

## **IHS Project Paper Series**

**Project Paper No. UEM1  
Inter-institutional Consultation and Urban  
Environmental Management in San Marcos  
Cajamarca**

**Marina Irigoyen and Russeles Machuca**

**IDEAS; Lima, Peru**

Other papers that have appeared in this series

- UEM 1. *'Inter-institutional Consultation and Urban Environmental Management in San Marcos Cajamarca'* by Marina Irigoyen and Russeles Machuca., Peru, 1997
- UEM 2. *'Environmental Sanitation and Infrastructure: The Case of the Marginal Urban Areas of the Southern Cone of Lima'* by Silvia Meléndez Kohatsu, Víctor Carrasco Cortez and Ana Granados Soldevilla, Fovida, Peru, 1997
- UEM 3. *'Defence and Conservation of the Natural Swamp Area Pantanos de Villa, Lima'* by Arnold Millet Luna, Eduardo Calvo, Elsie Guerrero Bedoya and Manuel Glave; Serpar, Peru; 1997
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- UEM 16. *'Promotion of Employment, Health and the Environment, Lima'* by César Zela Fierro and Cecilia Castro Nureña; Peru, 1998
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- UM 1 *'Urban Economic Restructuring and Local Institutional Response: the Case of Bulawayo, Zimbabwe'*, Mirjam Zaaijer, IHS, The Netherlands, 1998

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At present, the Inter-institutional Committee for the Children and Development of San Marcos (CINDESAM), created in 1993, co-ordinates the efforts of public and private institutions with a participant base in order to obtain an organic response to the development needs of San Marcos. The Committee is an encounter space for the different institutions of San Marcos that share a basic concern for local development issues such as the environmental problem.

CINDESAM is a local organisation characterised by both community and state participation that is both democratic and efficient, and its concerted action strategy is achieving environmental improvement goals. Of course, the development of CINDESAM does not affect the specific activities of the participating organisations, nor does it come into conflict with their individual interests.

In less than three years of work, the results obtained show high efficiency levels for institutional development as well as improved conditions of water and sanitation for the population. The organisation of the central areas of the city is not yet consolidated, but great advances have been achieved on the urban-rural periphery. San Marcos has a provincial municipality that needs to encourage the participation of the district municipalities in joint initiatives. The situation is positive in so far as there are new officials, a peaceful atmosphere and great development expectations.

This research has been carried out by the Centre IDEAS, with the sociologist Marina Irigoyen as Project Director, and Engineer Rosseles Machuca as Research Assistant. The work has been conducted over a six month period by them on a part time basis. The investigation has been financed with institutional resources of the Centre IDEAS, and the additional support of the Dutch government through IPADEL, UNICEF and the Swedish Diakona.

## Abstract

For a number of years now, urban growth and its consequences, particularly in large cities, have become a theme of great interest to development planners. More recently, the so-called intermediate cities have been thought of as an alternative for the migration stream to large metropolises. They have also been considered as complementary growth poles. Small cities, on the other hand, have been poorly studied; and many of them, so closely related to rural areas, have very particular dynamics. These dynamics include the growth and constitution of services or commercial centres for a micro-region. In these areas, investment and social promotion projects and public services, as well as social services, exhibit different modalities of local action.

This research project, entitled "Inter-institutional Consultation and Urban Environmental Management in San Marcos-Cajamarca," describes the situation of San Marcos, a city located on the northern highlands of Peru with nearly nine thousand inhabitants. Public and private institutions in San Marcos have developed a concerted action experiment to improve the environment of the city and the close by rural areas. The population's effort supported by the local government has been the fundamental element of this process, especially during the last term of the municipal government (1993-1995).

This experience has been carried out within the context of a national pacification process, with the citizens' efforts leading to concerted actions. Initiatives, such as those of the provincial municipal government of Cajamarca, the capital city of the department, enhance and co-ordinate the "Inter-institutional Concerted Action Roundtables" and other Concerted Action Committees in several provinces. The new local leaders and the co-operating agencies agree that this support provided to common initiatives may be sustainable.

The research has first considered that one of the most important problems in less developed countries is the fragility of the relations between public and private institutions and social organisations. This situation leads to low efficiency and inadequate investment advice, poor citizen participation and, as a consequence, limited sustainability of the development management systems. With regard to the environment, this situation is even more pronounced due to poverty.

Why and how is it that, in an area of scarce resources and high environmental degradation, an inter-institutional concerted action has been able to provide impetus to the programmed initiatives of institutions, increasing their efforts, helping them acquire resources and contributing to sustaining environmental improvements? This is the key question that this research seeks to address.

During this study, it was discovered that these joint efforts are not new in San Marcos. A decade ago, a group of institutions promoting environmental improvement, tried to solve concrete problems in the places where their projects were being carried out. For example, in 1991, the cholera epidemic was very widespread in this zone, and this created the consciousness that to combat the disease's effects, co-ordinated environmental improvements (latrines, water systems, etc.) maintained and organised by the community were necessary.

**Project Paper Series  
No. UEM 1**

**Marina Irigoyen and Russeles Machuca**

**Inter-institutional Consultation and Urban  
Environmental Management in San Marcos  
Cajamarca**

*David J. Edelman Editor  
Ed Frank, Project Manager*



**Institute for Housing and Urban Development Studies  
Rotterdam, The Netherlands  
February 1997**

**About the Project Paper Series:**

The IHS Project Paper Series is published by the Institute for Housing and Urban Development Studies, Rotterdam to make available to an international audience the significant output of its projects in the fields of urban management, housing and urban environmental management. Far too often, project documents, the so-called 'gray literature', are not easily accessible to academics and professionals in the field. They do contain, however, relevant material. This series is an attempt to respond to this need by presenting such documents quickly and in a lightly edited form, under the supervision of the IHS Editorial Board.

**Capacity Building for the Urban Environment: A Comparative Research, Training and Experience Exchange.**

A project implemented by the Institute for Housing and Urban Development Studies (IHS), Rotterdam in co-operation with: Instituto de Desarrollo Urbano (CIUDAD), Lima, Institut Africain de Gestion Urbaine (IAGU), Dakar, Instituto para la Democracia Local (IPADEL), Lima, Human Settlements Management Institute (HSMI), New Delhi, Centro de Servicios para el Desarrollo Urbano (PROA), La Paz. This project was supported by: the Directorate General for International Co-operation (DGIS), Netherlands Ministry of Foreign Affairs, The Hague, and Swiss Development Co-operation, Federal Department of Foreign Affairs, Bern

**Institute for Housing and Urban Development Studies**

The Institute for Housing and Urban Development Studies (IHS), established in 1958, is an independent educational foundation based in Rotterdam, The Netherlands. IHS is active in the field of housing, urban management and urban environmental management in Asia, Latin America, Africa and Central and Eastern Europe. IHS offers post-graduate training, research and advisory services to national and local governments, multilateral and bilateral agencies and private companies.

