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Planning Models and research policies for the fight against hunger and poverty

The End of Hunger 2005

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CASE STUDY

PLANNING MODELS AND RESEARCH POLICIES FOR THE FIGHT AGAINST HUNGER AND POVERTY

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The first sections of this chapter deal with Man-Nature relationships within the framework of research into development. This is followed by a review of development planning models, and the definition of the new role of planners. A non-Euclidean planning model with a post-modern perspective is then proposed. The results obtained with this model in the context of international scientific cooperation within the system of the Consultative Group for International Agricultural Research (GCIAR) are discussed. To use the proposed model, the planner must understand its basic concepts, be sensitive towards development needs, and take responsibility for the mobilisation of public and private resources. The planner's system of values should be grounded in anthropological principles and born of a moral conscience that drives him to use technological innovation and research results for the true benefit of humanity. The results obtained in the region of Puno (Peru) show that the use of mixed planning models in international scientific cooperation can provide a better knowledge and understanding of real situations and more thoroughly reveal the effects of development projects. Such models can therefore help improve the planning process.

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1.- RESEARCH INTO MAN-NATURE RELATIONSHIPS

The scientific knowledge acquired in recent centuries has led to great advances in technology. As a consequence, human life conditions have undergone extraordinary change and successive improvements. Growing knowledge has allowed Man to better predict and control his environment - yet it has also produced a world in some ways ever more unpredictable and uncontrollable. This paradox lies in the fact that while the technologies arising from scientific research have allowed Man to make better predictions, they have also altered the course of events.

Historically, 'knowledge' has defined the Man-Nature relationship at different levels. Initially, this relationship placed Man and Nature on an even footing – a stage of 'contemplation'. This relationship was based on respect on the part of Man for his environment and the limitation of his attitude to that of 'to know is to know'. From the 17th century, however, advances in knowledge situated Man at a higher level, that of 'the exploitation of Nature'. His relationship with the environment was one of domination. New attitudes such as 'to know is to have power', 'to know is to do' and 'to know is to have' succeeded one another. However, a few years ago a point of inflexion was reached and the attitude 'to know is to administrate' was born when the limitations of natural resources were appreciated. An important economic variable had been introduced into the continuing process of exploitation.

The economic development seen since the beginning of the Industrial Revolution, which was based on the acceleration of technological knowledge, has allowed a large part of humanity to free itself of extreme poverty. However, some 1100 million people of the 6500 million who now populate the Earth are still its prisoners. In addition, our activities have led to environmental degradation, in particular global warming.

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Nobody yet knows which road will take us towards sustainability, but at least we have reached a new inflexion point at which "*Man highlights the need for respect for Nature as part of a real concern regarding the conditions of life of those who now inhabit the Earth, and of those to come*" (Ramos, 1993).

This return to a relationship of equality with Nature is not a return to the contemplation stage and the attitude of 'to know is to know', but an advance in Man's consciousness of his condition and the birth of the attitude '**to know is to understand'**. Based on what he sees, Man has started to doubt whether technological progress has led to true human progress. This doubt is so great that it now seems quite natural to ask whether there is not a need to re-equilbrate the process of 'knowing' so that ethical progress can drive human progress.

Table 1
Man-Nature relationships

CURRENT ATTITUDE: TO KNOW IS TO UNDERSTAND	HISTORICAL ATTITIUDES
The re-equilibration of 'to know' towards ethical progress being the driving force behind human progress.	TO KNOW IS TO KNOW (until the 17th century)
	TO KNOW IS TO HAVE POWER (18th-19th centuries)
	TO KNOW IS TO DO (19th-20th centuries)
	TO KNOW IS TO HAVE (2nd half of the 20th century)
	TO KNOW IS TO ADMINSTRATE (the decade of the 90s)

Scientific research and Man-Nature Relationship

Within the context of scientific research into development, it is important to distinguish between theoretical, experimental, basic and applied research. *Theoretical* research does not use the tool of a specific scenario and generates conceptual-type knowledge nearly always from field data, whereas *experimental* research makes use of specific scenarios in

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which behaviours are studied and measured. *Basic science* can be distinguished from applied science on the basis of intention. In basic science, the intention that motivates the scientist is that of increasing our knowledge, whereas in *applied science* the intention is to acquire knowledge for its application in activities that are not strictly scientific.

The Man-Nature relationship is the focal point in the search for sustainable development,[1] and it is analysed by *theoretical research* and *applied science.* Theoretical research generates knowledge, methodologies and concepts from the study of real situations, while applied science helps provide solutions; its basic tenet is to "acquire knowledge for its application" and "to learn by doing". The product of such research is always scientific – doctoral theses, articles and publications - or technological – the development of innovative methodologies.

2.- PLANNING: ITS ROOTS AND CONSEQUENCES

Planning has generally been used as an engineering tool; a planning idea is much more than 'making plans' or 'predicting future actions'. Indeed, the concept of planning has become enriched over time. The following is a brief synopsis of its evolution.

In the 18th century politicians mainly concerned themselves with social values, and left the execution of their decisions to experts – planners - who were able to mediate between knowledge and action (Hamilton, 1790).

The 19th century inherited from its predecessor a confidence in the capacity of the mind to understand the processes of Nature - *the power of reason* - and a confidence in the capacity of ordinary people to govern themselves (democracy).

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[1] True **sustainable development** has an important human dimension, and the concept of **sustainable human development** should be understood as a *process that empowers people and increases their options in that the benefits of economic growth are equally distributed; in addition, it regenerates rather than destroys the environment* (PNUD, 1994).

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The 20th century highlighted the import although not determining role of the planner, which oscillated between *telling the truth to the powers that be* and facilitating politicians with information, interpretations, projections, evaluations, and strategic programming.

In the 21st century, planning can no longer be understood as though it were a branch of engineering with a clear progression from means to ends; *ecological claims* clearly affect the so-called *modern project* based on reason (Cazorla, 2004).

In the ***classic planning model***, planning can be defined as an operational discipline in which planners apply technical reasoning with a top-down focus. Its main aims are: to define the problem so that it can be subjected to action policies, to model and analyse a situation with the aim of taking action, to design one or more action policies in which aims, objectives, spaces and times are laid out and the resources required made known, and to define the process of application and the evaluation procedures to be used.

The new concept of planning focuses on the search for workable solutions that satisfy the current and future needs of society. Planning is therefore more centred on the present and is always formulated in real terms. According to this new concept, planning can be understood as *the form of reasoning that links scientific and technical knowledge with actions in the public context, and, beyond this, the type of reasoning that tries to link scientific and technical planning with social orientation and transformation* (Friedmann, 1993).

Planning models

The planning models available at any point in time are intimately related to the reigning intellectual currents and traditions.[2] Each intellectual tradition places emphasis on different

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[2] The most influential intellectual traditions have been: political science, public administration, systems analysis, historic materialism, Utopianism and anarchy, the Frankfurt school, scientific administration, organisational development, the engineering sciences, sociology, institutional economics and pragmatism.

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things and have directly influenced the way of proposing actions within the reigning political order and system of social relations. They have all influenced the ways of conjugating knowledge and action, i.e., the types of planning pursued.

