A Systems Approach to Planning as a mechanism for rural development in Colombia

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Abstract

This chapter describes the potential of the practice of planning as a development mechanism in Colombia, which has extremely well developed and institutionalized planning mechanisms, and requirements for citizen and institutional participation. However for development to address the aspirations and needs of everyone, and for planning to make a contribution to it, there must be a change in mentality. We need to avoid the logic of "winners and losers", an obsession for growth and a quest for quick and easy gain, not because these logics or values are morally "bad", but because in the long run, they are less beneficial to individuals than a logic of gradual progression towards collective and long term goals. We also need to develop a greater sense of responsibility in leaders and citizens. We propose a systems approach to planning which can help the necessary mind shifts, in addition to providing a management tool and promoting a learning process. Monitoring and evaluation gives these players the opportunity of validating the hypotheses they made during planning, by looking at what has worked and what has not, thus using the scientific method.

1 Introduction

In Colombia, a country confronted with serious governance issues, much hope is placed in multi-level decentralized planning at the level of territorial entities as a mechanism to achieve sustainable and equitable development. Colombia is one of the most advanced countries in Latin America in the development of legislation on territorial planning, maybe partly as a result of the same governance problems it faces. It is also one of the most decentralized, having seen a rapid increase of the proportion of its public expenditures made by territorial entities in the last 15 years (Porras Vallejo, 2003) However, the country is still in the early stages of a learning process on decentralized planning. As expected, planning has not been the panacea some of its

advocates had hoped and many improvements need to be made to its practice. The search for improvements should be oriented not so much towards the mechanisms and practices themselves but in the mind-sets needed from citizens and leaders to allow planning to take them where they want to go. We make an analysis of the situation in Colombia from the perspective of rural development, examining empirically what works and what does not while hoping to prevent any discouragement about planning, and we make a few recommendations about practices that could help change mind sets. We also think that development officers, governments and civil society in other countries can benefit from understanding the Colombian context and the lessons learnt up to now.

To explicitly link the concepts of planning and development, we need to go back and define what development means for us. We also agree with the definition given in chapter 1.2 that "development is the process of change towards a set of desired conditions". However, one might ask, "change of what?" and "towards the conditions desired by whom?". Planning is the process where players of development define their desired conditions, determine which are the conditions they would like to change and how they will achieve that change. Participatory planning occurs when individuals and institutions take part in the planning, synchronizing their goals and actions. Planning adds a component of direction and intention to the process of change; without intentions, change can occur in many directions, but not necessarily in a way that gives satisfactory results for anybody. In addition to this, the questions asked during planning, which includes hypothesis generation and testing, evaluation, monitoring and day-to-day decision-making, create a bridge between science and development. Scientists and information providers can link to planning processes directly or indirectly, focusing their research and information collection towards development needs.

In Colombia and in many other countries, governmental planning is conducted at various administrative levels, and serves as a platform for many organizational processes. Colombia is one of the few Latin American countries where municipalities are required by central governmental legislation to conduct territorial planning, over a time span that is significantly longer than the political mandate of the administration. Politicians of many other countries who are implementing legislation regarding territorial planning are seeking to learn from the Colombian experience. However, many people have doubts about the effectiveness of planning processes, although the need for planning is obvious. Both as a cause or a result of this ineffectiveness, planning is unfortunately often considered as a bureaucratic exercise to fulfill a legal requirement. It is much practiced but little taken advantage of. The more recently mandated participatory nature that it has acquired through the legal requirement for public consultation has increased its potential considerably, while creating expectations that are most often under fulfilled. Scientists and information providers who count on planning to have an impact on development and poverty alleviation often feel that the chain is broken, that the relay between players is not working as it should. Either plans are not used as management tools, decision makers do not have the culture of using information for important decisions, or different plans are totally unarticulated between administrative levels and even within the same administration. Many people have lost faith in planning, stating that it simply does not work, or are frustrated in the process.

However, many of us who have taken part in successful participatory planning experiences are filled with hope and are convinced that the process can have extremely positive impact on development at every scale. But what makes the difference between successful and unsuccessful planning? We think that by considering planning as a mutual learning process rather than a control process from above, individuals, groups, institutions and governments will be more motivated to indulge in it, and will profit from it much more. In this chapter, we will propose a systems approach to planning as a learning process. We think that the systems that compose our society will be able to learn how to improve their functioning to reach their goals, overcoming development obstacles which are most often the same obstacles to effective planning and learning.

2   A systems approach to planning

Ian Mitroff (1998), in his book entitled "Smart Thinking in Crazy Times", states that the inefficiency of many institutions results from them trying to solve the wrong problems. This occurs when decision-making concentrates on only part of the problem, considers only a very limited range of options and does not consider their consequences on all the interest groups. His approach for smart thinking therefore includes recommendations on how to think with a systems approach, to consider the various interest groups involved, to expand the limits of the problem and the range of possible options. He insists on the necessity to integrate different points of view to avoid falling in the trap of solving a false problem. He mentions that, while making a decision, it is always better to consult representatives of the interest groups themselves, but when all of these are not available, that it is possible to generate or imagine a variety of points of view. He presents techniques allowing decision-makers to imagine the points of view of non-influential interest groups that could be against their decisions. Governmental and community planning, on the other hand, provide excellent opportunities to combine different points of view without having to generate or imagine them. Thanks to the participatory requirements of most planning laws and of the constitutions of democratic countries, planning processes have the excuse and the obligation of integrating the points of view of real life players, *in vivo*. Actors and decision-makers however need to develop skills in listening, learning and thinking to be able to take advantage of these exchanges.

But what is a systems approach, and how can it help us in planning? We review some basic aspects of a systems approach that are essential for understanding how we can use it in assessing and improving the conditions of development in Colombia. A system is an organized set of components, that in turn is composed of a series of smaller sets or components (or sub-systems), and which itself forms part of a larger set (or supersystem). Systems are dynamic and their state changes with time. There are interactions among their components and among their hierarchic levels. It is fairly obvious too see how governmental hierarchies, the organization of most institutions, as well as social and biophysical processes can be described as systems. A systems approach allows simplifying the description of complex hierarchical arrangements, where an exhaustive description would be overwhelming because one finds another series of hierarchical organization upon looking at any component in detail. It is especially useful when one needs to describe or enhance the interaction among components or between levels. The most important defining characteristics of systems include emergence, hierarchical control and communication (Clayton and Radcliffe, 1996). Emergence refers to the fact that each level has properties that

cannot be explained solely by referring the properties of its components. Through hierarchical control, each level promotes or constrains the actions of the level below. Systems can also have important self-control (or self-correction) mechanisms and are even perceived as having "self design" (Odum 1988 and 1994). Systems must have an adequate degree of control either through natural selection or properly functioning social organizations or they will not survive. Excessive control can limit their ability to adapt to new conditions, and insufficient control reduces their ability to determine outcomes in normal conditions. Communication allows the transfer of information for regulation, and functions principally through feedback loops. A good review of the early thinkers in applying systems theory to social issues is given in Hammond (2003).

There is a hierarchy of goals in social systems, and the goals of a given level usually include some control of the level below. In social systems, it is important for component-players to understand the whole-system goals they are serving, and it is also important for whole-system coordinators to have their goals be synchronized with the goals of the component-players. Any component has three types of goals: to sustain and improve itself, to contribute to the goal of the level above and to assist in the goals of levels below by coordinating its own components and to insure that they have the conditions necessary to fulfill their responsibilities, including resources, interactions and security. Synchronization and communication of goals are some of the most important functions of a good leader (Sharma, 1998). Absent or incomplete goal synchronization causes conflict, discontentment, slower progress towards the goals, or all of these, and can even lead to the destruction of the governing system at the next higher level. But interaction among players does not limit itself to control and goal synchronization. Most complex goals need contributions or actions from a variety of players, in a variety of levels. Interactions are also necessary to synchronize these actions, and to allow the output of some components to become the inputs of others.

One of the most important features of living systems, including organisms, ecosystems and social systems, is their capacity to adapt to a change in external conditions. This adaptation is done through a process of iterative evaluation of how the actual situation compares with the desired ones, which can be represented through figure 1[1]. The big circle in the center represents feedback loops, through which actions are adapted in function of the evaluation of conditions, conducted through some kind of monitoring. Because many of the examples of systems in this chapter refers to cars, we used the Colombian "chiva", a bus used in rural areas, to symbolize the system that undergoes the feedback loops. In this figure, the interrelationships between components and levels are represented by the word partnerships.

There are two types of feedback loops, positive and negative. Positive feedback loops are self-enforcing, they occur when a process encourages even more of the same process. They can be described as either "virtuous" or "vicious" cycles, respectively, if the increasing condition is desired or not. Examples include population growth (more people produce more babies),

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[1] A very similar figure is used by O'Connor and Seymour (1993) to represent the learning process in their introductory book on neuro-linguistic programming, a set of psychological techniques that aim at helping individuals to improve their personal and professional results through improving their mental perceptiveness, flexibility and communication skills. This set of techniques also uses a systems approach and can be applied at other levels than the individual person.

composite interest at the bank (more money yields even more interest), soil erosion (eroded soils are less covered by vegetation and are therefore more susceptible to erosion), violence (creates vengeance and more violence), the growth of a cancerous tumor, etc… In some cases these should be encouraged up to a certain point, and in others they should be slowed down or avoided. Negative feedback loops are the ones that allow systems to restrain certain activities and to control the excessive progression of positive feedback loops.   We use them when we ride a bicycle, to keep the bicycle from dropping to one side or from going too fast while going down a hill. Negative feedback is required to maintain resource exploitation within the limits of the productivity of nature. The immune system, limiting the growth of cancer tumors in a body, can also be seen as using negative feedback. Meadows (1997) mentions that reducing the gain around a positive loop is usually more powerful than strengthening negative loops.   When driving a car, it is easier to control speed by moderating pressure on the accelerator, rather than letting the car go too fast and then applying the brakes.