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ISSN: 1387-3822

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# Introduction to the Capacity Building for the Urban Environment Project

## *Focus and Outline of the Project*

*Capacity Building for the Urban Environment* is a comparative research, training and experience exchange project that was launched in October 1994 with the support of the Dutch government. It provides an inventory and review of the experiences of relevant bilateral and multilateral organisations and of Best Practices in urban environmental management. For the countries of India, Peru and Bolivia, it identifies, communicates and extends the application of Best Practices in environmental management for cities. In May 1995, the project was expanded to include Senegal/West Africa with the support of the Swiss government.

The focus of the project is on learning from experiences in urban environmental management at the city level and on developing strategies for capacity building in order to replicate and scale up the best of these experiences elsewhere. The overall co-ordination of the project is the responsibility of the Institute for Housing and Urban Development Studies in Rotterdam, while co-ordination in the participating countries is the responsibility of the following partner organisations:

- Human Settlements Management Institute (HSMI), New Delhi, India;
- Instituto para la Democracia Local (IPADEL), Lima, Peru;
- Instituto de Desarrollo Urbano (CIUDAD), Lima, Peru (since January 1997);
- Centro de Servicios para el Desarrollo Urbano, (PROA), La Paz, Bolivia, and
- Institut Africain de Gestion Urbaine, (IAGU), Dakar, Senegal.

## *Project Activities*

Support to cities in the form of applied research and development activities in the area of urban environmental management has been, and continues to be, provided by the co-ordinating partner organisations through the following set of activities:

### *Research*

Within the applied research programme undertaken in the project, Best Practices in urban environmental management in Bolivia, India, Peru and, to some extent, Senegal were identified, and their lessons and experiences reviewed. An analysis and review of the identified Best Practices then took place involving a large number of individual research groups and professionals. In a process of on-going monitoring and review, guidance and support were provided by IHS and its partner organisations. The results of both the individual studies of Best Practices and their review are being published in several books and papers in both English and Spanish. These and their publication dates are listed in the *Introduction to the Project Papers*, which follows this note.

### *Networking*

In identifying the research priorities of the project, during the conduct of the research studies, and throughout the review of research findings, a structure was developed and utilised to ensure the participation of all interested and concerned individuals and institutions through a consultative process. Expert group meetings and consultative seminars were organised for this purpose.

### *Capacity Building Strategies*

After the Best Practices research, analysis and review were completed for all countries, outline capacity building strategies were developed for each based on what was learned from these local experiences and practices. These strategies were developed through a broad-based consultation process involving a large number of research institutions, individual professionals and academics, city representatives, NGOs and local representatives. They are currently being modified based on the outcome and findings of Habitat II, which was held in Istanbul in June 1996, and the emphasis has now shifted to applying a number of Best Practices to selected cities.

### *Best Practices Documentation*

Concurrent to and co-ordinated with this project, IHS served as the secretariat of and contributed to the review of the Best Practices that were submitted to the United Nations Centre for Human Settlements (UNCHS) for the *Global Best Practice Initiative for Improving the Living Environment* in preparation for Habitat II. HSMI, PROA, IAGU and IPADEL were also involved and contributed to the national preparatory processes that took place in their own countries. An overview of the Best Practice submissions to UNCHS, as well as summaries of the additional case studies received by IHS, are being made available on the Internet through the IHS Home Page.

### *Databases*

Two databases are also under preparation: an institutional database and a literature database. The institutional database is being developed in co-operation with the International Institute for Environment and Development (IIED) in London. It contains entries on relevant organisations, some of which are documented in extensive profiles, while others are included as shorter reference information entries. IHS is developing the second database, which provides references in the literature on experiences with urban environmental management.

### *Rotterdam Seminar*

The Rotterdam Seminar, which took place in May 1996 during the two weeks preceding Habitat II, brought together all principal researchers, as well as city representatives and other professionals involved in the project for a period of intensive discussions. The seminar resulted in a document that provided a comparative analysis of practices and experiences in the field of urban environmental management. This analysis included the project process and network building, governance, job creation and poverty alleviation and gender. This was published as a book in February 1997 and is listed later in the *Introduction to the Project Papers*.

The Rotterdam seminar also discussed *city-level capacity building strategies* for the cities of Calcutta, India; Ilo, Peru; Santa Cruz, Bolivia and Dakar, Senegal. Experiences in *urban environmental management* were reviewed for the cities of Tilburg, The Netherlands and Nairobi, Kenya.

### *Habitat II*

At Habitat II the project was presented in the Special Meeting on Implementing the Urban Environment, organised by UNEP and UNCHS, as well as in other fora.

*Capacity Building Strategies for Peru, Bolivia, India and Senegal*

The outline capacity building strategies which were developed in preparation for Habitat II (i.e., by CIUDAD, PROA, HSMI and IAGU with the support of IHS). They are being modified for implementation, which is expected to begin late in 1997.

*Outline Training Program for Local Officials, CBO Workers, and other Partners for Peru, Bolivia and India*

These training materials are to be developed over the next few months and will comprise curricula for short courses related to the most directly applicable Best Practices identified for each country in view of its national strategy for capacity building in urban environmental management.

*The Development of a Medium-Term Capacity Building Strategy for Senegal and West Africa*

This activity is in progress and addresses the building of individual and institutional capacities at the local level for urban environmental management in both Senegal and throughout West Africa.

Ed Frank, Project Manager  
Rotterdam, February 1997



## Introduction to the Capacity Building for the Urban Environment Project Papers

A number of publications have appeared under the Capacity Building for the Urban Environment project. These are listed below and can be ordered from IHS or its partner organisations respectively:

- *Capacity Building for the Urban Environment*, edited by David J. Edelman and Harry Mengers, summarises the research findings of the project and the conclusions of the Rotterdam Seminar. It was published by the Institute for Housing and Urban Development Studies (IHS) in Rotterdam in February 1997;
- *Urban Environmental Management: The Indian Experience*, edited by B.N. Singh, Shipa Maitra and Rajiv Sharma, reviews the Indian experience in urban environmental management and presents all the Indian Best Practice of the project in detail. It was published by the Human Settlements Management Institute (HSMI) and (IHS) in New Delhi in May 1996;
- *Problems and Issues in Urban Environmental Management: Experiences of Ten Best Practices*, also edited by B.N. Singh, Shipa Maitra and Rajiv Sharma reports on the Indian Best Practices of the project in an abridged form. It was published by HSMI and IHS in New Delhi in May 1996, and
- *Ciudades para la Vida: Experiencias exitosas y propuestas para la acción*, edited by Liliana Miranda Sara, presents the Best Practices and outline capacity building strategies for Peru and Bolivia for a Spanish speaking audience. It was published as Volume 6 in the Urban Management Series of the joint UNCHS/UNDP/World Bank Urban Management Programme in Quito in May 1996.

The objective of this series of *Project Papers*, then, is to bring to an English speaking audience the results of the project research in Peru and Bolivia appearing in the Miranda book. In addition, the Indian research, while documented in English in the second and fourth references listed above, has not appeared as complete, individual studies. Consequently, a selection of these will also be selected for this series. Finally, the first reference in the above list covers aspects of the research undertaken in all four countries of the project. Consequently the selection of work appearing in the *Project Papers* includes the following:

### *Bolivia*

- 'Urban and Environmental Reality Workshops' by Zoila Acebey;
- 'Urban Agriculture in Community Gardens' by Julio Prudencio Böhr, and
- 'Institutional and Development Framework for Urban Environmental Management in Bolivia' edited by Gastón Mejía.