All of the most influential intellectual traditions of the last 200 years have brought their own ideas to planning. Some of these traditions influenced planning models very strongly. Friedmann presented a synthesis of the models coming out of these traditions according to three basic criteria: common languages (economic, social, mathematical etc.), the philosophical aspects on which the different intellectual traditions are based, and central questions of discussion on which the different traditions coincide. The four resulting models were:

- *Policy analysis*
- *Social reform*
- *Social learning*
- *Social mobilisation*

These all show the same basic concern of how to adequately link knowledge and action. The diagram below classifies these models simultaneously in two ways, as either *radical* or *conservative*, depending on the link between knowledge and the action planned, and as either reflecting *social orientation* or *social transformation*, depending upon the intention of the planning process. **Social orientation** refers to planning that makes use of a society's existing structures. By means of its institutions, organisations and leaders, new ways forward are proposed. No basic changes in society are suggested, but rather, development is sought that follows the society's current order. **Social transformation** proposes the need for new forms of planning that modify and transform society. The aim of the planning process is to promote transformation in its structure.
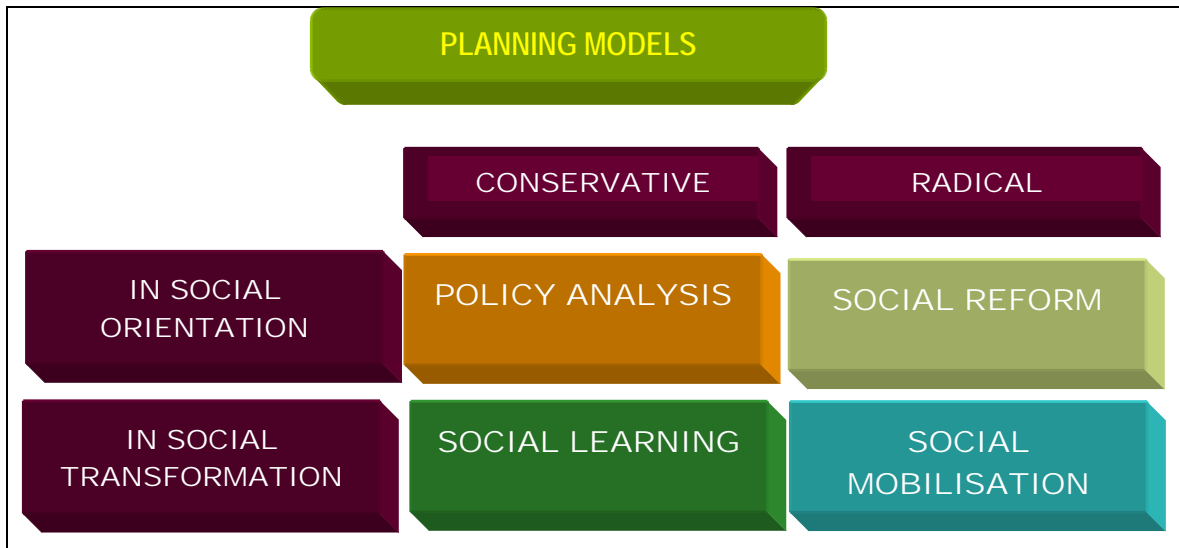
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Fig. 1: The four planning models. Source: Cazorla (2004), from Friedmann (2001).

The first model, known as **policy analysis**, gathers together the intellectual traditions of systems analysis, political science and public administration (for information on the last of these see Simon, 1976). Policy analysis defends the use of scientific theory and mathematical techniques to identify the best solutions. Planning is top-down, although the resources of the area where action is to be taken are analysed. This approach has been that used in planning the majority of agricultural and development projects (involving international organisations) in developing countries. Its main defect (which has been made patent in many projects) lies in the fact that planners take the main role both in thought and action, and there is often insufficient communication between them and the population affected by the proposed changes. This model has been used extensively in modern times and has been presented as the solution to all kinds of problems of the developing world – but with more than doubtful results. In the European Union it has given better results, although in areas such as the Common Agricultural Policy there have been numerous problems (Cazorla, 2004).

The second model, **social learning**, derives directly from the tradition of *organisational development* as part of *innovative planning*. For some, social learning is a metaphor that

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links knowledge to action, while for others it is a social technology similar to policy analysis. However, it differs from the latter in that policy analysis focuses on early decision-making and uses technical reasoning to determine possible courses of action. Social learning, in contrast, begins and ends with action. Such action involves political strategy and tactics, theories of reality, and is based on values that inspire and direct it.

The essential belief of the tradition of social learning[3] is that practice and learning are correlative processes; one involves the other. Knowledge is derived from experience, is validated in practice, and is an integral part of action. Social learning derives from the philosophic pragmatism of John Dewey. Before the Second World War, it was only to be found in the writings of Lewis Mumford. In 1947, however, with the creation of the National Training Laboratory in Group Dynamics, in Bethel, Maine, social learning was converted into a soft technology known as *organisational development* (Friedmann, 2001).

Social reform gathers together other traditions related to innovative planning: the engineering sciences, sociology, institutional economics, and pragmatism. The authors of this tradition, Keynes, Leontief, Perloff, Tinbergen, Kuznets and Hirschman, looked for ways to institutionalise the practice of planning and to make the action of the state efficient. These authors perceived planning as a scientific activity, and one of their greatest concerns was the use of the scientific paradigm for informing on and reasonably limiting policies (Cazorla, 2004). In fact, all these authors believed in directive planning, by which they reaffirmed their conviction for the need of a strong and protective state. This model has been widely used in the rural world when the state has intervened to determine the development projects and programmes to be followed. As in policy analysis, planning is top-down and does not take into account the opinions of the people likely to be affected.

Finally **social mobilisation** gathers together the ideas of historic materialism, the Utopian movement, the Frankfurt School, and Neo-Marxism. The latter is the only movement with a

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[3] Edgar S. Dunn, Jr., along with Dewey and Mumford, made up the first important group of social learning theorists.

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true doctrine; the original influence of Marxism grew because of the writings of Marx and Engels rather than the work of Utopianists or social anarchists such as Owen, Proudhom and Mumford. It is distinguished from the other traditions by the primacy of collective action and is bottom-up in nature (at least in theory) (Cazorla, 2004). Unlike social reform or policy analysis, social mobilisation takes place at the base and prizes collective will over that of the individual. Planning appears in the form of politics independent of science. Political ideas hold sway over technical actions, and planning lays aside technical reasoning. Social mobilisation is presented as a weapon with which to combat the capitalist bourgeois state. Some authors interpret social mobilisation as a class struggle, while others propose a community system based on social solidarity as an alternative to current society. For the former – Marxists - political struggle is necessary for the transformation of power relations and the creation of a new political order; for the latter – Utopianists and anarchists – the true alternative models of social coexistence are those examples that show society another way to live.

The figure 2 shows these four planning models in relation to the three key environments in the planning process - the planning, political and societal environments upon which the beliefs and main questions of each are based.
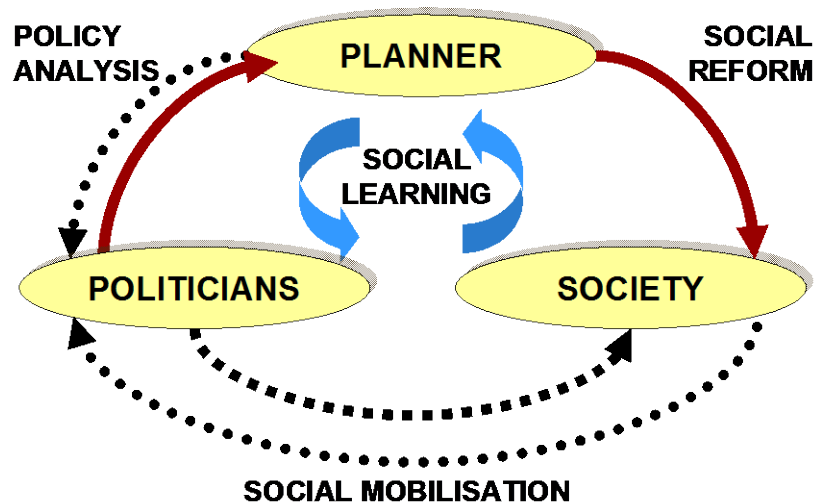
Fig. 2: The planning models in relation to the three key environments in the planning process Source: Cazorla (2004).