Self-correction mechanisms, when successfully functioning in lower levels, can allow systems to save considerable energy in control. In our example on cancer, healthy cells have an internal mechanism that limits their growth, which they lose when they become cancerous. In social systems, the most important self-correction mechanism is the personal "conscience", that is related to one's paradigms, values and principles. This self-regulation is possible when one is able to identify with higher-level goals, and synchronize or compromise lower level goals in function of them. For example, again while driving a car, one's goal might be to get to work in the morning while minimizing the time spent on the way. However, when we see a red light, we are likely to stop even if we compromise our goal of arriving quickly.   We will stop even if it is unlikely that a police officer, an agent of the official controlling mechanism, will be present to punish us. We know that if we don't, we might cause an accident that would hurt another or ourselves. And besides, we have another higher-level goal, which is to be part of a society where people respect each other's rights. These higher-level goals, which we share, have a priority over our individual goals. In any case, we have considered the presence of traffic lights on the way to work in our hypothesis of how long it will take us, so we have already accepted the fact that it will take us longer than if we were alone in the city. However, not everybody thinks in this way, and we sometimes have very pressing goals that are stronger than our civic ones. This justifies the presence of official control mechanisms.

Development involves change in systems, which can be triggered through a variety of mechanisms. Meadows (1997), in her article "Places to intervene in a system", mentions that leverage points "are places within a complex system (a corporation, an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce big changes in everything". She lists and describes a series of possible places to find leverage points, the most important being the mindset or paradigms that lead the system. This is followed, in importance, by the goals of the system, then by the power of self-organization, the rules of the system, information flows, driving positive feedback loops, regulating negative feedback loops, material stocks and flows, and lastly a category that she calls "numbers" or parameters, which correspond to adjustments to details in the functioning of a system, but won't change its overall behavior.

Planning with a systems approach implies first and foremost the ability to define the system's desired future conditions, setting whole-system goals, understanding how sub-system

goals can contribute to the major goals and understanding how the system's goals are included in a super-system's. To be able to do this, it is necessary to understand the system as a system, to identify which super-systems it is a component of and which sub system are its components . Planning also involves allowing components and levels to communicate so they can synchronize their goals and their actions, matching the actions of one with the needs of others, both from the top down and from the bottom up. Planning also involves putting into practice a variety of mechanisms or actions to attain those multiples goals, thus making hypotheses in the process of choosing them. It involves periodically adjusting mechanisms and actions in function of their effects and of external conditions. It includes setting control and self-correction mechanisms, paying special attention to the vicious circles we want to avoid. It includes identifying and facilitating the necessary feedback loops for both the control and the hypothesis testing for adaptation. An important advantage of a systems approach to planning is that the same principles apply at every level, from the individual, the family, the enterprise, the association, village, municipality, country or international organizations.
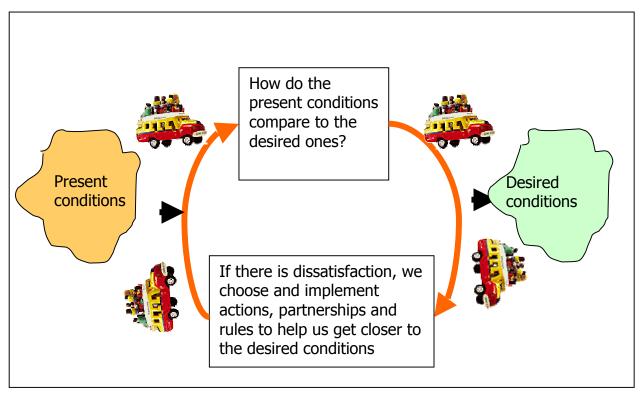

Figure 1 :   Simplified representation of the learning process, which can also be applied to planning

3   What kind of system is desired in Colombia, and how has planning been perceived as a tool for its implementation

3.1   Desired future conditions

A good place to look for national-level "desired future conditions" for Colombia is in the 1991 constitution, in the Colombian legislation and in the national development plans. The constitution defines Colombia as "...A social state of rights, organized as a unitary republic, decentralized, participatory and pluralist ..." The paradigms behind this constitution are of equality, participation and peace. In general, the Colombian legislation and policies also state rules and means to achieve desired conditions; they often correspond to an ideal situation which is different than the present one but towards which the rules are expected to lead society.

The National Development plan developed at the start of the mandate of the present president Alvaro Uribe Vélez (Presidencia de la república y DNP, 2002) defines the desired country as a "community-state". It aims at a participatory state that involves citizens in the achievement of social goals, a state that manages and invests public resources with efficiency and austerity, a decentralized state that privileges regional autonomy with transparency, political responsibility and community participation.

With respect to rural development, the previous government of Andrés Pastrana had promoted a visioning exercise called as "Agrovisión Colombia 2025", conducted by institutions of the agricultural sector, leading to the definition of desired future conditions and means to get there (Presidencia de la República, 2000). The resulting document describes the desired Colombia for 2025 in the following terms: "The country enjoys sustained growth, maintenance of peace and social coexistence. A full democracy is at work in all spheres of human activity, with an efficient social and political control by its citizens. Rural areas enjoy opportunities and life conditions that are equivalent to those enjoyed by the rest of society. The economic system is sustained in a culture of competition and favors the creation and the development of dynamic markets. Nonetheless, the State intervenes to regulate and orient the equitable distribution of the benefits of development while guaranteeing the respect of political and citizen rights". The means chosen in the Agrovisión exercise to achieve a dynamic and competitive rural economy is to create specialized regions, to orient agricultural production towards tropical products for export, and to create efficient production chains to produce high quality products with high added value. These would be made possible by:
- ❑ a generalized educational development in rural areas, which guarantees that the agents adopt quality decisions in their economic, political and social activities;
- ❑ High and increasing scientific and technological capacity, which guarantees dynamic innovation
- ❑ Large, pertinent and timely offer of information which allows persons and organizations to make optimal decisions
- ❑ Coherent institutionalism which provides a climate of certainty and stable rules, promotes and develops markets of goods and factors, encourages a sustainable and efficient use of natural resources and stimulates the development and the disposition of human and organizational capital
- ❑ An adequate provision of infrastructure, services and public goods by the State

It would be necessary to have discussions about how much growth and international trade is desired, how government will intervene to equitably distribute the benefits of development and guarantee the respect of political and citizen rights and debates about how specialized we want regions to become (risking a loss of diversity), which proportion of production should be aimed

at exportation. However, the elements listed above seem like reasonable desired future conditions and are compatible with the other desired conditions previously described in other plans or programs and in the 1991 constitution. The present government is presently coordinating the development of regional agendas for research in agriculture and livestock, which should contribute to achieve this vision.

3.2   Rural development in Colombia as a system

Rural development includes all of the activities and processes that take place in rural areas, and includes their interaction with cities. It comprises many other productive activities other than agriculture and livestock, and involves all economical sectors. Consequently, the players involved are very numerous[2]. Because Colombia is part of larger systems (the biosphere, human society, the international community), the distribution of roles among players in Colombia is very much affected by the international context and by historical events.

One of the most important recent factors determining the international context is the structural adjustments imposed by the International Moneraty Fund (IMF) as conditions for receiving financial support from international financial institutions. These adjustments encourage decentralization and the downsizing of central governmental programs. Decentralization, which had already started in Colombia in the 1960s but was accelerated in the 1990s, involves the transfer of administrative, technical, fiscal and regulative responsibilities to other levels of governments or other players. It was not only encouraged by the international context but was also demanded by territorial entities to ensure more legitimacy and accountability of the governments (Porras Vallejo, 2003). The popular street manifestations that preceded the revision of the constitution in 1991 is another indication that decentralization was strongly desired in Colombia (Oliva et al., 1998). Another important consideration is the fact that these adjustments were promoted after the end of the Cold War, during which strong central governments were, on the contrary, strongly encouraged (Costa et al, 1999) and heavily funded by the World Bank in the case of countries aligned with the western block. This tendency towards decentralization, following a heavy centralization of governmental services, somewhat complicates the sharing of responsibilities, as we will see later.

Another international factor that greatly affects rural development is the globalization of the economy. Incidentally, Perrico and Ribeiro (2002) consider that globalization and decentralization are simply different aspects of the process of transferring responsibilities of the state, either to higher or lower administrative levels. Through these processes, national governments have delegated or abolished many controlling mechanisms. Although allowing more flexibility, this lack of control also has some consequences on the distribution of resources and in addition we have seen an enlargement of the gap between the rich and the poor (Cusack, 1998). The competitiveness of developing countries, in which the IMF impedes subsidizing agriculture and industry, is greatly threatened by developed countries where agriculture and industry are heavily subsidized (Kroeger and Montanye 2000). Now international organizations such as the UN,

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[2] Players include both actors and stakeholders, and any individual, group or institution can be one, the other or both, depending on the situation and the decision to be made. *Actors* are those who can influence the future conditions and *stakeholders* are those who are affected by the actions of the actors or by the resulting conditions.

federations of states such as the European Union, the World Trade Organization (WTO) and international treaties of commerce such as the NAFTA are creating new regulation and control mechanisms. The environmental and labor laws of many countries are being questioned and even denounced by corporations because they are perceived as causing obstacles to free trade or to the exploitation of natural resources.