### *Peru*

- 'Defence and Conservation of the Natural Swamp Area Pantanos de Villa, Lima' by Arnold Millet Luna, Eduardo Calvo, Elsie Guerrero Bedoya and Manuel Glave;
- 'Consultation in Urban Environmental Management: The Case of Ilo' by José Luis López Follegatti, Walter Melgar Paz and Doris Balvín Díaz;
- 'Promotion of Employment, Health and the Environment, Lima' by César Zela Fierro and Cecilia Castro Nureña

- 'Environmental Sanitation and Infrastructure: The Case of the Marginal Urban Areas of the Southern Cone of Lima' by Silvia Meléndez Kohatsu, Víctor Carrasco Cortez and Ana Granados Soldevilla, and
- 'Inter-institutional Consultation and Urban Environmental Management in San Marcos Cajamarca' by Marina Irigoyen and Russeles Machuca.

#### *India*

- 'Power to the People: The Local Government Context' by the Times Research Foundation;
- 'Carrying Capacity Based Regional Planning' by the National Institute of Urban Affairs;
- 'NGOs/Civic Societies and Urban Environmental Advocacy' by Development Associates;
- 'Integrated Low-Cost Sanitation: Indian Experience' by Sulabh International Institute of Technical Research and Training;
- 'City-Wide "Best Practices" in Solid Waste Management in Collection, Transportation and Disposal' by HSMI/WMC of UIFW;
- 'Environmental and Health Improvement in Jajmau Area, Kanpur: Lessons and Experiences for Wider Replication' by Ministry of Environment and Forests;
- 'An Approach to Pollution Prevention in Electroplating Sector' by Development Alternatives;
- 'Integrated Study on Wetlands Conservation and Urban Growth: A Case of Calcutta's Wetlands' by Institute of Wetlands Management and Ecological Design;
- 'Sustainable Urban Development: A Case of Navi Mumbai (New Bombay)' by City & Industrial Development Corporation;
- 'Community Based Sanitation and Environmental Improvement Programme: Experiences of Indore, Baroda and Ahmedabad' by Shri Himanshu Parikh, and
- 'Institutional and Development Framework for Urban Environmental Management in India' by HSMI.

It should be emphasised here that the nineteen *Project Papers* in this series reflect the views of their authors only and have been edited to varying degrees. Initial English language editing was done by, among others, B.N. Singh, S. Maitra and R. Sharma for India and by D.J. Edelman for Peru and Bolivia. In fairness to both the authors and the publishers, they should, therefore, be characterised as working papers rather than full academic papers.

David J. Edelman, Series Editor  
Rotterdam, February 1997

**Inter-institutional Consultation and Urban  
Environmental Management in San Marcos  
Cajamarca**

**Marina Irigoyen and Russeles Machuca,  
IDEAS, Peru**





# **1 San Marcos: A Small City in the Northern Highlands of Peru**

## **1.1 Environmental, socio-demographic and productive features**

The province of San Marcos is located in the Department of Cajamarca in northern Peru and was created in 1984 (See Graphic 1). The province is composed of two different ecological zones, quechua and jalca, with altitudes ranging from 1800 to 4000 meters. The province covers 136 232 hectares, 25% of which are suitable for agriculture. However, half of this area is regularly cultivated (16 538 hectares), while only 11,5% (1920 hectares) has access to irrigation and/or is complementary to dry land agriculture (Centre IDEAS, 1994). Poor cultivation and grazing practices, as well as the indiscriminate felling of trees, have caused deforestation and erosion over large areas of the province. A scarcity of water has also limited the availability of drinking water in the city and other settlements.

The Census of 1993 enumerated a provincial population of 50 275 inhabitants, equivalent to 3,9% of the departmental population. Population growth, especially in urban areas, has overtaken the historic growth rate, even though 83% of the population is still rural; 8.274 people live in settlements with 100 or more houses, mainly in the capital city.

The province has had a number of important functions in the last few decades. First, it has been a link between the high forest, the highlands and the coast. San Marcos, the capital city of the province, is a market centre, an administrative site, and also provides a small production, commercial, educational and service core for the province (e.g., Instituto Superior Tecnológico y Agropecuario y de Contabilidad, Instituto Superior Pedagógico, a regional mini-hospital and handicraft activities).

As a market, the city has regional importance for cattle trading and the sale of consumption goods. There are four zonal markets, including the Sunday Agricultural Fair, which is the most important market in the city of San Marcos.

At the political level, San Marcos was a border zone until 1993 due to its nearness to areas of terrorist violence. Since 1994, however, the activities of terrorist groups have almost disappeared.

San Marcos province is an agricultural and livestock raising area (52% of the labour force is engaged in agriculture), which is increasingly commercial. The productive units (80%) are generally (80%) smaller than 5 hectares, and the sale and purchase of livestock is the main economic activity of the province.

San Marcos is one of the nation's poorest provinces. In spite of the development efforts of recent years, the 1993 Census shows that 71,9% of the population has at least one basic need unsatisfied; 3.282 of these inhabitants live in urban areas. Almost 40% of the population lacks a sewerage system. In 1993, 38,7% of the population had no well or water supply service. The educational level is low, and a high number of family heads are illiterate or have completed only a few years of elementary school.

The capital city is located at the intersection of the Muyoc and Cascasen Rivers in the Cajamarquino River Basin. Both rivers have low water volume and do not satisfy the farmers' irrigation or the city's drinking water needs. Urban growth over the last few years has moved into peripheral farming areas, where there are now insufficient water and sewerage services.

However, some initiatives in improving urban services have been undertaken. A 1993 municipal initiative has produced reliable hydro-electricity, and, in 1994, a solid (organic) waste treatment facility was installed. In 1995, a new plant to purify drinking water was also installed.

However, San Marcos has other serious infrastructure problems. The only paved road is between San Marcos and Cajabamba. Moreover, the capital city has extremely limited telephone service.

## **1.2 Background to concerted action; phases and processes**

The concerted action process now taking place in San Marcos, as well as the efforts for environmental improvement, are the fruits of years of co-ordinated work. Since the early 1980s, NGOs and government entities have been working on water works and agricultural improvements. In 1991, the cholera epidemic gave impetus to co-ordinating various efforts to improve potable water and sewerage.

With concerted action efforts in San Marcos having some history, it is useful to divide them into three phases: the first, between 1980 and 1990; the second, in 1991 and 1992, and the third since the creation of CINDESAM in 1993.

### **1.2.1 Initial efforts: 1980-1990**

Environmental improvement activities in the province began in the 1980s, when NGOs and the Ministry of Health carried out several activities to improve the supply of urban drinking water, as well as that of water to agricultural areas.