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3.- THE SCIENTIFIC CONTEXT AND PLANNING MODELS

Social reform is the main tradition in which planning is seen as a scientific activity. However, the scientific paradigm can be present in all models for designing and evaluating research policies for fighting hunger and poverty. The scientist therefore has a key role in the different ways of conjugating knowledge and action, i.e., in the different types of planning possible. His role as a planner directly influences the ways of proposing actions within the reigning political system and within the system of social relations directly affected by the results of his research.

The scientific context can lead to *innovative planning* involving institutional change in order to obtain a better system that produces greater welfare. Research results can generate new initiatives among the population as well as drive practices that mobilise the population's own resources for fighting hunger and poverty.

With respect to the system of social relations, four main subsystems should be considered from within which scientists can interact with the planning process:

- The *political context*: this involves the existing political organisations. The scientists faces the challenge of making his results have influence upon political decisions.
- The *public-administrative context*: this involves the different public authorities and their relationship with the scientific/technological world, as well as the actions and processes they put to work at the local, national and international level.
- The *private-business context:* this involves all private scientific and technological initiatives viewed from an economic standpoint.

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- The *social context*: this is composed of all the interpersonal contacts that occur in society outside of those involved in the previous subsystems yet necessary for applied research on the Man-Nature relationship to be undertaken.

The main characteristics of each model are examined below with respect to the scientific/research context, bearing in mind that the search for sustainable development involves *theoretical research* and *applied science*.

Research and social reform.- Planning is undertaken via classical research projects in the design of which the people eventually affected do not take part. The promoters of the research projects are mainly public in nature; the beneficiaries are the recipients of the research results and their impact. The process of evaluation is not linked to the execution of the project.

Research and policy analysis.- The political environment orientates the projects and research undertaken. The people affected can take part in decision-making via their participation in the analysis or evaluation processes. The promoters are mainly public in nature, and the beneficiaries are normally the recipients of products that come about because of the research results obtained. The process of evaluating the results and their impact orientate political decisions.

Research and social learning.- Research projects are not strict reference documents but promote the participation of those who will benefit from their results, and they assume the incorporation of modifications as a consequence of this participation. The affected persons condition the undertaking of the research projects at the level of their design. The promoters of research projects may be public or private; the beneficiaries are important partners in the research. The evaluation process is linked to each phase of the research project.

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4.- A PROPOSED NON-EUCLIDEAN PLANNING MODEL

The conventional concept of planning has been profoundly linked to the so-called *modern project*, which is Euclidean in nature. This technical planning model has governed our understanding of the world for the last two centuries. However, its inclination towards up-front design and decision-taking, as well as the claims made regarding its superiority over other decision reaching processes, are not valid: this planning model should therefore be abandoned.

Those with more reactionary views, however, might be tempted to say that if we need to abandon the traditional model we might as well abandon the whole idea of planning. One of the ways of resolving this Euclidean-or-nothing dilemma is to consider planning as a professional practice that specifically seeks to connect forms of knowledge with forms of action. Although this approximation is rather abstract it allows, following prestigious new trends in the scientific world (Friedmann, 2001, 2003; Cazorla, Friedmann, 1995), the reorientation of the concept of planning as something different to engineering. It allows us to think in terms of a non-Euclidean planning model and its relationship between knowledge and action (Friedmann, 1993). In this context it becomes necessary to qualify the evaluation of all actions taken as either good or bad. However, this evaluation is not something that occurs after actions are taken or their results are known, but rather forms part of them. While the product of an action is simply a product, the goal of that action cannot be separated from the person undertaking it - and some people do bad things very well. As Aristotle said, good practice is an end in itself. The criteria for judging a product (good or bad) are technical in nature. For example, a computer programme for a geographical information system (GIS) must, among other things, have the goal of integrating different types of mapped information. If it does not do this accurately enough it is judged to be poor and cannot be considered an adequate work tool. Thus, its technical evaluation is intimately tied to the end for which it was produced. However, things are different when we consider human actions; we often do not evaluate the immediate

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perfection of the action performed. As bad as it may be, a freely performed action may have good attached to it. Praxis – human action - does not focus on the perfection of an external act, but on the perfection of the person himself (Llano, 1988). The introduction of this concept of action in the Man-Nature relationship is the first component in this new style of planning, and is in agreement with Spaemann (1983) in that that which is naturally unjust cannot be the functional optimum. In other words, we should not necessarily do all of that which, technically, we could do (Ramos, 1993).

The notion of care as part of an action is included by Llano (1988) as one of the keys of this new, post-modern sensitivity: "the rationalist and one-dimensional attitude of dominion must be substituted by 'care'". This idea is quite unlike rationalist thinking, which can be deaf to environmental needs, yet it does not embrace ecological radicalism. As a guiding concept of action, care never stems from arrogance but provides an integrated view of problems and their solutions (Ramos, 1993).

The concept of care at the operative level is reflected by respect at the intellectual level. As Millán Puelles said: "*Respect for Nature is a natural, human need, a basic requirement of our being, the realisation of which appears to us as a value in and of itself*" (Millán, 1984).

At the operative level, the introduction of these ideas leads to an integrated view of reality (a consequence of doing good) with a background of respect - the fruit of knowledge and care intricately linked to action.

This type of action leads to the discovery of solidarity. Consequently, the different social spheres (economic, environmental, public, private etc.) of life need to be given a human dimension. An action that helps us discover and resize these social spheres, where solidarity is constructed day by day via participation in actions, requires that planning be regional or local in nature. We are thus faced with an interesting concept of social spheres with both physical-environmental components and a human side: "*The responsibility for*

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the negative effects of human actions should not simply be lost in the anonymity of expert planning, but should lead to the search for better, wiser solutions that involve people, and which are more executable (Llano, 1988).

Solidarity is not understood here in the mere sense of working *for* others, but *with* others. The above-mentioned social spheres allows us to connect the actions of one person with those of others. The main idea is to try to unite actions in a common project. Participation by all stakeholders is very possibly the most serious demand of solidarity; participation should be sought immediately after (or perhaps even during) the meeting of basic needs (Ramos, 1993).

Social learning: network methodology

Putting a non-Euclidean planning idea into practice in a post-modern context requires the definition of the local or regional area where actions are to be taken and the allowance of all the time they should require.

Network methodology (metamodelling), on which the proposed model is based, has five characteristics: it is normative, innovative, political, negotiatary, and is based on social learning.

- INNOVATIVE: It focuses on the present and on the necessary changes to each step in the planning process. It is more concerned about the mobilisation of resources than their assignation.
- POLITICAL: Understood in its widest sense as allowing human activities.
- NORMATIVE: The planner must have fundamental values that guide his actions.
- NEGOCIATARY: Planning is based on the exchanges between all participants via dialogue and mutual learning.
- BASED ON SOCIAL LEARNING: Experience shows that the planning model, as part of social learning, develops the above characteristics.