In any case, we see decentralization as an opportunity to improve rural development, by transferring responsibilities and economical resources to power structures that are closer to the rural population. In terms of governmental administration, three types of "territorial entities" are defined in the Colombian constitution. There are 32 departments, 1096 municipalities, 603 indigenous reserves and four districts. The word "territorial" implies that administrations have responsibilities over their entire territory, both rural and urban, and it also implies that they are responsible for all sectors of development. A large part of the investments for infrastructure and human resources for rural development are now required from departments and municipalities, who get their financial resources from direct taxes as well as through transfers from central government. The hierarchic units of the social-political system correspond to the administrative level of representation of the territory and its population which are separated physically by political-administrative boundaries. The responsibilities are distributed, at least in theory, as a function of which level and which player can best do the job. Rural development responsibilities are perceived as much wider than governmental ones and are shared with the private sector, universities and research institutions, the media, Non Governmental Organizations (NGOs), Community-based organizations, farmer's unions, individual producers and consumers. Many decisions are taken at the family and individual levels, which have their corresponding responsibilities (and thus power), but also have an impact on regional and national development.

3.3   The sharing of responsibilities for rural development

The distribution of responsibilities between central government, departments and municipalities still suffers some ambiguities but will be clarified through the *Ley Orgánica de Ordenamiento Territorial*[3], presently discussed by congress. Municipal administrations, led by the Mayor, are responsible for coordinating education and health services (using financial transfers from the central government), enabling public services such as water supply, electricity, garbage disposal (often through private companies), constructing local roads, providing recreation facilities and cultural activities for the population as well as rural technical assistance. Departmental administrations, lead by the Governor, have the responsibility of coordinating municipal activities over the department, and to serve as an interface between municipalities and the national government. They receive some financial resources through transfers from the national government and play a certain role in financing infrastructure for health and education. They also fund the construction and maintenance of departmental-level transport infrastructure such as roads or ports.   Departments and municipalities in which there are petroleum exploitations receive special taxes or "regalías". Municipalities are the most local level of government, but villages and urban neighborhoods can have their form of local organization and leadership through community-based organizations, called *juntas de acción comunal.* These are

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[3]

http://www.dnp.gov.co/ArchivosWeb/Direccion_Desarrollo_Territorial/ordena_territorial/proyecto_de_ley/FINAL_PONENCIA_ SENADO_ NOV 2001.doc

represented at the municipal level through the association of *juntas*, which usually meets frequently and addresses local issues with municipal authorities.

We mentioned that one of the responsibilities of municipalities is to provide direct rural technical assistance (or "extension") free of charge to small producers, and as a charged service to medium producers[4]. This service is either provided through a municipal unit of technical assistance (UMATA), where extension agents are municipal public servants, or through contracts with private companies or individuals. This technical assistance is extremely important for rural development because it is the means of transfer of new production options to small and medium producers. It is also meant to be the means of feedback from producers to the Colombian agricultural science and technology system, communicating their needs for research and technology, as well as any local process of innovation. Rural extension agents are usually the most effective interfaces between the municipal administration and the rural inhabitants. Not only do they assist farmers with agronomical problems but they help them organize associations, links with markets, help them with various forms of financial arrangements, and promote the investment of the municipality's financial resources in infrastructure to support local production[5]. In addition to actively participating in municipal planning itself, helping out with the logistics of rural planning workshops and transmitting input from rural inhabitants to the municipal administration, rural extension agents can play a very important role in helping rural inhabitants with their own planning. Departments, through their secretariat of agriculture, have the responsibility of monitoring the effectiveness of municipal rural assistance.

In Colombia, environmental control is insured by autonomous, regional corporations (CARs). These regulate the exploitation and the extraction of natural resources in their regions of authority, provide permits for use and exploitation of natural products, mineral and forest concessions, as well as incentives for forest regeneration such as the forest incentive certificate (CIF[6]). They also apply fines to those who do not respect environmental law. They also participate actively in educational campaigns and research. They sometimes fund specific environmental projects in their area of influence. They are funded through transfers, by municipalities, of 5% of the collected land taxes. They can also generate their own financial resources by providing certain charged services such as water, electricity, technical assistance or information.

At the regional level, Colombia previously had regional councils of economic and social planning (CORPES) until the first of January 2000[8]. These had been created[9] in 1985 to allow the regions more autonomy, establish permanent coordination links between national, departmental and municipal institutions, especially relative to planning, and insure the participation of the regions in the preparation of the regional plans, which were supposed to be included in the National Development Plan. These structures have not been renewed further than

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[4] http://www.minagricultura.gov.co/leyes_word/ley607de2000.rtf
[5] A recent decree of December 2002, expands the obligations of the rural technical assistance with respect to law 607 of 2000, to include these contributions to the organization of farmers and rural inhabitants in general.
[6] The *Certificado de Incentivo Forestal* was created through law 139 of 1994 and is regulated thre decree 1824 of 1994. http://www.finagro.com.co/
[7] Law 290 of 1996 determined these instances to be valid until the first of January of 2000
[8] Law 290 of 1996 determined these instances to be valid until the first of January of 2000
[9] Law 76 of 1985, decrees 3083, 3084, 3085 and 3086

their last mandate defined in 1996, but the creation of new regional structures is included in the *Ley Orgánica de Ordenamiento Territorial* which is presently being discussed by the National Congress, such as Autonomous Planning Regions (RAP) and territorial regions (RET), which would assume similar competencies and roles as did the CORPES. An important debate will have to take place, however, about the way of using this regional mechanism, because the CORPES were heavily criticized for being ineffective.

Large producer unions (often referred to as *gremios* in Colombia), sometimes having a national span, play a very important role in the definition of agricultural policy and various mechanisms to favor their members, such as the guarantee of minimum prices to producers, obtained through discussions with the Ministry of Agriculture and Rural Development.

The national government is represented by the president of the republic. Legislative aspects are covered by the National Assembly and the Congress. The execution of legislation and other types of policy is insured by the various ministries and national departments, which are all relevant to rural development. The Ministry of Agriculture and Rural Development (MADR)[10]. provides policy framework for Research and Development, production and credit mechanisms, in coordination with other ministries. It is comprised of a large set of distinct entities that manage the research and technical development component for agriculture and livestock, offer development programs and develop policy. The National Department of Planning (DNP) provides leadership in planning of economical and social development of the country, through the multisectorial coordination of the different initiatives discussed in the National Council of Economical and Social Policy (CONPES). This department has a division especially devoted to agrarian development, and another one devoted to territorial development. Other extremely important ministries are the Ministry of Transportation, the Ministry of Interior, the Ministry of the Environment and the Ministry of public credit. Each of these ministries have their representation at the departmental level, and in some cases at the municipal level, through specific secretariats of these territorial administrations.

Agricultural research is conducted by a National Agricultural Research System (NARS) composed of national agricultural research institutions, universities, the private sector, rural extension services, farmers and their organizations, as well as other representatives of civil society. Science and technology in the agriculture and livestock sector are provided by CORPOICA and by national research centers known as the "CENIs", which are centered around a particular crop or production system (CENICAÑA, CENICAFE, etc..). CORPOICA[11] is a corporation that was created to strengthen and reorient research and technology transfer related to agriculture and livestock, with strong links and participation from the private sector.   Since the creation of CORPOICA, the institute of agricultural and livestock science ICA's[12] role is restricted now mostly to the prevention, control and mitigation of sanitary, biological and chemical risks that affect agricultural and livestock production. This system conducts fora to insure that agricultural research is focused towards the needs of society. These national fora are included in a regional for all of Latin America and the Caribbean, called FORAGRO. Long before regional fora were created in the mid 1990's, some coordination of research in Latin

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[10] http://www.minagricultura.gov.co/
[11] http://www.corpoica.org.co/
[12] http://www.ica.gov.co/

America was (and continues to be) insured by the Interamerican Institute for agricultural Science (IICA). The diverse regional fora in the world participate in the Global Forum on Agricultural Research (GFAR). International centers of the Consultative Group for International Agricultural Research (CGIAR) have the role of providing methods, scientific results and technology, especially oriented towards the alleviation of hunger and poverty. Two centers have strong activities in Colombia, the International Center for Tropical Agriculture (CIAT) based in Cali, and the International Center for Maize and Wheat (CIMMYT) based in Mexico. MADR and CORPOICA have a cooperation agreement with both of these centers.

Financing opportunities are coordinated through the *Fondo para el Financiamiento del Sector Agropecuario*, FINAGRO[13]. This fund was created in 1990 in response to a need of the agricultural sector of Colombia to have an autonomous and specialized entity that could manage resources for credit, which were previously dispersed in various organizations. One of its most important lines of credit are the associative loans, a mechanism to finance activities or production projects run by associated producers, including at least 50% of small or medium producers. To be eligible for the program, they must have organized the sale of their products through anticipated contracts and respond solidarity to the obligation of credit. Given the fact that small and medium producers often do not have a demonstrated paying capacity or sufficient collateral to provide as a guarantee, the government created the *Fondo Agropecuario de Garantías* (FAG), a fund which covers the guarantees of up to 80% of the loan for small producers, up to 60% for medium producers and up to 50% for large producers.