The installation of drinking water systems in the villages of Llollon, Chilcapampa and Vallecopampa was considered pioneer work; it was promoted by the group "Pihuan" (1979). This work was later (1987) extended by CEDAS to two more villages. In 1984, the Centre IDEAS initiated an agricultural and ecological program in the micro-watershed of the river Shitamalca with the objectives of reforestation and soil improvement within a sustainable development framework. The Ministry of Health and the NGO CARE also started drinking water projects for the villages.

In 1989-90, a potable water system for the village of Jucit was constructed under the responsibility of the Centre IDEAS. This work was of higher quality standards than the earlier reservoirs, and it included pipelines and reservoirs. It also provided wider coverage. These waterworks were the combined effort of UNICEF, Centre IDEAS, the municipality, COOPOP and the community. Centre IDEAS extended these works to two more villages. In 1990, another joint effort was undertaken in the village of Shitamalca with the installation of a drinking water system supported by the Ministry of Health, the Centre IDEAS and the municipality.

### **1.2.2 From the cholera epidemic to co-ordinated planning activities: 1991-1992**

The second phase of environmental development is associated with the cholera epidemic of 1991. The spread of this disease had massive impacts on northern Peru, especially in Cajamarca. Different institutions in San Marcos developed co-ordinated efforts in order to combat the epidemic since the province was one of the affected areas. The Ministry of Health, the municipality and some NGOs created the "Committee to Fight Cholera." This multi-sectoral committee carried out a number of treatment and prevention activities. The use of latrines was encouraged, rural drinking water systems were built and educational and advertising campaigns were launched. CIPDER, the NGO network of Cajamarca, promoted activities from an environmental development perspective. Training workshops and courses were also carried out. Finally, the Administrative Council of Drinking Water (JAAP) was created, which formulated rules for the operation and maintenance of village water supply systems.

### **1.2.3 A common goal: CINDESAM - 1993**

The efforts described above have fed the present phase of inter-institutional co-operation, and CINDESAM (Inter-institutional Committee for the Children and the Development of San Marcos) was created to assure the continuity of these activities. It was formed by the province's municipal government as an initiative to formalise and harmonise the joint efforts of the dynamic entities of the province.

## **1.3 The actors in the process**

The municipal government, the health authorities, NGOs and community organisations are the main actors in environmental improvement and its inter-institutional co-ordination in San Marcos. As in every province of Peru, San Marcos is a provincial municipality that assumes the responsibility for the district that houses it, Pedro Galvez, as well as another six district municipalities, i.e., those of Chancay, Eduardo Villanueva, Gregorio Pita, Ichocan, Jose Sabogal and J.M. Quiroz. Due to the problem of political violence, these last two districts did not have municipal elections for the term 1993-1995.

Since 1993, the municipal authorities of the province, grouped in an independent movement called MI SAN MARCOS, have developed the most innovative political and social activities in the history of the province. With the contribution of the professionals and technicians of San Marcos, they have combined forces with other local and external resources. Thus, they formed CINDESAM with the participation of public and private institutions as well as community organisations.

San Marcos has a Health Centre under the Ministry of Health (MINSA), one mini-hospital, a network of health missions, traditional midwives and health workers trained and organised by the Association of Health Promoters. This association groups more than 100 rural promoters and is located in the city of San Marcos. All are integrated into the Primary Health Attention Task Force, where the Health Centre is supported by a special program of the Ministry of Health, as well as by the Netherlands, Switzerland, and APRISABAC.

The creation of ODSA, the Decentralised Office of Environmental Improvement, a dependency of the Health Centre, is very important. For one and a half years, ODSA has been working with a small team of professionals, and with very few material resources, to carry out its work in San Marcos and Cajamarca. APRISABAC supports this activity by providing resources, materials and training.

PRONAMACHS, the National Program of Hydrographic Watersheds and Land Conservation Management, is a special national project of the Ministry of Agriculture that promotes the participation of farmers in reforestation activities, terrace construction (andenes) and cultivation.

The Centre IDEAS, the TERRE Foundation and CEDAS are NGOs operating in this area; the first two have been present for more than a decade, and CEDAS has recently come in. Their activities include direct promotion, studies and advisory services to rural projects. The agricultural and ecological viewpoint developed by IDEAS since 1985 has been spread by its rural activities.

The Agricultural and Veterinarian Promoters Association is composed of trained farmers who carry out treatment and preventive animal health work in the rural areas.

#### **1.4 The creation of CINDESAM and inter-institutional concerted action**

In July 1993, a few months after the municipal government was changed, the new authorities created CINDESAM. It was initially called the Multi-sectoral Committee for the Children of San Marcos. The political context within which it was created was quite unique. For the very first time in the history of the Department of Cajamarca, an independent candidate, Ing. Luis Guerrero, was elected mayor of the capital city. Ing. Guerrero, since re-elected, a well thought of professional with support from the popular sectors, is a former student leader and the representative of an NGO. His professional concern is environmental preservation, particularly with regard to agricultural and ecological projects. His council and technical team share this viewpoint and promote the Encounter Spaces or Concerted Action Tables.

The candidates elected in San Marcos this year were also headed by a professional, Teacher Telmo Sanchez, a charismatic man acknowledged for his promotion of electric power provision in the early 1990s. He mobilised hundred of workers to carry out communal tasks in order to accelerate construction. His candidacy was supported by several professionals in the area who share his viewpoint of environmental preservation and concerted action. When the mayor resigned for health reasons after only one and a half years in office, he was replaced by another teacher, Juan Machuca, who continued the same policies.

An interest in environmental protection is one of the features of the area. The generation of students educated in the 1970s at the Universidad Nacional de Cajamarca graduated with a great concern for both nature and the participation of community based organisations. This concern of many professionals led them to work directly with the farmers to better understand their problems. In the 1980s, they were working in NGOs such as Edac-CIED in Cajamarca and the Centre IDEAS in San Marcos.

The opportunity to acquire a presence and leadership in the local government precipitated a new exercise of necessary interaction with other actors. The concerted action exercise is an innovation that has been a learning process for all concerned. Happily, it is providing good results.

CINDESAM needed external support to be formally constituted and to take initial steps as a constituted Committee. The Agreement of ProAndes/UNICEF, which had already been in operation for several years in the area, accomplished this. It suggested the continued provision of funds should be based on co-ordinated activities to be developed by the local institutions. For their part, the authorities understood that a municipality with scarce resources can not work on its own.

*We could not solve all the problems alone. In San Marcos there were several NGOs that did not co-ordinate their work; they made redundant efforts. Later on, the initiative for joint work appeared, with no interference or competition for executing works in the same place. This is how CINDESAM arose* (Prof. Juan Machuca, Provincial Mayor).

#### **1.4.1 Characteristics and objectives of CINDESAM**

Now that the origin of CINDESAM has been established within its historical and political context, it is necessary to describe the organisation in detail. It is first important to outline its objectives as follows:

- To promote and develop technical, social and economic proposals that benefit each institution's management as well as the development of San Marcos;
- To co-ordinate and combine human, economic, financial and material efforts for to achieve development; and
- To promote the strengthening of co-ordination, co-operation and institutional concerted action.

CINDESAM has as its unique goal the provision of organised and planned contributions for managing development. It is, moreover, a non-profit association and, even though it is has no legal standing, it operates according to Peru's legal and formal framework (Machuca Rosseles, 1995).