The new role of the planner: "the businessman planner"

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Planners (or multidisciplinary planning teams with a wide knowledge base) are now seen as responsible for the actions taken in the planning process. This invests them with a new, more enterprising role – a business function. They are therefore responsible for the processes in their charge. These "*businessmen planners are mainly mobilisers of the resources that seek to focus public and private energies on innovative solutions to problems in the public domain*" (Friedmann, 2001). Planners must therefore have the necessary knowledge of how to accomplish this.

Once the planning time and the area to be affected is decided upon, social learning can begin. The central tenet of this is that effective learning comes from the experience of change. The population affected by the planning process should take an active part in it; this helps validate the knowledge its members posses and initiates a period in which planners and local people learn from one another (Cazorla, 2004).

Social learning requires certain values and principles be maintained so that errors are not used to advance partisan views. When an action fails to meet expectations, the strategy employed should be questioned, as well as the values that led to the action being taken. The view taken of the reality of the situation should also be re-examined. This requires a type of courage that only 'businessman planners' may be able to muster. This approach to planning would appear to be adapted to the demands of the world in which we live (Friedmann, 2001).

This type of planning tries to merge the time and the space of planning with the action itself. It is based on social learning and has a normative nature in the sense that values are held (such as care and respect for the environment) that demand the planner tell the truth about the situation of a population – an often difficult task. The 'businessman' role of the planner means that some of his activities are political in nature, i.e., he is forced to use strategies that will ensure the delivery of vital resources if some actions are to be undertaken.
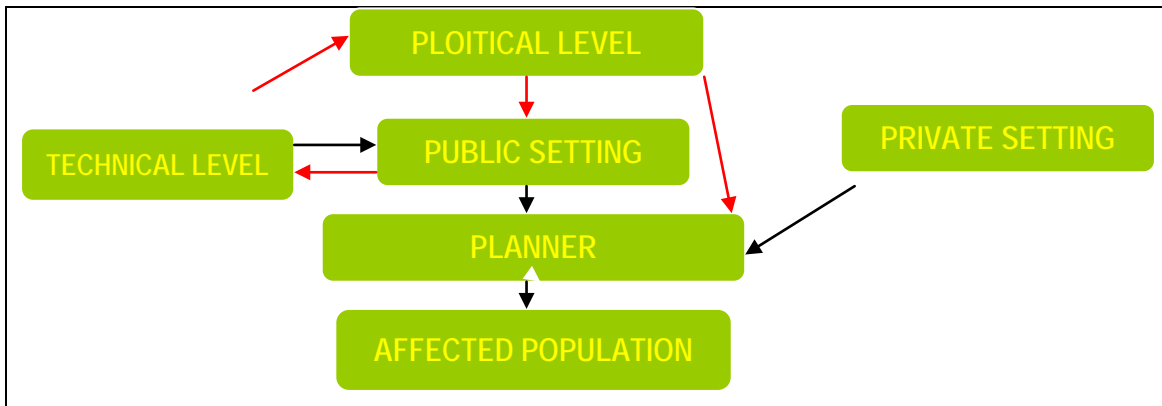
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Fig. 3: Different levels of dialogue in planning. Source: Cazorla (2004).

5.- A CASE STUDY: A MIXED PLANNING MODEL USED IN THE SETTING OF INTENATIONAL COOPERATION

This section presents a case study in the area of human sustainable development and the fight against poverty. The planners had to understand the proposed model well since they had to assume greater responsibility in the mobilisation of public and private resources; this understanding stemmed from a feeling of solidarity with those for whom they worked. In this system of values, the planner must be equipped with a moral conscience that drives him to seek ways of using technology and research results for the true good of humanity.

The non-Euclidean model proposed earlier was here used within the framework of international scientific research into development, under the auspices of the CGIAR system, whose aim it is to promote innovation and sustainable rural development via scientific research and technological know-how. The central tenet of the proposed model used was respect for Man and his cultural identity, accompanied by respect for Nature and the biodiversity of the study area's ecosystems.

The results obtained showed that, in the context of international scientific cooperation into development, models with a mixture of social reform, policy analysis and social learning

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methodologies can improve the quality of innovations and democratic debate, leading to improved knowledge and understanding of the effects of actions undertaken.

The study area and understanding its Man-Nature relationship

The study area was an extremely poor part of the Department of Puno (Peru). The altitude of this area ranges between 3812 m (at Lake Titicaca) to over 5500 m, and falls within the Suni agro-ecological ecological stratum. The area is home to good quality pastureland allowing potentially productive extensive stock raising. Its soils are also suitable for the production of potatoes and *quinua*.
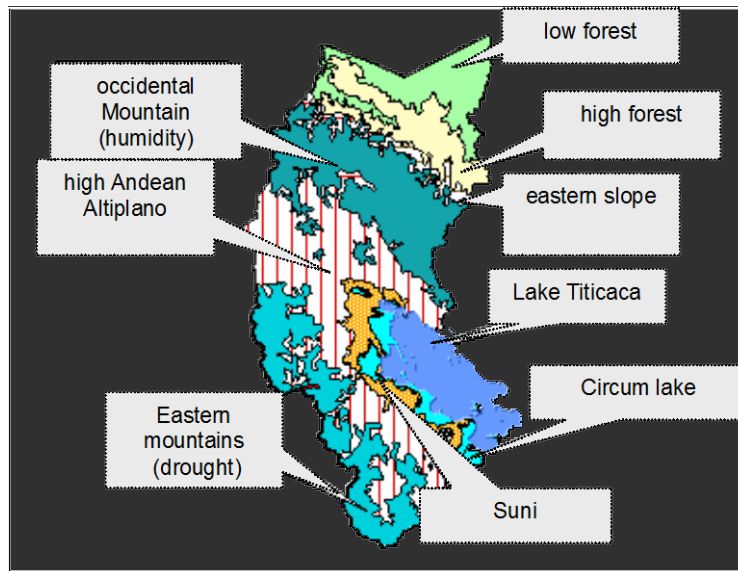

Fig.4: Ecological strata of the Dept. of Puno. Source: Puno Regional Govt.

Along with other predominantly Andean departments, the Dept. of Puno lies within one of Peru's poorest states; the poverty index is 43%. According to data from the *Fondo Nacional de Compensación y Desarrollo Social* (National Foundation for Social Development), in 1997 some 84% of the rural population of Puno lived in poverty or abject poverty (41% and 43% respectively; abject poverty means that two or more basic needs are not met). At that time, Puno's human development index was 0.48; this rose to 0.512 in

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2000 according to the Puno Regional Govt. These figures reveal the threats of food insecurity and the vulnerability of the population to disease etc. from birth till old age. Incomes are low (many people are subsistence farmers, landless agricultural workers or unemployed) and the geographical location of Puno on the Peruvian High Plain means climatic conditions are harsh and access is difficult etc.

The aim of the planning project undertaken was to encourage the sustainable human development[4] of the families of two particularly poor rural regions within the Dept. of Puno[5]: Mañazo and Illpa. The population affected was 3726 persons belonging to 621 families grouped into eight rural communities (CIP, CIRNMA, 2002).

Table 2
Location & characteristics of the affected communities

Department	Puno	Puno
District	**Mañazo**	**Paucarcolla**
Altitude	3926 m	3847 m
Location	44 km From the town of Puno and 45 km from Juliaca	22 km from the town of Puno
Characteristics	Climate restrictions, high pressure on land use, steep slopes.	Located in the River Illpa basin; an immense, freezing pampa.
Population of the district in 2000	5748	4605
Nº local communities	7 rural communities	2 rural communities
Nº of families in the project area	**331** in 7 communities: • 100 families in Huilamocco • 36 in Canllacollo • 50 in Añazani • 40 in Huancarani • 60 in Chancarani • 20 in Moroquita • 25 in Accopata.	**290** in 2 communities • 84 families in Yanamocco • 206 families in Moro
Target population	1986 persons in 331 families.	1740 persons in 290 families
Nº members/family	6	5.8

Source: CIP, CIRNMA, UPM, 2002

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[4] The planning model had its roots in **sustainable human development**, which was understood by the planning team as a *process that empowers people and increases their options in that the benefits of economic growth are equally distributed; in addition, it regenerates rather than destroys the environment* (PNUD, 1994).