3.4   The formalization of Planning in Colombia

We can see that the desired future conditions need contributions from a variety of players. All of the players within the Colombian system have planning requirements or at least opportunities, either official or non-official, and through participation have the opportunity to influence the decisions taken at levels above. Monitoring and evaluation gives these players the opportunity of validating the hypotheses they made during planning, by looking at what has worked and what has not, thus using the scientific method. Some planning mechanisms are even required by law in various administrative levels, such as the development plans or *Planes de Desarrollo* (PD)[14] and the longer-term territorial plans or *Planes de Ordenamiento Territorial* (POT)[15]. Because of their existence at various administrative levels, these offer the possibility to articulate actions between levels and to articulate the various components of a given level. In

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[13] http://www.finagro.com.co/

[14] *Ley Orgánica del Plan de Desarrollo*, Law 152 of 1994.
(http://www.dnp.gov.co/ArchivosWeb/Direccion_Desarrollo_Territorial/planificacion/doc_apoyo/guia_form_planes_dllo.rtf)

[15] *Ley de Ordenamiento Territorial*. Law 388 of 1997.
(http://www.dnp.gov.co/ArchivosWeb/Direccion_Desarrollo_Territorial/legislacion/ley_388_1997.pdf). This law defines for Colombian municipalities three types of territorial plans, in function of the number of inhabitants, in the following manner : Municipalities with less than 30 000 inhabitants conduct a scheme or *Esquemas de Ordenamiento Territorial (EOT)*; the ones with between 30.000 and 100.000 conduct a basic plan or *Plan Básico de Ordenamiento Territorial (PBOT)* and the ones with more than 100 000 conduct a *Plan de Ordenamiento Territorial(POT)*. However, municipalities can choose to conduct a plan corresponding to a larger population than the one they have.

Colombia, development plans are carried through at the municipal, departmental and national levels. For the moment, territorial plans are required legally only at the municipal level, but the *Ley Organica de Ordenamiento Territorial*, presently in discussion, will make them required at the departmental level as well. Municipal territorial plans have a time span of 9 years and cover three times the constitutional mandate of mayors. They are strategic planning efforts where the municipal administrations have to set a series of norms, actions, programs and projects at short, medium and long term, and they must generate spatial plans over their legal territory. In addition to the longer time span, their other novelty with respect to development plans is that maps are used to represent the spatial distribution of natural threats and risks, areas with specific restrictions or potentials for land use, areas with cultural, historical or environmental patrimony as well as the present and desired distribution of infrastructure. But like the development plans, territorial plans are a multisectorial and have to include all the social, economical, cultural and environmental activities, both in the rural and urban areas. These plans also have to project how financial resources will be distributed.

A development plan is required by law from each new administration in the first four months of the exercise of its functions. They are therefore repeated after each election, every three years in the case of municipalities and departments and every four years in the case of the national presidency. Like the territorial plans, they express a series of programs, projects and norms, but only the ones to be carried out during the mandate of the administration in question, and determine how the financial resources will be used.

Development plans necessarily have to be linked to the territorial plans and thus determine short-term and local actions consistent with long-term regional objectives. Development plans are comprehensive, they are multi-sector, but include a series of sector-based programs which can themselves include specific action plans. These sector-based programs need to be articulated with the corresponding sector-based programs of the administrative level above. For example, at the municipal level, the development plan (*Plan de Desarrollo Municipal*, PDM) includes the municipal agriculture and livestock program (*Programa Agropecuario Municipal*, PAM) which itself includes the plan for rural technical assistance or *Plan de Asistencia Técnica Directa Rural*. The agricultural plans of all of the municipalities within a department are then co-ordinated by the departmental secretariat of agriculture. By law, municipalities are required to invest a minimum proportion of their budget to rural areas[16] and the development plan is the mechanism allowing rural investments to be specifically identified.

In Colombia, the political-administrative units are defined by the *Ley orgánica del plan de desarrollo* (law 152 of 1994), that establishes who are the planning and controlling authorities, for the national level and the territorial entities, in the following manner:

Planning authorities:

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[16] Indeed, the law 60 of 1993 states that municipalities must invest, in rural areas, a proportion of transfers from the State for social programs that is at least as much as the proportion of rural inhabitants, and that in areas where the rural population exceeds 40%, that this proportion must be increased by 10%. This law was modified by the law 751 of 2001, but this modification does not affect this requirement to invest in rural areas.

- At the municipality level : the Mayor (highest planning authority), the municipal council of government, which has to work in the formulation of the plan, in coordination with the municipal administration and other entities working in the municipality, and any specialized office or secretariat, for example the municipal unit of rural technical assistance.

- At the Departmental level : The governor (highest planning authority), the departmental council or government, the planning secretariat, administrative department or office, which have to work on the formulation of the plan in coordination with the other secretariats and administrative departments, decentralized departmental or national entities who operate in the territory and any other specialized office.

- At the National level the President of the Republic, the highest authority of the National Planning, the National Council of economical and social Policy (CONPES), the National Department of Planning (DNP)[17] which conducts the secretariat of CONPES, jointly develop in concert planning orientations given by the President of the Republic, coordinates the formulation of the plan with the ministries, administrative departments and territorial entities. DNP and the Ministry of finance and public credit insure consistency in national budgets, coordinating with other Ministries and administrative departments.
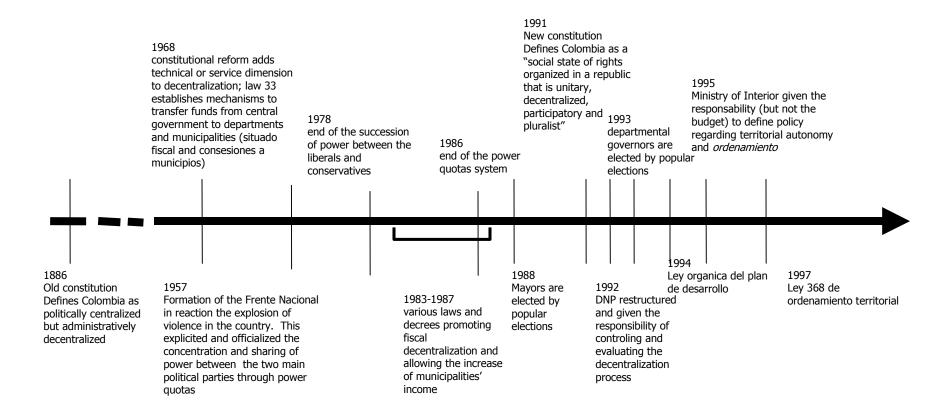
The authorities that control planning processes:

- In the municipality: the Municipal Council, responsible of approving the territorial plan, the development plan and all norms related to planning and social and economic development; the Municipal Planning Council and the Council for territorial planning, both consultative councils which group representatives of civil society not only for the formulation of plans but also for monitoring and evaluation. The Municipal Council of Rural development (CMDR) is in charge of developing and monitoring the agriculture and livestock program and the plan for rural technical assistance.

- In the department: the Departmental Assembly, responsible for approving the departmental development plan and the norms related to economical and social development and planning, with the consultative Departmental Council of Planning.

- In the Nation: the development plan is approved by the Congress of the Republic and the National Council of Planning (CNP) which is composed of representatives of the territorial authorities, indigenous groups, ethnic minorities and woman, and of various economical sectors, and representatives of other interests such as the cultural, educational, ecological, and community-based ones.

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[17] http://www.dnp.gov.co/

Figure 2 shows a few historical milestones relative to decentralization and planning in Colombia (many of the dates taken from Oliva et al, 1998).

Figure 2: Time diagram of decentralization and planning in Colombia

1991
New constitution
Defines Colombia as a
"social state of rights
organized in a republic
that is unitary,
decentralized,
participatory and
pluralist"

1968
constitutional reform adds
technical or service dimension
to decentralization; law 33
establishes mechanisms to
transfer funds from central
government to departments
and municipalities (situado
fiscal and consesiones a
municipios)

1978
end of the succession
of power between the
liberals and
conservatives

1986
end of the power
quotas system

1993
departmental
governors are
elected by popular
elections

1995
Ministry of Interior given the
responsability (but not the
budget) to define policy
regarding territorial autonomy
and ordenamiento

1886
Old constitution
Defines Colombia as
politically centralized
but administratively
decentralized

1957
Formation of the Frente Nacional
in reaction the explosion of
violence in the country. This
explicited and officialized the
concentration and sharing of
power between the two main
political parties through power
quotas

1983-1987
various laws and
decrees promoting
fiscal
decentralization and
allowing the increase
of municipalities'
income

1988
Mayors are
elected by
popular
elections

1992
DNP restructured
and given the
responsibility of
controling and
evaluating the
decentralization
process

1994
Ley organica del plan
de desarrollo

1997
Ley 368 de
ordenamiento territorial

16

National planning efforts have led to extremely valuable plans, thanks to planning legislation and the 1991 constitution that encourages participation and pluralistic-ness. Another participatory exercise akin to planning are the *Trochas ciudadanas*, or citizen paths, organized by the *Consejo Nacional de Planeacion* (CNP), in preparation for the presidential elections. The are a means for civil society to give advice to the presidential candidates on what they should include in their campaign and how they should tackle certain political, social and environmental issues. Two of these have been held up to now, the first in 1998, and the second in 2001, leading to documents that are available to the public. They are conducted through meetings with members of the civil society, NGOs, and the government in territorial entities, as well as in forums and meetings with experts. Participants explain what kind of country they want to live in and what their suggestions are. The documents present the different points of view, and in the case of issues that are controversial, which is the position of the CNP.