At the end of 1995, there were thirteen public and private agencies that had joined CINDESAM; i.e., seven public institutions, including the Provincial Municipality of San Marcos, three NGOs, one special project and two community based organisations.

CINDESAM co-ordination and meetings are presided over by the municipality. The institutions represented have bi-weekly meetings, following proscribed procedures, even though it has been agreed not to bring CINDESAM into the legal framework. The projects and activities to be considered and prioritised are defined in an assembly meeting. They are carried out by the institutions according to their capabilities. In the experiment of San Marcos, however, the actions developed by CINDESAM do not prohibit the participant institutions from carrying out individual projects or activities in order to make use of the availability of local, national or international co-operation resources.

The various projects that have been developed by CINDESAM (See Graphic 1) so far are related to production, water and sewerage, nutrition, health, education and institutional strengthening.

Most of the resources, however, address water and sewerage projects, with a disbursement of 300 thousand dollars for a two and a half year period (See Graphic 2).

CINDESAM promotes decision making in common, and decentralised implementation. Initiatives are first submitted to a Committee meeting, where they are discussed and approved. Afterwards, they are presented to financing agencies in order to obtain the necessary resources. The projects are then executed under the responsibility of one institution, which may ask other institutions to participate if it is considered necessary. However, some activities that involve joint institutional participation, such as the production of educational materials, training events and resource management, are directly managed by CINDESAM. The supervision of permanent and follow-up activities is assumed by a co-ordination team.

CINDESAM has demonstrated extraordinary capabilities to elaborate integrated development programs and projects. Two programs have been formulated; i.e., Alimentary Safety and Environmental Sanitation, as well as 12 other projects and technical procedures, four of which have been approved. Financial support is provided by international donors and the government. These projects cover agricultural development, natural resources, drinking water and sewerage, hydro resources, agroindustry, training and management. The local government has also elaborated a set of projects for the capital city and for provincial development (Municipalidad Provincial de San Marcos, 1995).

The financial resources for these projects come from various national and international sources. UNICEF supports CINDESAM, the NGOs and FONCODES. The Ministry of the Presidency is one public entity that supports through projects the labour in this area, considering the initiatives of the municipality and other institutions. The resources, provided by the Netherlands, Switzerland and the Public Treasure, flow to APRISABAC, and from there to the NGOs and the community. The municipality also provides its own resources.

Discussions about its programs have been developed through workshops with the representatives of the province and CINDESAM. These activities have been supported by the World Food Program, and they led to the elaboration of the Alimentary Security and Basic Sanitation Programs. They are financed by the already mentioned institution and the Contravallation Fund Peru-Switzerland. This fund considers projects for natural resources improvement, seed management, agricultural ecology, hydro resources enhancement (for both irrigation and drinking water) and agroindustry. All of these projects include training programs and human resources management.

CINDESAM promotes periodic training meetings with its members, as well as exchanges experiences with other co-ordination groups, such as the Work Tables of Celendin, Cajabamba, Chota and Cajamarca. An Evaluation and Work Planning Workshop takes place annually.

## 1.5 Environmental development labour

The municipality, through a division of labour with other institutions, assumes with its own resources some necessary works for the development of the city. These includes roads, drinking water provision, sewerage, collection and treatment of solid waste and the control of sanitary conditions in eating places. Its labour is not limited only to these activities, however. The municipality also takes part in environmental preservation and recovery in a co-ordinated way with other organisations, particularly those which are members of CINDESAM. In its last term, local government has played a promotional role.

A number of institutions work on reforestation and soil preservation in the high upstream areas to guarantee the water supply of the lowlands and the city. They also work in land preservation to ensure "rain water gathering" for maintaining the groundwater level in the future and in reforestation to ensure the supply of firewood and lumber. Agreements have been signed with PRONAMACHS for soil preservation in the upstream in two micro-watersheds; with CEDAS, IDEAS and PRONAMACHS for reforestation activities in the upstream areas where these institutions work; and with ProAndes/UNICEF and APRISABAC for the creation of a Basic Health and Salubrity Program.

As a consequence of the tragic cholera epidemic, there have been attempts to provide "safe water" for the city and the rural areas. The municipality has constructed a new treatment plant for drinking water (with its own funds and FONCODES resources) to renovate and extend the system. Since CINDESAM's creation, 35 rural drinking water systems have been installed, either by CINDESAM collectively, or through individual initiatives of NGOs, APRISABAC or the municipality. There are currently another 35 studies being evaluated.

A significant element in these rural drinking water projects is the training and organising of Drinking Water Committees, which are in charge of the operation and maintenance of the system, fee setting and collection (5 cents to 1 Sol per month), supervision and repair. Meetings of all the village Drinking Water Committees (JAAP) of the province take place annually.

Previously, in the provincial capital, the sewage system drained directly into the river that crosses the valley. At present, the municipality has conditioned oxidising ponds as a first stage of a water treatment project. The sewerage network is also being improved. New fee charges for drinking water are also being considered, as well as the participation of schools through educational courses for water control.

The municipality (with the initial advice of the Centre IDEAS) has installed a processing plant for organic solid waste, unique of its kind in the department, which processes 25% of the collected trash. This plant produces 15 MT/month of worm humus, which is commercialised in the province with good acceptance levels and productive results.

The community based organisations and the associations of agricultural veterinarians and health promoters that participate in CINDESAM constitute the link with rural communities. In the city, there are no legally constituted neighbourhood organisations; the inhabitants are grouped in work committees to maintain the sewerage network or to participate in religious celebrations (they represent each suburb). The local government is studying the establishment of neighbour councils to improve citizen participation in the city's management. Specific management training activities are considered necessary to involve them. Training activities have also been planned to promote the more effective participation of rural promoters.

There are radio and TV programs for the diffusion of knowledge about environmental care, which are promoted by CINDESAM, as well as pamphlets on the same theme. A practical calendar containing recommendations for environmental preservation is also produced. The member institutions also develop training activities on their own initiative.

The I Integration Fair in San Marcos, which took place in 1995 (sponsored by APRISABAC and organised by CINDESAM), was one of the better socialisation and concerted action events. The villages and their representatives participated, developing work plans and commitments for the year. Some of the projects mentioned were potable water supply systems, latrines and flowing water protection.

At the local government level, there is close co-ordination with the provincial municipality. The district municipalities participated in the initial meetings of CINDESAM, but they have since moved away because, "they expected immediate financing responses that were delayed. They have recently been coming back, as has occurred, for example, in the district of Ichocan. (Interview with Mayor Juan Machuca).

The weakness of several district governments has constituted a serious problem. Political violence was an obstacle for elections in 1992, and it affected the municipal workers in the districts of J.M. Quiroz and J. Sabogal that kept their former authorities. Some of them resigned due to fear or exhaustion. At present, as is occurring in other areas of the country, the Provincial Mayors Assembly is not active, causing an absence of integration of the concerted action experiences. The poor road system is another element that complicates provincial communications.