[5] The Department of Puno, which occupies 6% of the national territory and is home to 4.7% of the population of Peru (1,199,398 inhabitants) is divided into 13 provinces made up of 108 districts.

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The relationships of the local communities with the land and its resources were of particular importance in the planning model since these communities provide an example of living in harmony with the environment. The table 3 shows the main agricultural and livestock resources of each of the ecosystems that the local people have traditionally used in a perfect balance with Nature.

Table 3. Agricultural and livestock resources of the ecosystems in the study area

Agro-ecological stratum	Agricultural production system	Livestock production system	Location of resources
Circunlacustre	Sweet potatoes, *quinua*, beans, barley, oca (*Oxalis tuberosa*), *olluco* (*Ullucus tuberosus*), natural pastures	Cattle, sheep, pigs	**Paucarcolla,** Yunguyo, Huancané, Capachica, Moho
Suni	Bitter potatoes, *cañihua*, natural pasture, barley, beans	Cattle, sheep, donkeys, lamas	**Paucarcolla,** Moro, Juliaca, Illave, Ácora, Pichacani
Puna seca	*Tola, iru ichu,* tender pasture in damp areas	Lamas, alpacas	**Mañazo**, Santa Rosa, Mazocruz, Palca.
Puna húmeda	No vegetation, young pasture where snow melts	Cattle, sheep, lamas, alpacas	Santa Rosa, Kunurana, Crucero.

Source of data: CIP, CIRNMA, UPM, 2002

Characteristics of the planning process

The planning model was designed to sustainably ameliorate the lives of the local people by improving their education, training, agricultural and stock raising activities, product transformation possibilities and handicraft production, and by diversifying their economies, using a mix of social reform and policy analysis. Later, during the monitoring and evaluation period, the planning process was enriched by social learning.

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Table 4. Phases and modes in the planning process

PHASES IN THE PLANNING PROCESS	PLANNING MODELS	MAIN CHARACTERISTICS
FORMULATION OF THE MODEL	*POLICY ANALYSIS*	o Use of scientific theories and models to identify the best solutions. o Planning has a top-down focus, although it analyses the resources of the area o Planners are protagonists both in thought and action.
	SOCIAL REFORM	o Planning is perceived as a scientific activity; the scientific paradigm is used for the design of the best policies o Planning is top down. o Orientation of the interests of policies: this type of planning tries to find ways to institutionalise planning via state action. o The people affected do not take part in the decision process during the formulation of the project. o This model believes in directive planning and in the need for a protective institution.
MONITORING AND EVALUATION	*SOCIAL LEARNING*	o Based on action. o Has a bottom-up focus; the people affected are involved o The process of learning conditions the application of any measures designed. Focuses on early decision-making and uses technical reasoning to explain possible courses of action. o Involves strategies and tactics, theories of reality, and requires values that inspire and direct action.

Despite the combination of models, the concept of sustainable human development was constantly present, with a marked focus on social learning (Korten, 1980; Cazorla, Friedmann, 1995; Alier, Cazorla, De los Ríos, 2001) and **social capital** (Midgley, Livermore, 1998; Upphoff, Wijayaratna, 2000; Upphoff, 2000; Miller, 1996; OECD, 1996). Thus, although the planning model represents a scientific-technical activity, the affected population was not a passive recipient of benefits from the project. Development cannot be reduced to a simply scientific-technical problem; this would empty the concept of development of its true content: the dignity of Man and of peoples. In all phases of planning, the scientist-planners showed the necessary social values for them to cooperate efficiently with the local inhabitants.

Social reform in the formulation phase

The proposed model had certain characteristics of social reform since it saw planning as a scientific venture. Due to the lack of a strong state in the study area, one of the CGIAR system centres (the CIP) assumed the role of protector of the local inhabitants, encouraging directive planning with a marked top-down nature, although impregnated with social

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values. Social reform has been used on many occasions when the state has intervened to determine which development programs and projects to run in rural communities. The present directive planning made use of the scientific knowledge produced by CGIAR centres to initiate the planning process and social reform.
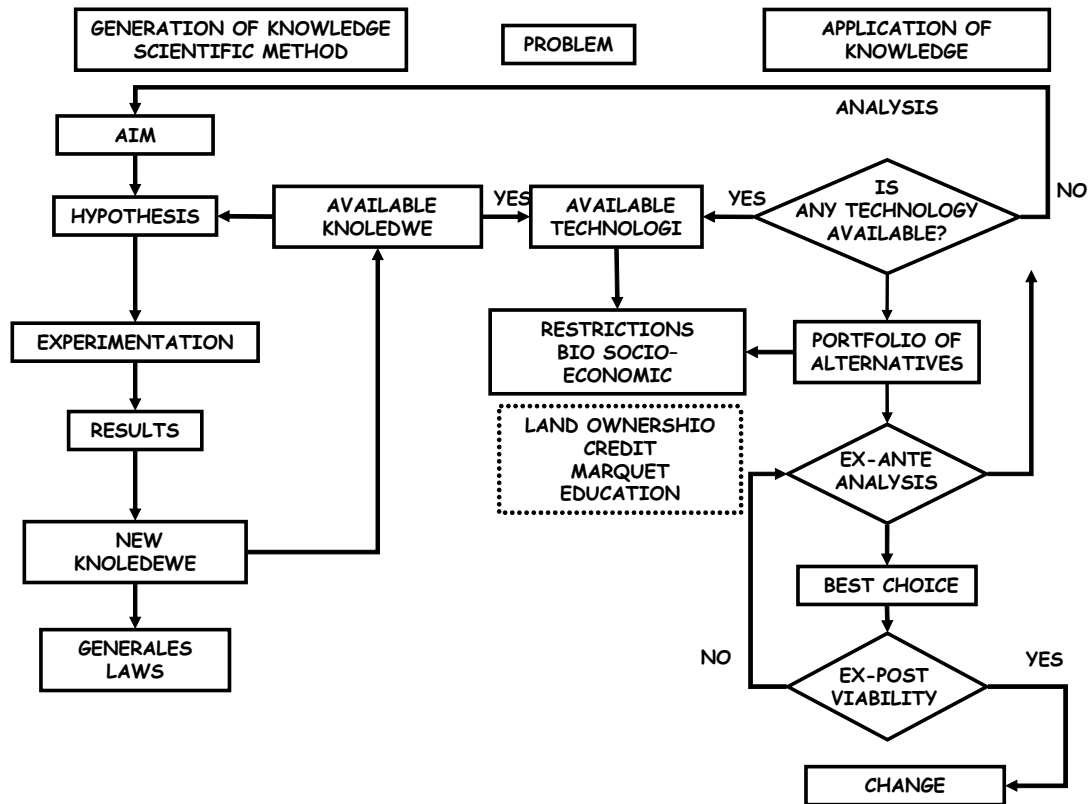

Fig. 5. Scientific knowledge produced by CGIAR centres to initiate the social reform model. Source: CIP, 2000.

The above diagram shows how expert knowledge, once adequately structured and once it takes into account the reigning environmental and socioeconomic restrictions, allows technological alternatives to be drawn up and decisions to be taken on the orientation of planning.

