event that launched the tools and methodologies of participatory land-use planning in the Tequendama Hotel, Bogotá.
- Colombian National Radio, 8 December 2003.
Nathalie Beaulieu was interviewed live by telephone for the program "En el Campo" [*In the Country*] on the Visions-Actions-Demands planning approach.
- Colombian National Radio, 27 July 2004.
Nathalie Beaulieu, Rogelio Pineda, and Carlos Ostertag discussed the objectives, strategies, and results of the CIAT/INCODER Agreement.
- *El Tiempo* Newspaper, January 2004.

Rogelio Pineda was interviewed about the planning tools developed by the group.

Plans for 2005

Our plans for 2005 include following up our case studies, adapting our tools through them, and conducting training activities within and outside the case study sites, in terms of demand. In Colombia, activities conducted for the MADR Agreement will be directed towards the INCODER ARDs that we helped this year. Novelties include collaboration with INERA in Burkina Faso and INRAN in Niger to jointly work on the role of monitoring and evaluating local development plans as a learning process to stimulate local innovation and communicate local knowledge. Concept notes have been submitted to the DURAS program at Agropolis and to IDRC. Together with the InforCom team, we will develop a proposal for using ICTs to support the monitoring and evaluation of municipal development plans in Colombia and Bolivia, and the innovation processes that result.

Staff

Nathalie Beaulieu, PhD in Remote Sensing, Senior Research Fellow (50% InforCom, starting in September 2004, was 100% before)

Adriana Fajardo, Biologist, Research Assistant 2

Jaime Jaramillo, Civil Engineer, Professional Specialist, posted in Bolivia

María Fernanda Jiménez, Systems Engineer, Research Assistant 3

Hubert Mazurek, PhD in Ecology, Researcher at IRD (UMR-151 "*Populations, environnement et développement*"), posted at CIAT and Bolivia

Ovidio Muñoz, Agronomist, *Diplôme d'études supérieures spécialisées* (DESS) in land-use planning, Research Assistant 1

Rogelio Pineda, Geologist, Professional Specialist

*Marcela Quintero, Ecologist, Research Assistant 2 (now with CIAT's Communities and Watersheds project)

Yolanda Rubiano, Professional Specialist (50% InforCom, 50% Project PE-2)

*left in 2004

Participation in Workshops and Seminars

- Beaulieu N. Le suivi et l'évaluation des plans locaux de développement comme mécanisme d'articulation entre la recherche agricole et le développement rural. Tuesday seminars at BAME, ISRA (Senegal), 1 June 2004.
- Pineda R. National Meeting on "Consejos de Planeación". Bogotá, 23–24 July 2004.
- Pineda R. Conference on "La formulación de Programas de Desarrollo Rural mediante metodologías de planificación territorial participativa". Bogotá, XX April 2004.

- Pineda R; Beaulieu N; Ostertag C. Conference on “Bases conceptuales y metodológicas para la formulación de Programas de Desarrollo Rural por CIAT en las áreas asignadas por el INCODER”. Bogotá, 26–27 July 2004.
- Fajardo A. Bosques de galería: Guía para su apreciación y conservación. Villavicencio, Meta, XX November 2003.
- Amézquita E; Rubiano Y; Orozco O. La condición física del suelo y su importancia en el manejo integral del suelo. An oral presentation given at the XVI Congreso Latinoamericano de la Ciencia del Suelo and the XII Congreso Nacional de la Ciencia del Suelo. Cartagena de Indias, 27 September–1 October 2004.
- Rubiano Y; Amézquita E; Beaulieu N. Sistema Georreferenciado de Indicadores de Calidad del suelo. An oral presentation at the XVI Congreso Latinoamericano de la Ciencia del Suelo and the XII Congreso Nacional de la Ciencia del Suelo. Cartagena de Indias, 27 September–1 October 2004.
- Rubiano Y. Marco Conceptual de Indicadores de Calidad del Suelo. Oral presentation at the national workshop on Indicadores de Calidad del Suelo; Conceptos y Principios Aplicados a la Evaluación de la Degradación de las Tierras. CIAT, Palmira, 20–22 October 2004.
- Rubiano Y. Monitoreo de Indicadores de Calidad del Suelo. Oral presentation at the national workshop on Indicadores de Calidad del Suelo; Conceptos y Principios Aplicados a la Evaluación de la Degradación de las Tierras. CIAT, Palmira, 20–22 October 2004.