The villages of various districts in the most distant areas have direct relations with CINDESAM or their members. CINDESAM has expressed its concern for the poor co-ordination among the villages. CINDESAM proposes to evaluate this situation and the grouping possibilities, creating local committees to improve participation.

In the last few months, CINDESAM has gained the participation of the district municipalities of Ichocan and Jose Sabogal. Consultations with various members have confirmed that it is necessary to explain better the objectives and processes of CINDESAM to these authorities, as well as to expedite its procedures, in order improve participation.



## 1.6 The participation of women

A very important matter is the impact of environmental improvements on the situation of women, including their physical working conditions and the improvement of their status as human beings and citizens.

Women in San Marcos, like most of the women in Peru, have suffered in their development. This is demonstrated by the high percentage of illiteracy (39%, mainly in rural areas) and the large number of children born to women between the ages of 30 and 49 (30% have four or more children).

The migration in the province, due to conditions of crisis, compelled many women to become family heads (24%) without them being adequately prepared or supported by existing policies and promotional actions (INEI, 1995). In 1993, 83% of women were not considered as a part of the labour force, even though many work on the land as well as in domestic activities.

This situation is made worse by their difficult living conditions. The lack of services and environmental deterioration particularly affect women and their children.

On the other hand, it is acknowledged that the establishment of drinking water systems lightens the load of women and children. There exist some examples in the villages of Penipampa, Juquit, Poro Poro and Cortadera, places where water was previously obtained each week or bi-weekly (every 8 or 15 days) from wells containing water stored from the inflow from a small canal. Today, these villages have drinking water daily. In Marcavilca or Condamarca, water was transported by animals from places 30 minutes to one hour away. This duty was a responsibility assigned to women and children; today they are released from it by the existence of village drinking water.

*We used to get water from a canal each day or two. Now this system has a central reservoir and pressure boxes. I have a sink in my house. The improvement in health is outstanding, as is the fact that there is less work for the ladies (Wife of the President of the Drinking Water Committee of Alfonso Ugarte).*

Women also participate in general training activities for the better use and preservation of drinking water. The development of leadership abilities in women is encouraged. Two years ago, women scarcely participated in the JAAP. The evaluation of water and sewerage projects showed that women were more "beneficiaries" than "performers" (which is positive but not enough) within the process of environmental development. This situation has now improved within JAAP, including 16% of director positions being filled by women in contrast to the earlier 3%.

The participation of women at management levels in CINDESAM and on projects sponsored by this organisation is also improving, and their performance has been outstanding. Nevertheless, the participation levels are still very low, and a greater effort must be made here to involve women at all levels.



## **2 The Concerted Action and its Impact on the Environmental Improvement in San Marcos**

The experiment and the social process it involves have led to the following measurable achievements:

- The production of 100 thousand forest seedlings;
- The installation of 35 drinking water systems, which has led to improved living standards for five thousand inhabitants in the city;
- A health and sanitary prevention campaign with a coverage of 90% of the inhabitants of San Marcos;
- Transformation of the organic wastes of the city into an average of 15 MT of organic fertiliser per month, with the possibility of increasing this by 25% with additional investment; and
- The elaboration of 12 projects and technical studies submitted to international funding agencies and some governmental entities. Four of them have already been approved.

Nevertheless, this is only part of the work to that needs to be achieved; institutional, organisational and social issues have rich possibilities to be mined to continue developing wider coverage strategies.

### **2.1 Municipal leadership and participation**

The municipality has headed a number of initiatives that benefit local development, particularly during the last two years. A joint project with community based organisations and with public and private institutions has been conducted, which has had a positive influence on local and environmental development.

The participation in decision-making of the institutional members of CINDESAM and the community is encouraged. Projects such as drinking water systems for villages and the city are executed with community participation, including the determination of the project's relevance, characteristics and physical work, as well as with the support of specialised institutions providing supervision and evaluation. In the villages, the Drinking Water Management Councils (JAAP) assume operation and maintenance activities. The farmers' organisations are also beginning to be integrated into a decision-making atmosphere for the activities to be developed in their areas. The I Integration Fair is a noticeable advance.

## **2.2 Leadership impulse to new leaders**

During the last few years, new have leaders appeared, most of them members of CINDESAM. The concerted action exercise involved the development of new co-ordination abilities, as well as skills in resource management. The planning and program discussions and the elaboration of projects provide a practical training exercise, not only on subjects "of their concern," but also on matters of general interest. In addition, the drinking water representatives and the associations of agricultural veterinarians and health workers attend training courses to exchange information. Finally, the inhabitants also receive training when the projects are being executed, as has occurred with the drinking water systems and the educational projects.

The coordinated action practice promotes leadership and the positive personal attitudes of representatives of the institutions. This feature is acknowledged by the esteem and sympathy they display, alleviating the work and defeating half-truths. "The co-ordinator leads the Committee and is a key factor for the work" (declared a nurse of the Health Centre). The attitude of the municipal representative, his leadership and his commitment are considered as mobilising features of CINDESAM and the co-ordination process.

## **2.3 Management capabilities**

At present, the co-ordination and management of CINDESAM's duties are carried out in an efficient manner by the municipality, which reports on the details of activities, evaluations and financial statements clearly and on time.

*The municipal government prepares the meetings invitations, receives the reports and financial submissions and organises the work (Teacher, Co-ordinator of the Educational Area).*

As it expands in the future, CINDESAM should determine if this situation is satisfactory or if it will need instead autonomous management, with precise and systematic accounting, administrative and monitoring systems. It is also necessary to give formal status to CINDESAM as a requirement for its expansion, particularly in relation to multi-lateral financial institutions or the central government.

## **2.4 Environmental education**

The Committee considers environmental education as a priority. A coverage of 90% of the population has been reached through modern means such as TV, radio, pamphlets, brochures and calendars. This is a permanent activity. It is under consideration whether to include at the school level systematic environmental education associated with the programs of integrated interventions already established for pre-school children sponsored by UNICEF. The activities of agricultural ecology training and promotion developed in rural areas are considered as a very important aspect here.

## 2.5 Concerted action in practice

A functional consultation process is one of the strong points of CINDESAM. It expresses a constructive spirit, a positive synergy, a defined leadership and a great love for the land. The work already accomplished has encouraged the unification of public organisations. Now, health and education representatives co-ordinate and design the curricula for programs to improve nourishment and health conditions; NGOs and special projects accept playing the role of the Ministry of Health in controlling the works of the drinking water system; and the municipality and NGOs co-ordinate the areas of urgent intervention.

Institutions such as PRONAMACHS and Centre IDEAS buy the fertiliser processed by the municipality, donating it to producers as an incentive for its use. The successful results have encouraged farmers to produce worm humus by themselves. Co-ordination with CEPIS, PAHO and SEMDACAJ helped provide technical assistance to the city's project to expand its water purification plant.

## 2.6 Proposing capabilities

In three years of working together, specific projects and programs have been elaborated. In two and a half years, there have been projects generated for water and sewerage (62% of the assigned resources) and education (23%), considered as strategic areas of development, with budgets higher than 500 thousand dollars. UNICEF and FONCODES have accepted proposals at a rate higher than for the proposals of other provinces. But this is not the only work that has been done. A discussion process of development perspectives precipitated the elaboration of the Alimentary Safety Program, with an annual budget close to 400 thousand dollars, which is at present being studied by financial organisations.