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In the present study, the use of sophisticated biomathematical and simulation models allowed the scientific experts (scientists at the CIP[6]) to arrive at an abstract understanding of the complex reality of the study area – the point at which development planning could begin. The Fig. 6 summarise the processes and models used for the analysis of vulnerability as an aid in decision-making. In this phase of planning, the international recognition enjoyed by the CIP rendered it the body best placed to act as a social reformer.
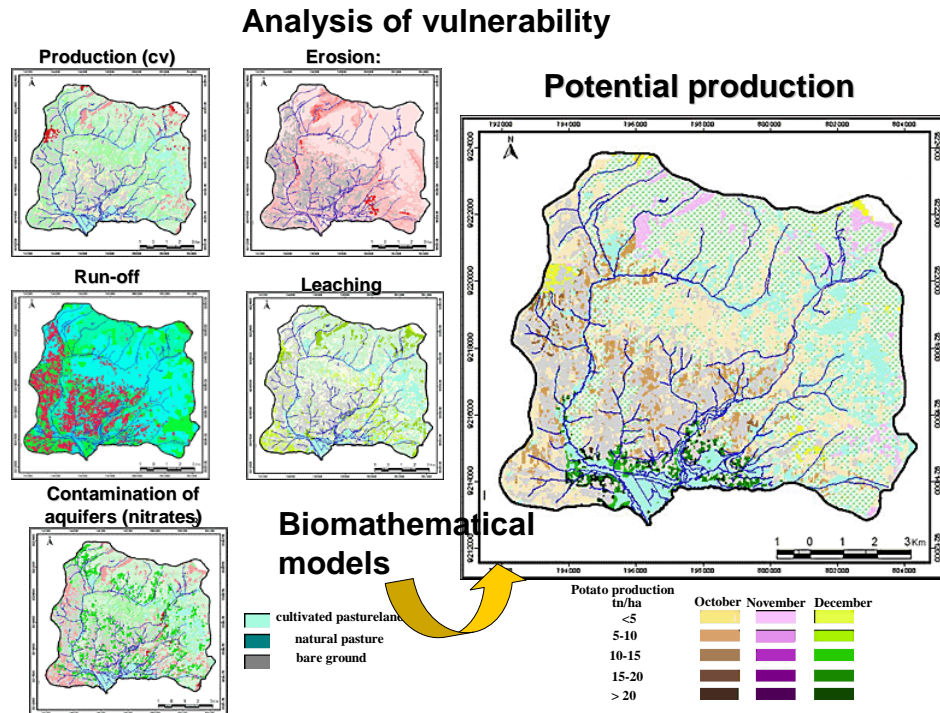

Fig. 6. Processes and models used by CIP for the analysis of vulnerability as an aid in decision-making. Source: CIP, 2002

Policy analysis in decision-making

The proposed planning model also showed the characteristics of policy analysis. The decisions reached on how to fight poverty in the study area were conditioned by the results

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[6] The CIP researches into potatoes, other tuberculae and roots for international use as basic foods.

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obtained following the policy analyses performed. The proposed planning model clearly showed the four classic traditions of policy analysis (Cazorla, 2004; Friedmann, 2001):

- *Formulation of the problem*: The context of the problem was analysed, criteria and aims were established, and hypotheses proposed.

- *Search for data and development alternatives*: This involved implementing the process in accordance with the restrictions and conditioning features. Aims, hypotheses, general laws, probabilities, alternative technologies etc. were all defined.

- *Ex-ante analysis*: This was the analytical phase of the process upon which the model was constructed. Appropriate approximations were made, calculations performed, and the results prepared.

- *Interpretation and viability*: This stage took into account the results obtained above and the viability of the different development alternatives. If the analyses were considered satisfactory, suggestions were made regarding technological change; if the results were considered negative, the problem was reformulated.

Fig. 7. Family and sweet potato production system in the study area. Source: De los Ríos, 2003

Via these phases the process of decision-making was invested with scientific-technical support. The proposed model incorporated the input of different parties and institutions

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that together formed a strategic alliance for research and innovation. One of the parties at the international level was the World Bank. This has 54 years of experience in sustainable development and possesses a number of connected institutional structures that guarantee a greater efficiency for its development policies and projects. Among these 'expert structures' is the CGIAR (World Bank, 1992). As James D. Wolfensohn of the World Bank said, *we are learning to listen more and to be better collaborators of the governments and populations we serve, and of those with whom we work at the local and international community level* (World Bank, 1992).

One of the partners at the regional level was the Puno Regional Government. The present study attempted to orientate this authority in decision-making with respect to the transformation of agricultural/stock raising products produced by rural communities and the sustainable use of local biodiversity. This was performed by analysing *ex-ante*, ongoing, and *ex-post* results from five main areas: the development of productive potential, maintaining the biodiversity of Andean crops, land use restrictions, the transformation of products, and capacitation and the transfer of technology (CIP, CIRMA, 2000).

Social learning in the monitoring and evaluation phases

The institutions involved in international cooperation have the responsibility of incorporating evaluation processes into their activities. This allows judgements to be made on the efficacy of their policies and the public interventions they finance. They should take into account explicit criteria and have a multidisciplinary focus that involves all stakeholders. Such assessment is particularly important in developing countries where resources are scarce and every dollar spent should make the maximum impact on reducing poverty (Baker, 2000). Owing to with this need, the model was enriched with social learning.

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The need for assessment has become increasingly important within the CGIAR system (CGIAR, 2000; CIMMYT, 1992; CIAT, CIMMYT, CIP, 1992; CIAT, 1990; Lee, Kearl, Uphoff, 1991; Collinson, 1968, 1994; Anderson, Herdt, 1990; Hardie, 1988; Wilson, 1989; Horton, D. et al., 1999) in order to provide value judgements on the repercussions of policies and research projects. The impacts of international institutions are also assessed (CGIAR, 2000). In the case of Puno, assessment was undertaken with a focus on social learning. As well as allowing judgments to be made on the efficiency of the interventions undertaken, this contributed towards cooperation between the different stakeholders. The Fig. 8 shows the intervention logic of the CGIAR system and the overall aims of the planning process (CGIAR, 2000).
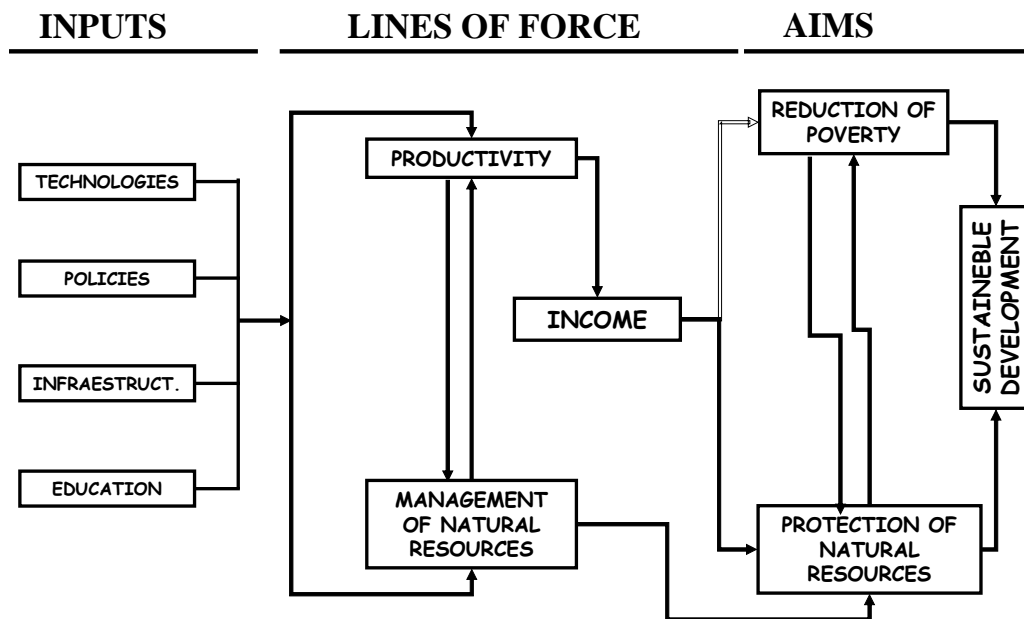

Fig. 8. The intervention logic of the CGIAR system and the overall aims
Source: CGIAR, 2000.