Publications

Book chapters

Beaulieu N; Jaramillo J; Fajardo A; Rubiano Y; Muñoz O; Quintero M; Pineda R; Rodríguez M; León JG; Jiménez MF. 2004. Planning of territorial organizations as an entry point for agricultural research towards rural development and innovation. In: Pachico D, ed. Scaling up and out: achieving widespread impact through agricultural research. CIAT, Cali, Colombia.

Mazurek H. 2004. Desarrollo territorio y desarrollo local: replantear la relación global-local. In: González Parra C, Downing T, eds. Desarrollo global versus desarrollo local. Universidad de la Concepción, Chile. (In press).

Rondón MA; Acevedo D; Hernández MA; Rubiano Y; Rivera M; Amézquita E; Romero M; Sarmiento L; Ayarza M; Barrios E; Rao I. Potential for carbon sequestration in the Neotropical savannas (llanos) of Colombia and Venezuela. Publisher? place of publication? (In press.)

Peer-reviewed articles

Santana LM; Beaulieu N; Rubiano Y. 2004. Planificación en los llanos colombianos con base en unidades de paisaje: El caso de Puerto López, Meta. *GeoTrópico* 2 (1) at <http://www.geotropico.org/2_1_Santana>

Working documents and reports

Beaulieu N; Tamba A. 2004. Rapport sur le renforcement des capacités et la participation des acteurs dans le cadre de la composante sénégalaise du programme d'action dans les marges du désert, Septembre 2003–Octobre 2004. Internal report, CIAT/ISRA, Dakar, Senegal.

Beaulieu N. 2004. Rapport sur l'élaboration d'une carte d'occupation des sols de la région de Thiès à partir de deux images Landsat ETM+ acquises en 2004. CIAT; GeoMaps-Sénégal, Dakar, Senegal.

Mazurek H. 2004. Desarrollo, territorio y ordenamiento: Replantear la relación global-local. In: González Parra C, ed. Desarrollo local versus desarrollo global: buscando desarrollo sustentable en América rural en el tercer milenio, 51 congreso de los Americanistas, Santiago de Chile, 14–18 julio 2003. Universidad de Chile, City of publication. 25 p. (In press.)

Mazurek H. 2004. La integración de los países andinos: Entre promesas y realidades. In: Giacalone R, ed. Análisis comparativo de la integración regional latinoamericana y caribeña, 51 congreso de los Americanistas, Santiago de Chile, 14–18 julio 2003. Universidad de Mérida, City of publication. 35 p. (In press.)

Arréghini L; Mazurek H. 2004. Territoire, risque et mondialisation. Quelques réflexions à partir du cas des pays andins. In: David G, ed. Les espaces tropicaux face à la mondialisation des risques. X Journées de Géographie Tropicale, Orléans, 24–26 septembre 2003. 27 p. (In press.)

Mazurek H. 2004. L'Union Européenne et l'intégration des pays andins: l'accentuation des mécanismes concurrentiels. In: Kauffmann P; Yvars B, eds. Intégration européenne et régionalisme dans les pays en développement. L'Harmattan, Paris. pp 167–200.

Rubiano Y. 2004. Manual del usuario Sistema Georreferenciado de Indicadores de Calidad del Suelo: GEOSOIL. Internal report. CIAT; Ministerio de Agricultura y Desarrollo Rural, city of publication.

Beaulieu N; Muñoz O. 2004. Tutorial de teledetección utilizando el Sistema de Información Geografica SPRING. Internal report. Publisher, place of publication?

Publications accepted but not yet published

Arréghini L; Mazurek H. 2005. Marchés d'exportation et réseaux locaux d'innovation territoriale: deux logiques parallèles dans la structuration