Another extremely effective participation mechanism has been the *Consejo Comunal de Gobierno*, held every Saturday in a different city, usually a departmental capital, and broadcasted live on national television and radio. These meetings group many of the stakeholders of rural development, including leaders from regional corporations, departmental and municipal governments, community-based organizations, farmer and workers unions, environmental and women's groups and many more, who interact with the president and representatives of all of the Ministries. For each sector, the Ministries present reports of national programs and indicators for the department in question. Questions are then raised by the stakeholders who usually suggest mechanisms to attain the objective (or solve the problem) they raised. The suggestions are then discussed live, usually leading to some kind of engagement by the Ministry to at least investigate the different options raised in the meeting. Although there is a moderator to control the length of the interventions, these meetings are largely facilitated by the president of the country himself, who asks the ministers to respond to such and such a question, and gives them "homework" on things to investigate or solve after the meeting. These meetings have an extremely positive impact on people's motivation at every level. In many cases, in preparation for the meetings, leaders hold meetings with their communities to discuss their intervention. A great proportion of the people in the area concerned by a given council meeting watch or listen to "the show", and therefore are exposed to the deliberations. They often continue the deliberations with their colleagues or friends after the meetings. People feel legitimately concerned, and they often see or hear their community or union leader speaking on the radio and appearing on television. They hear about the issues that concern them and about the different efforts being deployed. At some level these meetings reflect a real use of the scientific method because if some plan is not working then the agencies involved hear about it directly from the people effected, as long as there is no censorship or manipulation of interventions.

4   Learning to fill the gaps between actual and desired conditions

While the last section talked about the progress that was made in terms of planning in Colombia, this section describes what still needs to be achieved. A detailed diagnosis of the effectiveness

of rural development, describing the actual conditions and using statistics, is out of the scope of this chapter although we refer readers to Vargas del Valle, 2002, for an appraisal of past rural development programs, to World Bank, 2002b), for a report on poverty, and to World Bank, 2002 a) for an analysis of country assistance strategies. With the violence that still thrives in Colombia today, and with the poverty and social inequalities that remain, it is obvious that Colombia has not yet achieved its desired conditions. Although planning has made important contributions to development, many groups of the population still feel excluded from the goals of policy decisions, especially the poor, the populations of rural areas and youth.

4.1 Some indications that planning is not fully taken advantage of

Territorial planning has been, for municipalities, the first serious long term planning effort. Law 388/97 and its corresponding decrees established June 2000 as a deadline for the approval of territorial plans, basic plans and schemes. However, at the middle of 2003, only 740 of the 1096 municipalities had their plans approved (Porras Vallejo, 2003). Sixty-eight were still in the process of formulating them, and the remaining ones have them in the process of approval. For many municipalities, the delay in the elaboration of the plans was caused by a lack of technical and economical resources. Other causes include a lack of political will, capacity of management of leaders, problems with governance and public order, or simply because of a lack of interest in the process.

One of the leftovers of central planning is the fact that municipal and departmental planning are often perceived as homework given by central government. Indeed, the guidelines for the preparation of these plans are written by the central government, which is perceived by Costa *et al.* (1998) as a form of centralized control. Municipalities must have their plans examined and approved by the level above, and the examination is often more on issues of form than content. The goal of the planning exercises, which is to articulate goals, actions, partnerships, and control mechanisms towards desired future conditions, to make choices and to self-organize, is often set aside at the expense of an intermediate goal, which is to comply with the requirements. As an indicator of this, the elaboration of plans is often contracted out to consultants who coordinate citizen participation (often also only to comply with the requirement from central government) but with little participation from the administration itself. Plans elaborated in this way are not used as a learning and management tool. Plans of different administrative levels are very rarely articulated, and development plans often are not articulated with territorial plans. Although clear guidelines for planning from the central government are necessary, each level has to genuinely take ownership in its planning processes, with an appropriate attitude that encourages learning.

As we mentioned before, municipal units of technical assistance (UMATAs) are structures created through decentralization. It seems logical to have rural technical assistance planned, prioritized and managed at the municipal level, which is the level of government level closest to the rural population. However, these units have been heavily criticized for being inefficient or for being used as a political instruments by individuals of the administration to return political favors. In many cases, the units exist to satisfy the legal requirement of having them, but the extension offices are not given the necessary human and financial resources to conduct the necessary visits in rural areas and give satisfactory services to beneficiaries. The units are often

seen as an end in itself rather than a means to achieve development goals. As a result of this, it is not uncommon to hear the statement "*rural technical assistance does not work*", or to hear comments on the inadequateness of municipalities to coordinate such a service.   Planning and monitoring of rural technical assistance by its beneficiaries is one of the ways to improve this use. The municipal development plan (PDM) includes the municipal agriculture and livestock program (PAM), itself including the municipal plan for rural technical assistance.   The elaboration and regular monitoring and evaluation are supposed to be conducted by the municipal council of rural development (CMDR), which includes representatives of the beneficiaries themselves.   There has unfortunately been an over-relaxed attitude with respect to these planning, monitoring and evaluation mechanisms, and the vast majority of municipalities do not have functional CMDRs. The Ministry of Agriculture, having recognized the importance of rural technical assistance and of its planning, monitoring and evaluation, has organized a vast training campaign, following the revision to the legislation on the subject.   However, municipalities must become fully conscious of the role of these units in the rural development of their territory, take ownership in the planning of their activities and distribute responsibilities and resources accordingly.

Oliva *et al*. (1998) mention that difficulties in decentralization come from both the fact that central government is reluctant to letting go of some of its responsibilities, and on the other hand that territorial entities often do not have the capacity to take them on.   Taking on new responsibilities is a learning process, filled with obstacles and temptations that can side track the process. Citizens also often do not take their due share of power. Participation refers not only to individual citizens, but also to institutions and organizations. Colombia has seen a rapid increase of public participation, as many participatory practices are encouraged by central government. Participatory planning is not a theoretical concept any more, and the country has this year organized its seventh national symposium on the subject. However, in practice, there is great variation in the quality of participation. Two major related factors influence this quality, the first is the willingness of leaders to give their components some autonomy (thus transferring some of their power to them) and the second is the willingness of the components to assume more autonomy and the associated responsibility.   Institutions still interact more with the central government than with each other, and expect the central government to take many responsibilities.   This is also true in many municipalities and departments.   The articulation between the actions of components, and the self-organization of many groups could be very much improved. Central government continues to make contributions to rural development but these are often decided on a case by case basis, in programs where certain projects are accepted and others not, leading to very specific impacts.   On the other hand, a large part of the investments made by central government or policy responds to pressures of influential groups.

Governmental planning and the management of territorial entities such as municipalities, departments and a country, are extremely vulnerable to the political game.   Often, power alternates between opposing parties from one mandate to another, and a given party tends to hinder projects that have been started by the other party, even if it actually contributes to the goals of the same population they are supposed to represent.   In addition to the individual interests that politicians are vulnerable to, the desire to be win (not necessarily an election, it can be a debate or a popularity survey) distorts politics a great deal, even if the only thing at stake is

a person or a group's ego.   Winning the election, or having the party be re-elected, becomes the main objective and not a means to achieve development goals.

Chapter 8.2 of this book talks about "The elephant in the living room". In the political context of Colombia, the elephant in the living room is composed not only of the relentless population growth emphasized in that chapter but also of all the illegal activities and processes that influence economies and decisions but who's existence is not officially admitted, and which will most probably not be mentioned in any plan. They create powerful obstacles to planning and the use of information, because we are not supposed to know about them. They include corruption, traffic of narcotics, contraband, armed groups, the illegal use of natural resources and any influence to benefit particular groups while possibly disfavoring large part of the population. In Columbia the huge financial resources available to those associated with illegal drugs is a particular problem, but not the only one.

We tolerate and live with these processes by convenience, obligation or fear. When formal processes are dysfunctional, too complicated, and too expensive or when laws are impossible to respect, we see the development of parallel processes which are sometimes illegal. We see parallel justice systems when people cannot trust the official justice.   We see parallel administrative systems, or accelerated channels, when the official channels are too slow or restrictive. We see parallel commercial links to avoid paying import or consumer taxes. When personal consciences don't intervene, and when a law cannot be enforced well, irregular activities develop, sometimes simply because the illegal ways are easier and less costly. Then, these processes are very difficult to legalize. Information and any type of diagnosis showing the process and the lack of law enforcement become unwelcome, both by law authorities and by the actors involved.   Whatever the situation, information and stakeholder participation are unwelcome when there is something to hide. Corruption not only causes an important leakage of resources outside the system, but it also undermines both official control and self-correcting mechanisms, potentially leading the system into chaos. Powerful illegal actors infiltrate political systems to drain public resources and gain control over justice mechanisms. In a system that is sufficiently dominated by these "parallel" processes, there is a natural selection for leaders. The honest people tend to avoid politics, and the ones who want to access political leadership often have to fulfill conditions imposed by the "parallel" actors[18]. In Colombia, armed groups still heavily persecute and often kill political leaders or candidates who do not want to go along with their plans. Many consider the drug traffic in Colombia, and the delayed response of the judicial system, to have seriously damaged the values of many Colombian institutions and individuals.

Colombia's new National Development Plan, presently in the process of approval by the congress, has a special chapter on improving the state's transparency and efficiency. Proposed improvement measures include improving salaries of public servants while having higher standards for their recruitment and promotion, encouraging the monitoring of municipal finances by citizens through the formation of *veeduría* committees, the development of an "on-line government" where contracts and public expenditures would be accessible to the public, and a

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[18] German Castro Caicedo (2002) describes how in the departments of Arauca and Casanare, with large oil exploitations, political leaders are forced to give a significant part of the oil taxes to both guerilla and paramilitaries, and that they have to agree to this before they are even allowed to present themselves to elections. This is only one example of the influence that illegal groups have on politics.

modification of the procedures for assigning contracts for public goods, infrastructure and services (Presidencia de la República y DNP, 2003).