The lack of integrated planning, with a strategic viewpoint outlined in a planned scheme, is not considered as an obstacle. A global ideal is shared, that is, working on specific aspects of primary needs. This confident attitude, based on the participants' understanding and their institutional profiles, produces concrete results that expand the vision to more ambitious and global projects.

A challenge to be assumed by CINDESAM is the elaboration of integrated planning. A common long term vision needs to be shared, based on the partial advances of the municipality's and NGOs' work, as well as by the strategic planning developed in the framework of the Alimentary Safety Project.

*We hope to solve this year the lack of a concerted action plan to develop the entire province....other Concerted Action Tables in other places do have these plans, but they are not necessarily executed or evaluated (Nurse, representative of APRISABAC in San Marcos).*

## **2.7 Social services**

The drinking water deficit has decreased from 38% to 15% in less than three years since the construction of the rural drinking water systems and the new drinking water treatment plant in the city. In 1995, the financing for 35 new drinking water systems to provide service to more than 4 thousand additional people was approved. Each village also has a Drinking Water Administration Committee to take charge of the management of its system.

The coverage of the excreta elimination system has been improved from its previous coverage of 35% to 48% for latrines in use; and the sewerage network in the city is programmed for expansion this year. The current excreta collection system and its processing at the city's solid (organic) waste treatment plant produce good results and contribute to improving the health of the city.

Sanitary control of the city's restaurants is also carried out, and this improves their sanitary conditions considerably.

Due to the construction of water and sewerage works, the incidence of cholera has noticeably decreased, and it is now almost to zero.

## **2.8 Environmental preservation**

CINDESAM and its projects give attention to soil preservation and reforestation activities (800 hectares reforested in the last 5 years). Also, agricultural veterinarian promoters are trained, as are soil preservation and reforestation leaders. During 1993 and 1994, 200 hectares of soil were recovered or improved with the participation of the municipality, Centre IDEAS, PRONAMACHS and the Terre Foundation.

## **2.9 Technology and environmental impact**

Environmental impacts are a matter of concern, usually well considered and part of the 80s tradition in Cajamarca. The drinking water proposals attempt to preserve and increase the resources (reforestation and soil preservation) and encourage modest consumption and water preservation (educational campaigns in the community and schools). Special care is given to avoiding contamination of irrigation water as well to spring water preservation.

With the support of APRISABAC and ODSA, the technology of the rural drinking water systems has been improved. They now have technological advantages for systematising their operation, maintenance and management. The Drinking Water Committees also benefit from these technological advances.

Processes of recycling and organic waste treatment are being developed, producing organic fertilisers with good technical quality. The use of nature fertilisers to enrich and regenerate the soil is encouraged. Ventilated dry latrines made with local materials are a technological option suitable for this area of water scarcity.

## **2.10 The promotion of women**

*An element that has received recent attention is the promotion of women, particularly in the JAAP and on the initiative of APRISABAC. This subject requires a more systematic concern at all levels, and specific methodologies for it must be developed (Representative of Centre IDEAS).*

## **2.11 Economics and profitability**

The organic solid waste processing plant of the municipality has a clear profit goal. If it is true that its sustainability has not yet been achieved, it is also true that its income has covered costs of basic infrastructure such as the land, ponds, the roof and fences; and it also pays the salary for one of the two workers at the plant. Other expenses, such as technical or managerial assistance, are not covered, but it is considered that they will be later.

The drinking water systems for the villages are considered as developmental social investments; the initial investment for infrastructure has been provided by the government, NGOs or CINDESAM projects, with unskilled labour being provided by each community. The villages are responsible for the service's support, with periodic fees paid by the users. New inhabitants obtaining access to this service who have not contributed to its provision should somehow compensate other residents for their initial efforts.

In the city, the inhabitants pay for the drinking water system. The expansion of the water purification plant was considered as a social investment financed with the municipality's own resources and by FONCODES according to its social compensation programs.





### 3 The Results of the Research

First, this study has generated the collective meditation of the members of CINDESAM regarding their work. It has also contributed to evaluating and acknowledging the organisation. The interviews that were conducted to elaborate this analysis and to discuss the results of the work to this point have led to new concerns for a critical spirit in any new activities.

Second, some conclusions of the "Inter-institutional Concerted Action" may be considered as a reference point for other organisations, thereby helping them to design better proposals for environmental management.

This study has described the importance of the inter-institutional concerted action of public and private institutions as a supporting practice to efforts for environmental improvement. It concludes that emphasis should be given to specific projects rather than to a large, comprehensive "development project." Another important element of inter-institutional concerted action is that its work does not eliminate the initiatives of its individual members. In addition, individual leadership is found to be a key cohesive element, and finally, the effectiveness of the environmental actions generates a broader acknowledgement of environmental problems and contributes to further improvements being accepted.

#### 3.1 Concerted action; local and specific initiatives

An increase in the number of concerted actions may be encouraged by external incentives, such as the support offered by a co-operative organisation in San Marcos. However, this support is not of critical importance nor by itself a guarantee of success.

It has been demonstrated how important it is to stimulate and enhance the initiatives of local agents, particularly, of the local government. The point of departure of a positive experience is a collective spirit that encourages short term development. This is not an easy process. Some people are initially distrustful and suspicious, but the collective spirit may eventually spread to most of the members, as happened in the CINDESAM case.

*When I started working in this area, I noticed the development achieved; I saw the CINDESAM presence. Even though I could not directly participate, since I was member of the Health Centre, I was invited to ..... Formerly, in San Marcos all the institutions executed their activities without the participation of the Ministry of Health. Now the institutions co-ordinate with us. We are integrated (Civil Engineer, Head of ODSA - Basic Salubrity).*

Of course, many other institutions are still not integrated or should increase their participation. Some district governments and city associations are notable here.

### **3.2 Local government and legitimacy**

The municipal government plays a determining role as an entity of joint representation. It began the process in San Marcos at a moment of great legitimacy, that is, immediately after winning an election. It has acquired support in accordance with its responsible actions and good performance, and it has launched initiatives, made proposals and tried to respond to a wide range of citizen concerns.

### **3.3 Individual leadership and the human relations net**

The personality of the representatives of an institution is a significant element for success. Managerial processes are heavily influenced by the attitudes of the persons comprising the leadership, and they can either contribute to or be an obstacle to institutional development. An open minded attitude and democratic decision-making improve the chances of concerted action taking place.

*There is an institution that did not want to participate from the very beginning. Its head did not want to integrate, even though he had been talking about how it was important. Later on the head was changed, and now they are participating. Some individuals have much influence in things like these (CEDAS representative).*

### **3.4 Participation and organisation**

Proper management of human relations in collective processes enhances the efforts already exerted. It is important to consider the population's role and the community based organisations as central supporting elements to sustain work. It is not only important to mobilise the population in order to obtain efficient service, to lower prices and to have a greater impact, but to enable people to play a role in development as individuals with responsibilities and rights.