- des territoires de l'économie bolivienne. In: Benko G, ed. Espaces et sociétés, numéro spécial économie des territoires et territoires de l'économie. Publisher, place of publication?
- Mazurek H; Garfias S, eds. 2004. El alto desde la perspectiva poblacional. USAID; CODEPO; IRD; French Embassy, Publisher, place of publication? 150 p.
- Mazurek H. 2004. Actores y dinámicas territoriales en Bolivia. In: Antezana F; Mazurek H; Uzeda A, eds. Actores, territorio y desarrollo local, 50 años de reforma agraria. IESE; CEPLAG; CIAT, place of publication? 25 p. (In press.)
- Grosso P; Jaramillo J; Mauro A; Mazurek H. 2004. Proceedings of the international seminar "Territorio y Desarrollo Sostenible", 17-20 June 2003, Cali, Colombia. FAO; IFAD; CIAT; IRD, Cali, Colombia 120 p. (In press.)
- Rubiano Y; Amézquita E; Beaulieu N. 2004. Sistema Georreferenciado de Indicadores de Calidad de Suelo. Rev Univ Nac Colombia volume, issue, and page numbers? (In press.)
- Beaulieu N; Jaramillo J; Restrepo JL; Diaz JM. 2004. A systems approach to planning as a mechanism for rural development in Colombia. In: Hall C; Leclerc G, eds. Making development work. New Mexico University Press, Albuquerque, NM. (In press.)

Collaborators

International

IRD-UMR 151; ICRISAT; CIRAD-TERA

In Colombia:

MADR; INCODER; CORPOICA; Regional Governments of Valle del Cauca, Magdalena, Meta, and Guaviare; Mayoral Office and UMATA of Puerto López

In Bolivia:

VMDS (Directorate General of Land-Use Planning and CODEPO); Universidad de San Simón (IESE and CEPLAG); Municipal Office of Calamarca; Association of the Municipalities of Cono Sur; Association of the Municipalities of Pando

In Peru:

GTZ; CIP; CONDESAN; Municipal Office of Pampacocla

In Senegal:

SRA-CDH; ISRA-CNRF; ISRA-BAME; ISRA-LNERV; ANCAR (regional offices in Thiès, Diourbel, Fatik, Kaolak); Directorates of Waters and Forests, and Agriculture

In Brazil (although we have no case studies there yet):

Universidade Federal de Uberlândia; EMBRAPA-CPAC; INPE; Vice
Ministry of Family Agriculture; Universidade do Sul de Santa Catarina

Donors

Centro de Investigación en Palma de Aceite (CENIPALMA, Colombia)

Ministerio de Agricultura y Desarrollo Rural (MADR, Colombia)

Global Environment Facility (GEF)

GTZ

Instituto Colombiano de Desarrollo Rural (INCODER)

Vice Ministerio de Desarrollo Sostenible y Planificación (through CODEPO and
FNUAP)

Appendix 1: Acronyms and Abbreviations

ACIN	Asociación de Cabildos Indígenas del Norte del Cauca, Colombia
AMDEPANO	Asociación de Municipios de Pando, Bolivia
ANCAR	Agence nationale de conseil agricole et rural, Sénégal
ARDs	Areas for Rural Development (of INCODER), Colombia
BAME	Bureau d'analyses macro-économiques (of ISRA), Sénégal
BIOMACIZO	Proyecto de Conservación de la Diversidad Biológica y Cultural en el Macizo Colombiano
CAMAWA	Cabildo Mayor de Autoridades Wounaan y Siepin del Bajo San Juan, Colombia
CDH	Centre de développement de l'horticulture (of ISRA), Sénégal
CEDEPAS	Centro Ecuménico de Promoción y Acción Social, Peru
CEGA	Centro de Estudios Ganaderos y Agrícolas, Colombia
CENIPALMA	Centro de Investigación en Palma de Aceite, Colombia
CEPLAG	Centro de Planificación y Gestión (of UMSS), Bolivia
CESU	Centro de Estudios Superiores Universitarios (of UMSS), Bolivia
CHONAPI	Fundación CHONAPI, Colombia
CIP	Centro Internacional de la Papa, Peru
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement, France
CLAYUCA	Consorcio Latinoamericano y del Caribe de Apoyo a la Investigación y Desarrollo de la Yuca, Colombia
CNRA	Centre national de recherches agronomiques (of ISRA), Sénégal
CNRF	Centre national de recherches forestières (of ISRA), Sénégal
CODEPO	Consejo de Población para el Desarrollo Sostenible (of VMPDS), Bolivia
CONDESAN	Consorcio para el Desarrollo Sostenible de la Ecorregión Andina, Peru
CORMACARENA	Corporación para el Desarrollo Sostenible del Area de Manejo Especial La Macarena, Colombia
CORPOCALDAS	Corporación Autónoma Regional de Caldas, Colombia
CORPOICA	Corporación Colombiana de Investigación Agropecuaria, Colombia
CPAC	Centro de Pesquisa Agropecuária dos Cerrados (of EMBRAPA), Brazil
CUFRUCOL	Base de datos para Cultivos y Frutales en Colombia
CVC	Corporación Autónoma Regional del Valle del Cauca, Colombia
DESS	diplôme d'études supérieures spécialisées, France
DMP	Desert Margins Program (of ICRISAT)
DSTs	decision-support tools
DURAS	Promoting Sustainable Development in the Agricultural Research Systems of the South (of GFAR)
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária, Brazil