Learning processes particularly favour the participation of the weakest members of society. This participation allows the incorporation of new human relationships, new negotiation activities, and new ways of structuring and exchanging information and knowledge. It

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therefore encourages *innovation as a process of social learning*.[7] This can be understood as a complex, open, interactive process with a collective social dimension that involves the constant adaptation of the forms of knowledge and learning to social, environmental, technological and market conditions in permanent change (Cazorla, De los Ríos, 2002). Such learning increases the capacity to create (Senge, 1990), and with it the capacity to innovate.

The evaluation process also included elements of organisational learning (Argyris, Schön, 1978; Argyris, 1982). This focus of *innovation as social learning* is particularly appropriate for rural development (AEIDL, 1997, 2001); rural populations ought not to be seen as the object but the subject of projects and processes (Oakley, 1993). Innovation is obtained from the knowledge of local communities, which is as adequate for deciding upon what actions should be taken as the knowledge provided by professionals and other external sources (Cernea, 1991).

Knowledge, innovation and social learning were used together in a complex process with human development at its centre (Cazorla, De los Ríos, 2001). The modification of social structures was the result of the exchange between the different partners at different levels:

- At the international level: the CGIAR, which has relations with the FAO, the World Bank, the *Consorcio para el Desarrollo Sostenible de la Ecorregión Andina* (the Consortium for Sustainable Development in the Andean Ecoregion), the INIA of Spain (Ministry of Science and Technology), and the *Unidad de Innovación en Desarrollo Rural Sostenible* (UIDRS; the body that acted as the external assessor of the project)

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[7] The model followed had its scientific roots in the tradition of planning as social learning (Friedmann, 1993, 2003; Cazorla, Friedmann, 1995), the main aim of which should be oriented towards helping people drive development for themselves. This focus has been used in other studies in the European Union (Cazorla et al., 2005; Alier et al., 2001; De los Ríos and Alier, 2002).

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- At the national (Peruvian) level: the CIP, which acted as coordinator of the strategic cooperation alliance.[8]

- At the regional level: the *Centro de Investigación de Recursos Naturales y Medio Ambiente* (CIRNMA; Natural Resources and Environment Research Centre) in the region of Puno, which played a pivotal role in the planning process in terms of contact with the population, and the Regional INIA of the ILLPA-Puno Research Station (located on the Peruvian High Plain at 3850 m).

- At the local level: The local communities and the community producers' associations of Mañazo and Illpa.

Starting with some terms of reference and general information from the CGIAR, routes of dialogue and cooperation were established, thus beginning a work process that included the affected population. The planning process was enriched by the pluralist assessment method used and the involvement of all stakeholders.

On the basis of believable information accepted by all parties, value judgements were formulated by the stakeholders during the participatory processes. This improved the quality and transparency of the democratic debate via a knowledge and understanding of the logic of the interventions and the justification of the resulting judgments.

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[8] The functional structure of the CIP includes regional offices, special projects and collaboration networks with other bodies around the world. As well as its headquarters in Lima (Peru), which coordinated the Puno project, the CIP has offices in Ecuador, Nigeria, Kenya, India, Indonesia, China and the Philippines. Although the CIP is the only international organisation with its headquarters in Peru it also provides a national viewpoint.
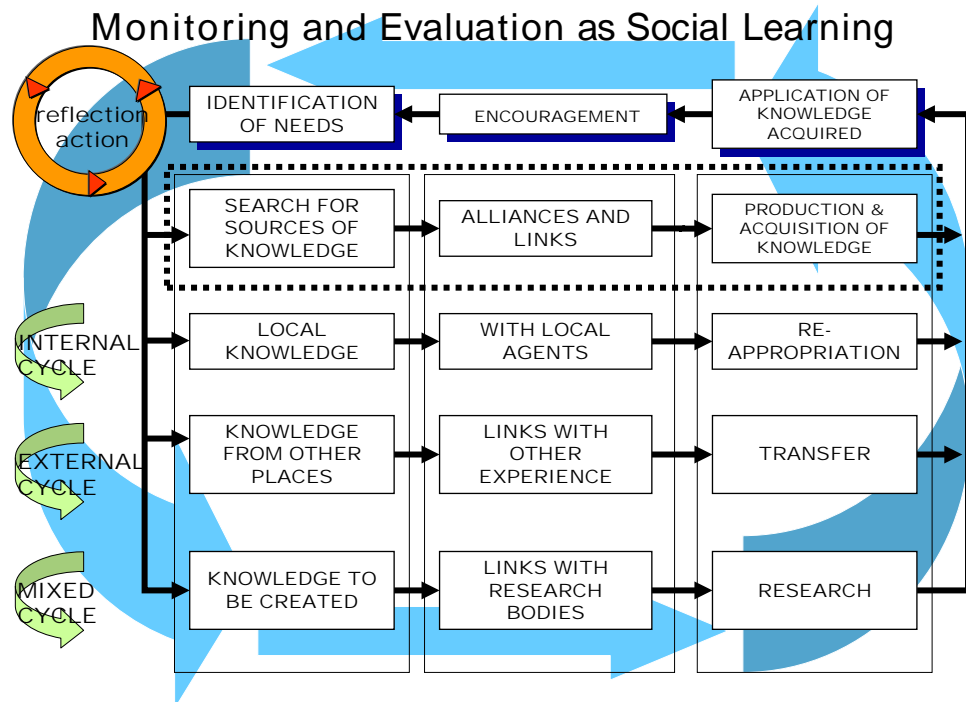
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Monitoring and Evaluation as Social Learning

Fig. 9. Different learning cycles in the Monitoring and Evaluation as Social Learning.

This collective dimension of the proposed model was particularly useful in the experimental interventions; however, the results obtained need to be confirmed by ongoing work. The Fig. 9 and the Table 5 show how monitoring and assessment of the present work combined different sources of information corresponding to different knowledge and learning cycles (internal, external and mixed) arising from the collaboration and exchange of thoughts, from the identification of needs, and the use of knowledge for solving problems.

Table 5. Different information, learning and knowledge in the Monitoring and Evaluation as Social Learning

INFORMATION	PRIMARY	• Producer of the local communities of Mañazo, Moro and Illpa. These were the direct beneficiaries of the project. • Parties involved: central government politicians (Ministry of Agriculture in Puno), regional and local politicians (mayors), CITE-Alpaca administrative personnel. • Research bodies: CIP, CIRNMA, INIA-Puno, ILLPA, the *Universidad Agraria*, researchers at CONDESAN, researchers at the INIA of Spain. • Managers and members of the CIP, and the INIA of Spain, who contributed to the institutional coordination of the project.