4.2   Describing the obstacles with a systems approach

What can go wrong in a social system? Meadows (1997) mentions that the paradigms or mind sets underlying the system are the most important factor in the determination of its outcomes. How can the logic of the players influence these outcomes? In his book "The art of the long view", Schwartz (1996) draws the main lines of a method to explore, mentally, scenarios of possible futures. He suggests the drawing of different plots from a series of driving forces, and even suggests considering different types of logics, that can greatly influence how futures might evolve. He mentions that three main logics show up constantly in modern times, which he calls respectively "winners and losers", "challenge and response" and "evolution". These are useful to explore possible futures, but they can also give us insight on the reasons why we observe certain behaviors.

4.2.1   How logics can affect system outcomes

In the "winners and losers" logic, players are polarized in opposing sides that seek either control of resources, domination of the economy, power to decide or simply winning a competition. The entire logic is based on competition and conflict is inevitable, although sides often find a balance in power. This logic is usually found in present political systems, where democracy is expressed through voting, because only a given party or candidate can win an election. Such a logic is especially dangerous when the overall goals are forgotten and when winning becomes the main goal. Under a winners and losers logic, the most motivating factor is the presence of an enemy that can be a person, group or country, or even a problem such as poverty, drug traffic, pollution, terrorism, etc…If there is no enemy, people under this logic will create one, base their actions on combating it, and will argue for support based on the fear of it. An example illustrating the importance of the outcomes of this logic was the Cold War, which influenced international and national politics and justified the support to repressive dictatorships. Even the American space exploration program had a competitive logic behind it, as the principal motivation for the USA was to get to the moon before the Russians (Schwartz, 1996). Although such a logic can be motivating to the point of doing extraordinary things (such as flying to the moon or beating sports performance records), it is detrimental to the development of society as a whole. This logic unfortunately continues to be promoted by the United States with the war on terrorism and the creation of "the axis of evil", which incidentally has allowed "the axis of good" to increase its control over oil resources. The United States also funds a war against drugs in Colombia, labeling this funding as aid. The adoption of a winners and losers logic by producers and consumers is, in some way, one of the assumptions of models constructed in neo-classical economy, in the sense that players are assumed to search for their own benefit only. Because these models have been used to explain the behavior of the economy in many (but far from all) circumstances, the assumptions of competitiveness and selfishness have mistakenly been taken for values that should be adopted. Competitiveness and the quest for self benefit are necessary, but they are dangerous if not balanced by a sense of responsibility towards the rest of the system.

The type of plot that Schwartz calls "challenge and response" refers to the adjustments and reactions of a person or group to a series of difficulties or changes in conditions. Many of the examples given by the author are from Japan, where the word "optimism" means "having enough challenges to give life meaning". Development can be seen, in this logic, as the improvement of the person or group after overcoming the successive challenges. Schwartz mentions that when companies adopt this type of mindset, even only in planning exercises, they start looking at each difficulty as an opportunity to learn and take consciousness of the importance of being able to count on the public to work with them to solve problems.

The "evolution" plot described by Schwartz considers that conditions change gradually from one state to another and that certain conditions, such as technology or urban construction, grow in a biological fashion. These plots always evolve in one direction, usually either growth or decline.

However, with a planning point of view, we can see that systems are unlikely to go in the desired direction if they don't know where they want to go:

- The system can be dominated by a "winners and losers" logic and lose sight of its desired conditions. The inclination to win or to be the best can divert its attention and completely side-track the system and its players. This is what often happens in political rivalry between parties.
- The system can benefit from a "challenge to response" logic, but if it loses sight of where it's desired future conditions, it can be perpetually adjusting without necessarily improving
- It can be obsessed with the evolutionary logic of growth, leading to the depletion of resources and to dangerous, self enforcing, positive feedback loops, which can then lead to serious coordination problems

4.2.2   A lack of sense of responsibility

In addition to inadequate logics, systems can suffer from social values related to a lack of sense of responsibility. We mentioned earlier that each level has three types of responsibility, towards itself (to take care of itself and eventually grow), towards the top (to contribute to the goals of its supersystem) and towards below (to ensure that its components have the necessary conditions to fulfill their goals, thus to contribute to the goals of the level in question). In addition to this, each level has lateral responsibilities, consisting of not harming or interfering with the activities of other players, and ultimately working in a complementary way with them. We will refer to this as "360° responsibility". Everybody acts both as a component and as a coordinator (or leader) in different circumstances. Even an individual who is not in a situation of leadership has to coordinate the parts of his body and his possessions. In social systems, the coordinating bodies of the different levels are composed of individuals who are given the responsibility of representing a group and facilitating interactions within it. There are coordination and leadership problems when:

- Leaders are not conscious of their coordination responsibilities and are more concerned with their individual interests, either material (leading to corruption) or emotional (which can lead to manipulation or egocentric behavior that is against the interest of the group)
- leaders forget any one of their types of responsibility.

One of the causes of lack of sense of responsibility towards the rest of one's system is the obsession for growth. Meadows (1997) pointed to the fact that growth is often seen as an important leverage point, but that it is usually manipulated in the wrong direction. Economic growth is encouraged by current macroeconomic policy, and we have seen that it has become a goal and even an obsession for some. For those in a position of economic power but also with a social responsibility, growth offers a way to, in theory at least, have their cake and eat it to, to maintain or increase their own wealth while helping others. However, many studies (??) have shown that economic disparity tends to increase with higher growth. It is officially accepted by society that the main goal of corporations and private companies is to make profit, although many question these values. Yet encouraging uncontrolled growth in social systems may be more like taking away the body's immune system against cancer, and removing the cell's self control mechanisms with regard to multiplication. Actors that are obsessed by growth and not concerned with development, systematically use their economical power or force to modify or neutralize legal control mechanisms, either in legal or illegal ways. The more they grow or accumulate resources, the more they have power to affect their surrounding to allow them to continue doing the same (self enforcing, positive feedback loop). Large corporations and economic interests use their influence on policy, in a perfectly legal manner, through the financing of political campaigns and through lobbying. Illegal actors such as mafias, armed groups that extort public resources or just plain criminals, either use force or bribery to overcome legal controls. Once a system is sufficiently infiltrated by processes related to growth obsession, it is extremely difficult to reverse the situation through only military or judicial actions. We need to keep in mind that the growth of armed groups and mafias, criminality in general, and unfair trade are themselves often only symptoms of a social illness. We will go nowhere by attacking them without attacking the causes of the illness, which lie in our exclusionary logic and deficient sense of responsibility.

In his book on "Africa and aid, how to get out of it?", Diakité (2002) describes some of Africa's development obstacles, most of which are also found in Colombia. He mentions that the most important change needed is with culture, and that we need to act on mentalities. For him, the most determinant factor of underdevelopment is the culture of the possibility of rapid and easy gain, which tends to undermine values of effort, rigor, patience and humbleness. It tends to maintain the culture of assistance. The heavy foreign aid that Africa received during the Cold War, without any conditionality or requests of accountability, has contributed to enhance this culture of easy and quick gain. It is however important to note that this culture is also enforced in the northern occidental capitalist environments, where easy gain was (legally) achieved in the 1990's through stock exchange, currency transactions and investments in high yielding pension plans, and where the CEOs large corporations, movie and sports stars make millions of dollars per year. Recent scandals in the United States and with multinational corporations remind us that illegal channels to quick and easy gain are not restricted to developing countries.

Problems can also arise when feedback loops are missing or are not working properly, compromising control mechanisms and learning processes. This can happen either because of a lack of human or financial resources, or following a lack of will to learn or control certain activities. "There is a systematic tendency on the part of human beings to avoid accountability for their own decisions. That's why there are so many missing feedback loops" (Meadows, 1997). Here

again, the lack of sense of responsibility is a determinant factor. Another cause of dysfunctional feedback loops is when communication channels are too numerous and participants are confused. Sometimes, sectorial policies are inconsistent with each other and players receive contradictory messages. Fear is another important cause of missing feedback related to justice, and is used by illegal actors to continue their activities.

5   Mind-sets and planning practices for development

The obstacles to development are not always as obvious as an elephant in the living room, they are sometimes small and insidious like cockroaches in the kitchen. As we mentioned before, the most important leading factors in systems is the paradigms or mindsets from which the goals and controlling mechanisms emerge. These paradigms include the values, principles of people in all levels, and unspoken but well integrated rules. These rules are much more determining than any of the ones included in the legislation. If we want equitative development to happen in Colombia and elsewhere, we need a change of "ways of thinking" (mentality, culture, paradigms, mind-sets), which is undoubtedly one of the most difficult tasks. But how can planning help encourage ways of thinking that can facilitate development? We think that planning, through the reflections and the discussions it involves, can help develop the sense of connectedness and responsibility required for development. Rather than recommend a "way of thinking", here is a checklist of things to consider during planning, based on the discussion of the previous section:

- Does every level understand their own long-term desired future conditions and goals? Do they understand the goals of other players and levels?
- Do leaders effectively represent their components and do they exhibit a 360° sense of responsibility?
- Do the components of a system understand the complementarity of their roles and actions in achieving common goals, and do they act accordingly?
- Which are vicious circles that we want to avoid, and which are the control mechanisms used? Are the self-control mechanisms working properly, if not, why?
- Are plans being used as learning and management tools?
- Are the communication channels within and with outside the group working properly?

We must mention that the most important mind shift can be achieved by changing the mental picture that leaders and citizens have of society and their community. In deed, our behavior is determined by our mental picture of the world (O'Connor and Seymour, 1990). If we visualize society as a system, understand the role of the different components and the interrelation of processes, our behavior is bound to be affected.