FAO	Food and Agriculture Organization of the United Nations, Italy
GEF	Global Environment Facility
GEOSOIL	El Sistema Georreferenciado de Indicadores de Calidad del Suelo para los Llanos Orientales de Colombia (a CIAT model)
GFAR	Global Forum on Agricultural Research
GIS	geographic information system
GSAAC	Gestión Social del Agua y el Ambiente en Cuencas, Peru
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit, Germany
HePP	Herramienta de Planificación Participativa (Microsoft application created by CIAT)
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics, India
ICTs	information and communication technologies
IDEAM	Instituto de Hidrología, Meteorología y Estudios Ambientales, Colombia
IDRC	International Development Research Centre, Canada
IEP	Instituto de Educación y Pedagogía (of UNIVALLE), Colombia
IESE	Instituto de Estudios Sociales y Económicos (of UMSS), Bolivia
IFAD	International Fund for Agricultural Development, Italy
ILC	International Land Coalition, Italy
INAT	Instituto Nacional de Adecuación de Tierras, Colombia
INCODER	Instituto Colombiano de Desarrollo Rural, Colombia
INERA	Institut de l'environnement et de recherches agricoles, Burkina Faso
INPE	Instituto Nacional de Pesquisas Espaciais, Brazil
INRAN	Institut national de recherches agronomiques du Niger
IRD	Institut de recherche pour le développement, France
ISRA	Institut sénégalais de recherches agricoles, Sénégal
IRD	Institut de Recherche pour le Développement (France)
LERG	Laboratoire d'enseignement et de recherche en géomatique, Senegal
LNERV	Laboratoire national d'élevage et de recherches vétérinaires (of ISRA), Sénégal
MADR	Ministerio de Agricultura y Desarrollo Rural, Colombia
M&E	monitoring and evaluation
NGO	nongovernmental organization
NM	New Mexico, state of USA
OSSO	Observatorio Sismológico del Sur Occidente, Colombia
OT	ordenamiento territorial, Bolivia
PDL	Plan de Desarrollo Local, Bolivia
PDM	Plan de Desarrollo Municipal, Bolivia
PE-2	Overcoming Soil Degradation (of CIAT-TSBFI), Colombia
PLUS	Planes de Uso del Suelo, Bolivia
PMOT	Plan Municipal de Ordenamiento Territorial, Bolivia
POT	Plan de Ordenamiento Territorial, Bolivia
RII	Rural Innovation Institute (of CIAT), Colombia
SEGUIMIENTO	Herramienta para el Seguimiento y la Evaluación de Planes

SN-1	(tool created by CIAT) Rural Agroenterprise Development Project (of CIAT), Colombia
SWOT	strengths, weaknesses, opportunities, and threats
TERA	Département territoires, environnement et acteurs (of CIRAD), France
TSBFI	Tropical Soil Biology and Fertility Institute (of CIAT), Colombia
UAB	Universitat Autònoma de Barcelona, Spain
UMATA	Unidad Municipal de Asistencia Técnica Agropecuaria, Colombia
UMR	Unité mixte de recherche (of IRD), France
UMSA	Universidad Mayor de San Andrés, Bolivia
UMSS	Universidad Mayor de San Simón, Bolivia
UNILLANOS	Universidad de los Llanos, Colombia
UNITROPICO	Fundación Universitaria Internacional del Trópico Americano, Colombia
UNIVALLE	Universidad del Valle, Colombia
UOT	Unidad de Ordenamiento Territorial, Bolivia
USAID	United States Agency for International Development
VAD	Visions–Actions–Demands Approach across Administrative Levels (a CIAT methodology)
VMDSP	Vice Ministerio de Desarrollo Sostenible y Planificación, Bolivia
WWF	World Wildlife Fund