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	SECONDARY	• Information produced by the monitoring system, generated by the different institutions, and provided by research.
LEARNING	DIRECT	• The population learned directly from the successes and failures of the interventions.
	INDIRECT	• The local people understood that they should question certain basic assumptions of the theories underlying the actions taken. This led to the reorganisation of the least successful interventions.
KNOWLEDGE	ENDOGENOUS	• Local teams with endogenous knowledge of the region's resources, social agents, rural communities and institutions of the territory. Information came from experiments and other projects in the study area.
	EXOGENOUS	• External teams from the UIDRS provided scientific methodologies and external knowledge from the European Union
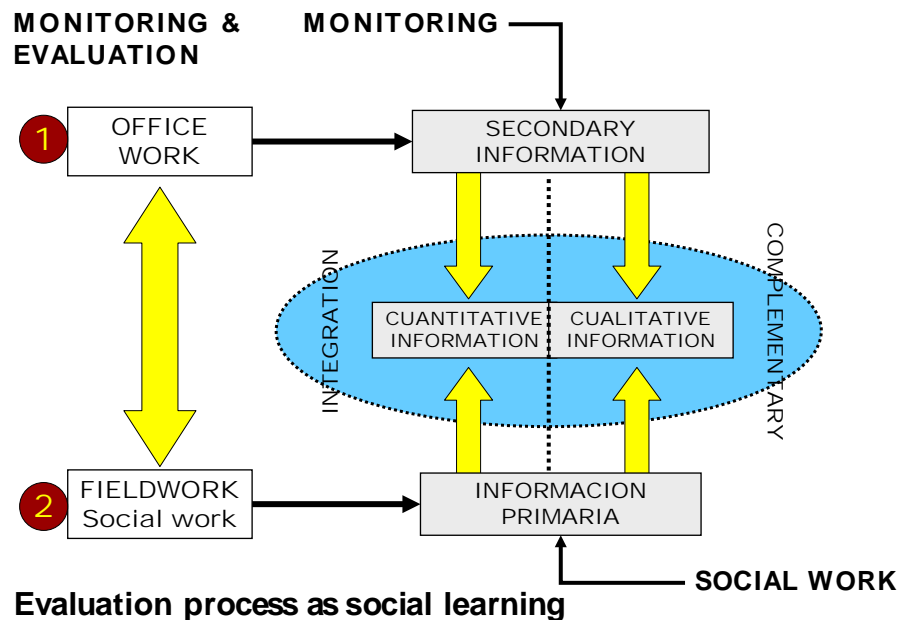
Fig. 10. Different information in the Monitoring and Evaluation as Social Learning

All the parties involved worked in collaboration and with coordination. Although the CIP was the main agent responsible for this coordination, all parties had responsibilities with respect to the different structural and social elements.

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Lessons learned on the integration of planning models

The integration of different planning models allowed for a more complete analysis of the reality of the study area, and suggested measures to be taken by the project depending on the persons affected and parties involved. The results showed that using several models in conjunction (*social reform* and *policy analysis*, which offer scientific-technical support to decision-making, along with *social learning*, which improves the quality of innovations and the transparency of the use of public funds) can be positive. The use of such combinations generates synergies that provide greater knowledge and greater understanding between the parties involved.

Fig. 10. Women's Association of home-produced in Puno study area. Source: De los Ríos, 2003

The lessons learned by the local population can be classified into four main groups:

Scientific advances and the dissemination of new technologies.- As a consequence of the activities of the project and of scientific advances (new agricultural techniques), the producers in the study area increased their agricultural and livestock production. These scientific advances were very highly valued by the local communities since they had an

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appreciably positive effect on the economies of their families. In addition, they helped conserved biodiversity.

Transformation, marketing and diversification of the rural economy.- Although marketing processes are still in their infancy in the study area, half of the producers thought that their products had acquired greater added value, and the great majority believed the quality of their products had improved. The pilot milk plant at the INIA-Illpa research Station, and the pilot meat derivative plant at the CIRNMA acted as vital nodes for the application and dissemination of new knowledge by producers. The development of the productive potential was linked to the development of production systems in which roots and tuberculae played an important part. The great biodiversity of Andean crops (potatoes, *yacón, oca, quinua* and *kañihua*) and animals (alpacas, cattle and sheep) remain the main potential products of the local families. Handicrafts were defined as a basic component of the diversification of rural economies; this provided income especially for women. Some 90% of the producers interviewed considered this activity to offer a potential alternative that could improve their incomes.

Internalisation and globalisation.- Many of the institutions of the study area were not used to working together, nor did they know the CGIAR system. Creating new international relationships (involving the private sector, research groups, and local and regional governments) improved the efficiency of their cooperation. The mixed learning processes laid the ground for defining new strategic alliances for achieving sustainable development and reducing poverty. Involving the Regional Government of Puno in the project should help in achieving sustainability and the viability of future actions. The international relationships and exchanges underway – a result of using the proposed model – and the work being performed in unison is contributing to a culture of evaluation and a collective conscience that could increase the will to participate and encourage democratic methods.

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Education, training and local knowledge.- The activities of the project are improving expectations among the rural families, encouraging them not to migrate from the study area. Some 82% of the producers interviewed believed employment to have improved because of the project, and 92% believed emigration to have slowed and the number of families to be increasing. The institutions involved are conscious of the need to stimulate the direct participation of the beneficiaries and to improve their business capacity in order to achieve a greater penetration of the project and to improve the financial independence of the population. Training and education has become a priority in all areas, especially among women craft workers. Great respect for the environment on the part of the local population was also detected,[9] which should help to incorporate scientific advances aimed at sustainable development and the conservation of biodiversity. Technical assistance activities are allowing producers to acquire more capital, and are encouraging more business-like attitudes and a better technical management of production. These activities are undertaken with the target population and are orientated towards increasing production. Capacity building is orientated towards technical personnel and producers, and 527 producers from different communities have taken part in the various capacity-building events (participation by women was 28%). Training and complementary capacity-building is also being undertaken to train young researchers on the reality of the Peruvian High Plain. A further objective is training for the replication of the project and transfer of the knowledge and experience acquired by the local people to those of other areas.

As a consequence of undertaking evaluation as social learning, new parties and institutions have become interested in the project and some have already become involved; these will provide new exogenous knowledge. The culture of planning that involves interested

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[9] Some 93% of those interviewed during the evaluation had knowledge of how to protect environmental resources, and they considered them important to their daily survival; for many people, natural resources were their only income. Around 65% of the local people used respectful, traditional techniques for harvesting these resources, although many would like to increase their production through the use of agricultural machinery and fertilisers. Nearly everyone interviewed was of the opinion that the CIRNMA, CIP and INIA-Puno were contributing to the protection of the environment. Producers who had received training in sustainable farming techniques found them to be sustainable and efficient.

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parties allows the phases of formulation, monitoring and evaluation to be adjusted as needed.

Conclusions

Research projects on human development and the fight against poverty should maintain efforts to encourage scientific cooperation between institutions and the affected population. The integration of different planning models involving social reform, policy analysis and social learning enriches planning, and changes the population from being the object of development projects to being their subject. They thus take an active part in the processes of innovation and learning.

International systems of scientific cooperation such as the CGIAR offer a stable structure around which to build development projects involving mixed planning models. They also encourage the integration of new parties and institutions, and the generation of new strategic alliances.

Projects undertaken with a social learning focus help encourage transparency in the use of public resources. The encouragement of external stakeholders in the evaluation processes provides a greater knowledge and understanding of the effects of research, and increases the efficacy of cooperation systems by providing new partners (both public and private) including regional governments.

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