In addition to this, there are some "ways of thinking" that should simply be avoided, which are the winners and losers logic, the obsession for growth and the culture of quick and easy gain. In the next sub-sections we comment on practices that can be used during planning and that can help participants become more conscious about these issues. It is needless to say that active participation is needed for all of these practices. Various participatory planning methodologies can be used in this sense. For example, the "soft systems methodology" (Checkland and

Scholes, 1990) uses systems-thinking principles for community-based groups. A simple participatory planning method called "Visions-actions-requests between administrative levels" (Beaulieu *et al*, 2002 and 2000) addresses the definition of goals and complementary actions. Other participatory methods will be mentioned along the way.

5.1 Understanding goals and desired future conditions

We mentioned previously that development requires a logic of progression towards long term, collective goals. However, we often confuse means and ends, and the desired outcomes, or desired future conditions are too often absent from planning or from the prescriptions coming from different forms of policy. "We have substantial technical knowledge about probing means and strategies to reach objectives, but we know much less about probing ends" (Forester, 1999). This probing of ends is what vision-based planning methodologies aim for (Lightfoot *et al*., 2001, Green *et al.*, 2000). Any form of reflecting and discussing about "desired future conditions" can lead us to have a long term goal attitude. How would we like to see society (or our municipality, community, family, business) in 5, 10 or 20 years? How would we like to see future generations? Developing a common vision of desired future conditions is different to coming up with a "vision statement", a technique often used in business management. The set of desired future conditions can be quite long, should include all of the participants' input and all points of view.

There are three reasons why it is more effective to discuss "desired future conditions" rather than "problems". The first is that it is often much easier to find agreement on desired future conditions than it is on the means to get there and on the obstacles in the way. Indeed, each actor can have a different contribution to the goal, and a given problem situation can have various causes that are all important and related. The second reason is that defining the desired future conditions can allow a better inclusion of diverse contributions into the process of change, and thus allow a variety of players to take part in it. The third reason is that discussing a vision of a desired future also has a positive psychological effect on participants, in comparison with the discussion of obstacles (Bhatia *et al*., 1993, Lightfoot and Okelabo, 2001). Participants feel excited and motivated to do what they can do to reach their dream, and the discovery that their dream is shared by other influential actors brings them optimism.

When discussing obstacles or problems that are under the sphere of responsibility of participants of a meeting, these participants usually feel attacked and take an unproductive, defensive attitude. In general, focusing on obstacles tends to discourage people. To motivate action, problems must be transformed into objectives (O'Connor and Seymour, 1990). Unless we keep in mind the desired future conditions, we can become trapped into thinking that our goals are simply to overcome the obstacles. We can focus on these and forget to go where we want to go. Although overcoming obstacles is necessary, they lead to goals that are intermediate and that must lead to a higher level goal of reaching the desired conditions.

However, as pointed out by Forester (1999), the quest to learn about "what we should want" and about "value" can be manipulative. To paraphrase him, planners and politicians can use these exercises as "dialogical boot camps" to help participants in meetings to *really* know what they want. Indeed, another way of obtaining common goals if for leaders to convince their

followers to share theirs. Here again, learning and exploring common goals can be used either aiming at genuine deliberation or at manipulation. These discussions will only lead to positive development if leaders and powerful actors have a 360° sense of responsibility.

Even if common goals and desired future conditions can be found, that does not mean that they will take the system to where it will be best in the long run. In terms of territorial planning, leaders and facilitators of the planning process have to consider a range of issues, a variety of options and have a long-term perspective. The observation of similar cases in other sites, the consideration of scientific results and eventually the use of simulation models can be very useful to explore the long term consequences of the means considered by the group.

5.2   360° sense of responsibility

As we mentioned in previous sections, each system has to realize that it has responsibilities in various directions: it must insure its own sustainability and improvement, it has to contribute to the goals of the larger systems that it is part of, it has to insure that its components have the conditions necessary to fulfill their goals and it must work accordingly with the other components of the bigger system. This applies to both public and private institutions.

In social systems, the necessary attitude can be encouraged through any practice where system representatives deliberate about their respective goals with representatives of their components and with representatives of the larger systems they are part of. A first change in mind set can simply come through being more conscious of the needs and aspirations of the other players and levels, and also by realizing that they exist, thus expanding our mental picture of the society we live in. However, this is often not enough to guarantee a sense of responsibility, and for any decision that has to be made, it is important to analyze the consequences of the decisions on the various directions in the system (above, below and laterally). One must look for solutions or actions that allow all directions of responsibility to be fulfilled. Once a group agrees on general common goals, the challenge remains to find the most appropriate means to get there, thus finding intermediate goals that neither exclude, repress or harm any of the players, nor the environment. This is the least obvious, but is very much worth trying.

Planning can help players discuss the rules and control measures to ensure that the different responsibilities are fulfilled. Planning can also help individual players distribute their time and resources between their different responsibilities, which are usually compatible but require different activities.

5.3   Complementarity of actions

Systems can work either in partnerships or in complementarity with others, leading to a collective reaching of higher-level goals. Finding common goals does not mean homogenizing points of view. On the contrary, including different and contrasting points of view in the discussion of common goals encourages a variety of contributions often necessary to integrally reach the desired conditions.

Practices that can help actions of different players to be complementary include any type of discussion where participants state what they can do to reach the common goals, and describe the contribution needed from other players, either at the same or at a higher hierarchic level. These discussions offer an opportunity for leaders and influential groups to expand their mental concept of their social and environmental systems. As we mentioned in the previous sub-section, they become more aware of the needs and contributions of other players through personal contact and discussions, ntributions of other player and their mental picture of "us" expands unconsciously. They are also obliged to think of long-term implications of their actions, which also helps them expand their mental picture.

Even when governments try to please all stakeholders, by offering programs, funding opportunities and incentives within the limits of their resources, they will have limited impact if they do not enable interactions among the various players of the territory. Within the framework of decentralization, governments have a greater role in enabling than providing services (Helmsing, 2002). Consulting stakeholders separately and then deciding to whom they should attribute resources will not have the same effect as a fully interactive participatory process where players can discuss with each other, establish common goals and enable the matching of contributions of ones with the needs of others. Thinking systematically can improve the enabling role of governments, if they consider themselves as catalyzers of the interactions between players rather than the center point of "you request, I provide" relationships. A helpful practice to promote interactions is to have participants express their possible contributions to the common goal, and then express their demands or expectations from other players. Facilitating or enabling institutions (or the group members themselves) then form or coordinate partnerships as ways to match contributions with needs.

Participatory planning exercises should encourage capacity building for groups to continue to act even in the absence of facilitators. Groups should aim for self reliance but not at disconnectedness from external institutions and other players. When done in a fully participatory way, planning gives the less influential groups the opportunity to organize themselves and have access to information, and seek support from other influential groups or higher administrative levels, to support their initiatives. In a logic of winners and losers and power struggles, leaders and influential actors can feel threatened by this, which is one of the reasons why some do not insist too much on the participatory component of planning. However, when there is a convergence of goals, increased organization and external support become an enormous advantage. The convergence of goals mentioned earlier then becomes a practice that facilitates participation, and participation itself enables the convergence of objectives. The vicious circle of opacity and individual objectives can be turned into a "virtuous" circle of openness and mutual objectives.

5.4 Encouraging self-control mechanisms in components

Control includes all mechanisms that either promote or restrain certain actions. Norms and legislation define actions that are acceptable or not, but planning also has to foresee what should be done when norms and laws are not respected. Control does not only restrain itself to actions that are illegal but applies to any process that should be moderated. In social systems, very special care must be taken with control mechanisms, because if they are dysfunctional, players

either lose consideration for the rules or lose trust in the controlling institutions or individuals. As we mentioned previously, an adequate degree of control must be found, because too much control can impair actions of the level below, but too little control can lead the system to chaos. What needs to be strictly avoided is control for the sake of it. It is much more efficient to encourage self-control mechanisms than to continuously apply control mechanisms from the top.

One way to encourage these mechanisms is to have players fully understand the goals that are aimed at. Control mechanisms include official and unofficial rules, but if their objectives are not well understood by players, the desired results will not be obtained. In the case of restrictive rules, players always seem to find ways to go around the restrictions, and in the case of incentives, there are almost always abuses. However, the behavior of those who fully understand the ends of a given set of rules is usually compliant, even when it is against their short term and individual interests.

Sometimes the "ways of doing" follow a number of implicit rules and contribute to a larger definition of "institutionality" (Perrico and Ribeiro, 2002). It is very important to develop such "ways of doing" in order to have functional processes without being dependant on a leader or facilitator. Such forms of organizing allow groups to conduct meetings, share tasks, communicate and resolve problems even when they have no official leader or when the leader is absent. Through these rules and "ways of doing", part of the control of the leader above is "decentralized" and transferred to the players of the level below, who also take part of the responsibility. The good functioning of these forms of organizing requires trust among players, not only trust in their honesty but also trust in their capacity to fulfill their engagements. These can take time to become fully functional, as participants must learn to function in that way, but once the codes of practice are well integrated, they can apply them in new working and organizing relationships. These relationships, codes and ways of doing are also part of social capital (Pretty, 1998). However, a manipulative leader can shatter these organizational links with the (sometimes unconscious) objective of gaining exclusive control on its components. If leaders expect their followers to follow rules without repression, they have to set the example and respect them themselves.