*Areas of great poverty characterised by low levels of basic education and human resource development need to receive additional training, with new methodologies and new means of mass communication used. This work should be considered to have a long term perspective, addressed not only to adults, but to young people and children (President of the Health Promoters Association). The efforts to train children and their mothers in nutritional subjects, particularly those developed by UNICEF, are an excellent model for environmental education.*

Organisational work and organisational education are considered of great significance in areas destroyed by violence and economic crisis such as San Marcos. Consequently, efforts to improve the environment should also be used to strengthen the local institutional movement.

The extension of the experiment to encompass the direct participation of the community based organisations in San Marcos that lack a tradition of social organisation may prove difficult, but the strengthening of social based organisations is considered as important a challenge as improving the environment.

### **3.5 The participation of the state**

The participation of organisations of the central government, such as the Ministries of Health, Agriculture and Education, is essential in rural areas. Working with the state involves higher impact and coverage, even though there is not necessarily agreement with its working methods. To share work with the government makes it possible to exchange ideas about policies and, eventually, to make changes in the state's activities.

*There has been a dispute over the contribution of unskilled labour to the sanitation activities carried out by a government entity (FONCODES). It was requested not to continue working on sanitation in the area, since there were other activities not related to their implementation; it seems to be that FONCODES could not adjust to being a part of a global strategy. Given this situation, FONCODES has accepted not to work on sanitation in this area under such conditions (Representative of CINDESAM).*

### **3.6 Technology and costs**

The use of simple and low cost technologies that directly benefit the families and are able to be maintained and reproduced contribute to strengthening sustainability of the activity. This is so in the case of the drinking water systems that reduce the work of the women and children who used to transport water, thereby encouraging them to preserve and maintain these technologies. The entire community may be involved in the operation, as is the case in San Marcos. This dynamic is essential in urban areas surrounded by a rural environment that may be affected by urban growth.

The participation in the initial investment (with work, tariff payments) and the commitment to making further contributions for operation and maintenance (tariffs, municipal fees) are other important components. On more complicated projects, a strategy for finding specialised support, as occurred with the potable water purification system of the capital, should be considered.

The use of recycling technologies that also generate income is a feasible approach, even in small cities like San Marcos. An example of this technology is the production and trading of peat moss and worm humus.

### **3.7 Resources**

The initiatives to and signs of support coming from national or international funding sources are elements that encourage joint ventures. They demand a large investment for studies, a diagnosis and the elaboration of a budget for the projects to be designed. This must be done by the participant members, particularly by the NGOs.

### **3.8 Planning**

The absence a common plan is not necessarily an obstacle at an early stage. When the projects to be implemented become quite large, however, special consolidation effort should be made.

Designing a global plan is not necessarily the first step. The most useful step is to share a common purpose, which is characteristic of the work of the organisation.

In conclusion, the key factors for success identified in this study are the pragmatic attitude of all members towards the concerted action effort, respect for the individual initiatives of the members, motivation, leadership and environmental efficiency.

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## **Annex: Conceptual and Methodological Aspects of the Research**

### **The purpose of the study**

The experience of inter-institutional concerted action accomplished by public and private institutions in the province of San Marcos - Cajamarca is analysed. A very important part of this work has been developed by CINDESAM, an inter-institutional organisation that has been working for the development of the province since 1993. Its performance is analysed here in detail. Other co-ordinated institutional efforts that have positive effects on the environment are also considered.

The emphasis of the study is given to the analysis of the environmental impacts on the urban area of the province. Nevertheless, as the area is mostly rural and closely linked to the work developed, occasionally rural areas are also studied.

### **Duration**

The study was carried out over a three year period between 1993 and 1995.

### **Conceptual framework and hypothesis**

The research considers that one of the main problems in less developed countries is the fragility of the relations among public, private and social organisations, which lead to low efficiency an unsatisfactory investment orientation, a low rate of citizen participation and, therefore, limited sustainability of the development management systems. The environmental field is difficult to work in, and poverty makes the situation worse.

### **The study proves the following hypothesis**

In areas of scarce resources and high environmental degradation, inter-institutional concerted action enhances pragmatic initiatives and efforts, provides resources and contributes to obtaining better results for the sustainable improvement of the environment.

a. The experience of San Marcos demonstrates that the design of a sustainable environmental management strategy is linked to the strengthening of inter-institutional co-operation that does not reduce or eliminate the involved member organisations, but enhances its members' fulfilment. For these processes, it is necessary to count on leadership to consolidate and merge the proposals. In the case of San Marcos, this role has been played by the municipal government.

This inter-institutional co-operation has a character that satisfies the requirements of both society and the state and co-ordinates the efforts of public, private and social organisations.

b. The scarcity of local resources should not be considered as an obstacle to achieve impact. With collective effort, it is possible to design projects and to obtain complementary resources.

c. A basic requirement for the success of a concerted action in environmental improvement is an open minded and efficient approach to carrying out the activities designed, solving genuine problems that affect the community or the region, in terms of valid priorities.

### **Variables**

The principal variables considered are:

a. Concerted action, institutional development and leadership.

This includes the creation or reinforcement of rules, guidelines and regulations, democratic exercises or consultations, the existence of representation mechanisms and relational spaces, the involvement of women and the creation of local authority systems. The leadership is referred to in the acknowledgement of a municipal organising capability.

b. Proposal capability

This is expressed by the formulation or execution of projects and activities in a joint or co-ordinated manner, including innovative proposals.

c. Resources

This is expressed by the amounts obtained from the national and international funding agencies or from investment per year, as well as by the number and size of projects executed.

d. Sustainable environmental improvement

This is considered in terms of the quantity and quality of the services provided and their condition, as well as the users covered and the impact of the services on men and women.

The economic analysis considers the income generated by the services and if they are sufficient for their sustainability. The management of natural resources and the technology used, as well as the results obtained, have been reviewed.

It is noted that the institutions and organisations have included environmental proposals and activities. The quality of educational and diffusion activities with regard to environmental issues is also noted.

Responsibilities assumed by local institutions.

### **Research and analysis techniques**

The observation techniques that have been used are:

- Semi-structured interviews with most of the members of CINDESAM, two drinking water representatives and heads of the institutions participating in CINDESAM;
- Review of documents, acts, working documents, educational materials and projects;



- Ideas, impression and opinion exchanges with members of CINDESAM and other institutions of the province, including some guests, grouped in two workshops, one at the middle of the study and the other one to elaborate the conclusions; and
- Direct observation of the work and its benefits.

The variables inter-institutional concerted action, inter-institutional development and leadership have been related to the analysis of the variables proposing capability and resource achievement, studying how these subjects influence environmental improvement. The frequency of activities related to each one of these variables demonstrated that there is a high correlation among them.

The suggestions of the participants in the workshops organised by CINDESAM members and carried out in July and October have been taken into consideration. These workshops presented the progress and preliminary conclusions as well as the recommendations. The proposals of investigators and panellists participating in the two roundtables that were organised have also been considered.

The CINDESAM collaboration has been of great assistance in facilitating the acquisition of documentary information and in entering into a sincere dialogue to detect the difficulties found in the process.