If the components do not have the conditions necessary to reach their own goals and to participate in the to the higher-level goals, they are less likely to follow the rules and to make any contribuions, especially if they feel that the higher-levels are not concerned with their well-being. This is illustrated by the raise in criminality that accompanied the raise of urban poverty in many countries. Society has to turn to repressive control measures against members that have inadequate conditions and that feel abandoned by it, thus feel no responsibility towards it.

5.5   Using plans as learning and management tools

As we have seen in section 2, learning can happen through attentive monitoring and evaluation, in a continuous process of follow-up and adjustments to plans. Plans must be used as management tools and not considered as an end in themselves. However, the follow up to planning has to be made simple, or else it can make management heavy, inflexible, and discouraging for participants. Effective monitoring and evaluation procedures can consider both the actions conducted and their effects. Monitoring and evaluation includes verifying the effect

of actions, allowing players to learn from successes and failures, and to adjust activities and norms included in the plan. It is also an opportunity for the individuals and organizations that participated in the planning to continue to work together in a regular fashion and to develop operational linkages. It is also an opportunity to collect information which will useful for future plans. In this sense what we are advocating is, again, to make the entire process more scientific (using explicit objectives as hypotheses and testing their results) and additionally to include the tools of systems science (including especially feedback loops) to make the entire process more powerful and effective.

Administrators and civil society councils should use the evaluation of previous plans as a basis for the diagnosis of any new plan. To simplify monitoring and evaluation and the articulation between plans, plans should have clear goals and desired future conditions, and have identified indicators of progress. Where possible, planning and follow-up should work as much as possible with existing institutions, committees, councils, and other structures to avoid duplication and having members of these entities attempting to undermine the new efforts.

Local learning groups, related but not necessarily dependant upon governmental structures, can be created by community residents, and can be supported by local governments. These can include participatory research and experimenting groups, machinery rings, comarketing groups and community food cooperatives (Pretty, 1998).   One can find various reports of exploration of local learning processes in East Africa to help farmers and extension workers cope with the decentralization and privatization of agricultural extension services in Lightfoot et al. (2001),. One can also find methodological suggestions, which include elements of vision-based planning. Participatory monitoring and evaluation is an important component of collective learning processe. Learning alliances can be created between groups and various institutions (Lundy, 2002), and stimulate complementary activities that could not be conducted only locally.

5.6   Exchanging information

Information is an important input to planning, as feedback loops depend on it. With the word "information", we include any observations, data, documentation, maps, information systems and decision support tools that can be generated by diverse individuals or institutions. But to be useful, this information has to be fed into one of the active feedback loops used for learning and self-control.

In many cases, decisions are adequately taken based on intuition and local knowledge, which is itself fed by a multitude of feedback loops through learning processes. Local knowledge and intuition are based on the experience of people and on the information accumulated and interpreted in their minds over time.   In many cases, especially where there are no conflicts of opinion, local knowledge and intuition are sufficient.   However, there are opportunities when additional information is necessary, for example where there is a divergence of opinions or when there is uncertainty on what should be done. In these cases, diagnosis that are based on the players perceptions need to be supported by trustworthy information from secondary sources, surveys or measurements. External or new information can become extremely useful to expand the range of options being considered, and to explore the consequences of these options.   However, in situations of power struggles, less influential

players such as poor rural people often do not have the same opportunities to access information than the more influential players. We need to develop mechanisms to facilitate this access help rural players increase their capacity to be able to use external information effectively.

However, all of us have seen or experienced situations in which information is accumulated without being used efficiently for planning or decision support. Sometimes, much energy is spent in digitizing, organizing, correcting and updating information, and then when particular information is needed for a particular decision, we find that it has not been included in the database used for development. Sometimes, we are in a situation where the need for the information that we are collecting has not been defined clearly. To prevent the blind accumulation of information, we must carefully define the questions to which we want to respond. There are two types of questions arising in planning, the ones for monitoring and evaluation and the ones for defining (or adjusting) actions, partnerships and rules. The monitoring and evaluation questions, which can lead to the formulation of indicators, include "How far are we from the desired conditions?", "Why is the present situation the way it is?", "How would the situation be if the present tendencies were maintained?" "What is being done about it, and how is that helping?" "How are our partnerships working out?" Are the present rules well adapted to the situation, and are they allowing us to function properly?" The questions for defining actions, partnerships and rules include "Which are the conditions that we want to improve, and what are the available options?" "Which are the most appropriate actions for a given place?", "Which would be the best location for a given option?" and "what would happen if we chose such and such a strategy?" Geographic information can become very useful when working over an extension of land, ranging from a single property, a village, a country or a continent. It should however be used by local players in a learning and empowerment process, rather than having these players simply participate in a planning process that is managed by technical professionals (D'Aquino *et al.*, 2002).

There is, however, one source of information which must be considered by all planners and participants at the start, and comprises previous plans and any records of their monitoring and evaluation.

Information is useful to answer questions related to development, but it can also help to strengthen the relationships between institutions and players, because it can be shared at a very low cost. However, we need policies that facilitate rather than restrain the accessibility to information. Indeed, the lack of resources has impaired the publication of some information or has forced some institutions to fund their operations through selling information. But part of national planning could consist in determining which information is of primary importance for the country's development and should be considered as a public good. In Colombia, statistics and data derived from census surveys are provided or commercialized by the National Administrative Department of Statistics (DANE). Basic maps and information on topography, land tenure, land use and land use potential are provided by the Instituto Geográfico Nacional Augustín Codazzi (IGAC), which is now a branch of DANE. Information relative to hydrology and climate are provided by the institute of environmental studies, IDEAM, which is a branch of the Ministry of the Environment. Information on prices of agricultural products is provided by the Corporación Colombia Internacional (CCI), MADR and DNP. Regional corporations often have lots of information on their region, sometimes they sell it but many times they are not able

to share it because the rights are reserved to the institution to which they have purchased it. A general considertion of the needs to make data from different ministries compatible is provided in Hall (2000). (Chapter 6 of our book)

Another important source of information for development officials is the scientific community. However, development players usually find that the results of scientific research is not accessible to them, or that it is available in forms that they cannot understand. Scientific results usually go through a chain of simplification and extension before they trickle down to local players. Scientists and local players are seldom in direct communication, except in specific development-oriented research, usually done in specific localities. Planning can serve as a very practical mechanism to allow scientists and development players to interact and define hypotheses and questions together. Scientists can take part in support groups to the commissions that do the follow-up and monitoring to plans and to learning groups, thus learning together with the players in an exciting way. However, scientists tend to avoid linking directly with politics, often because they distrust the political system, or because they fear that politicians will use their results in a political battle between parties or to increase their popularity.

6   Conclusions

Colombia has some of the most explicit legislation in Latin America in terms of participatory planning. While planning and development are inseparable, leaders and individuals in Colombia and many other countries need to accompany the existing practices, methods and laws with mindsets that allow development of society as a system. These include:

- Having a logic oriented towards achieving long-term, collective goals and reaching desired future conditions
- Having a 360° sense of responsibility
- Understanding the complementarity of their roles and actions in achieving common goals,
- Favoring control mechanisms (with a preference towards self control rather than control from above) to moderate undesirable, self-enforcing processes.
- Using the scientific method to generate objectives as explicit hypotheses, and then testing whether or not these objectives were achieved, enhancing feedbacks to increase the probability that they indeed become enacted
- Growth by itself should cease to be the goal but rather specific goals should be identified and then growth should be examined as to whether it contributes to this goal or not.

Simple deliberative and goal-oriented planning practices can help reinforce these mindsets. These include the discussion of long term desired future conditions, the contribution that each individual or group can give towards the goals, and what contributions they expect from others. Coordinators at different levels can use the contributions and expectations of their components to articulate complementary actions within each level and among levels. Extremely important practices also include using planning as a continuous management and learning process. Control processes and learning require fluid communication and exchange of information.

In the scope of globalization, these mindsets should also have to prevail at the international scale, but the international context is (like many local and national ones) very much affected by a winners and losers logic, an obsession for economic growth, and the search for quick and easy gain. The effect that the international context has on local conditions is extremely important, but it does not make local planning useless. Indeed, through planning, groups can realize that an important part of the decisions that affect their development is under their control. The local attitude can also determine the local effect of external processes and factors (including corruption). Nonetheless, a global level reflection, and why not call it planning, is needed, in which the affected rural stakeholders must participate.

Development, either specifically rural or in general, results from a complex series of actions from very diverse social players. These players define their actions in decision-making processes which are conscious or not, collective or individual. They can make decisions in two types of contexts, either in some kind of planning, or to solve problems as they arise. Decision-making by territorial or political institutions constitutes, for scientists and information providers, an opportunity to put their results to the service of development and management of natural resources. For them, it's an "entry point", a link in the chain between research and development, to which they can "hook on". The scientific contribution to social objectives can be facilitated by planning processes; it is more difficult for scientists to contribute to solving problems as they come along, in which case the urgency seldom leaves sufficient time to consider different options, look for relevant information or to communicate questions to the scientific community.

In Colombia, we expect to be able to develop an interactive link between research and local development through a network of support to municipal and departmental planning. CIAT and the Ministry of Agriculture and Rural Development have been collaborating on this issue, and will soon set up a network principally aimed at supporting the planning and monitoring of rural technical assistance and technology transfer, in the scope of municipal management. Support groups composed of farmers, scientists and extension agents and policy makers and commercialization will be linked to rural communities through various information and communication technologies (ICTs), and will contribute to planning as well as providing options and give advice. We expect these initiatives to help rural communities and ourselves reach desired future conditions of better livelihoods, better communication between administrative levels as well as between rural communities and scientists and extension agents. At least that is one of our hypotheses, and by trying this out and watching what happens, we will be able to validate or refute it.

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