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**Chimbote's Local Agenda 21: Initiatives to support its development  
and implementation**

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# Chimbote's Local Agenda 21: initiatives to support its development and implementation

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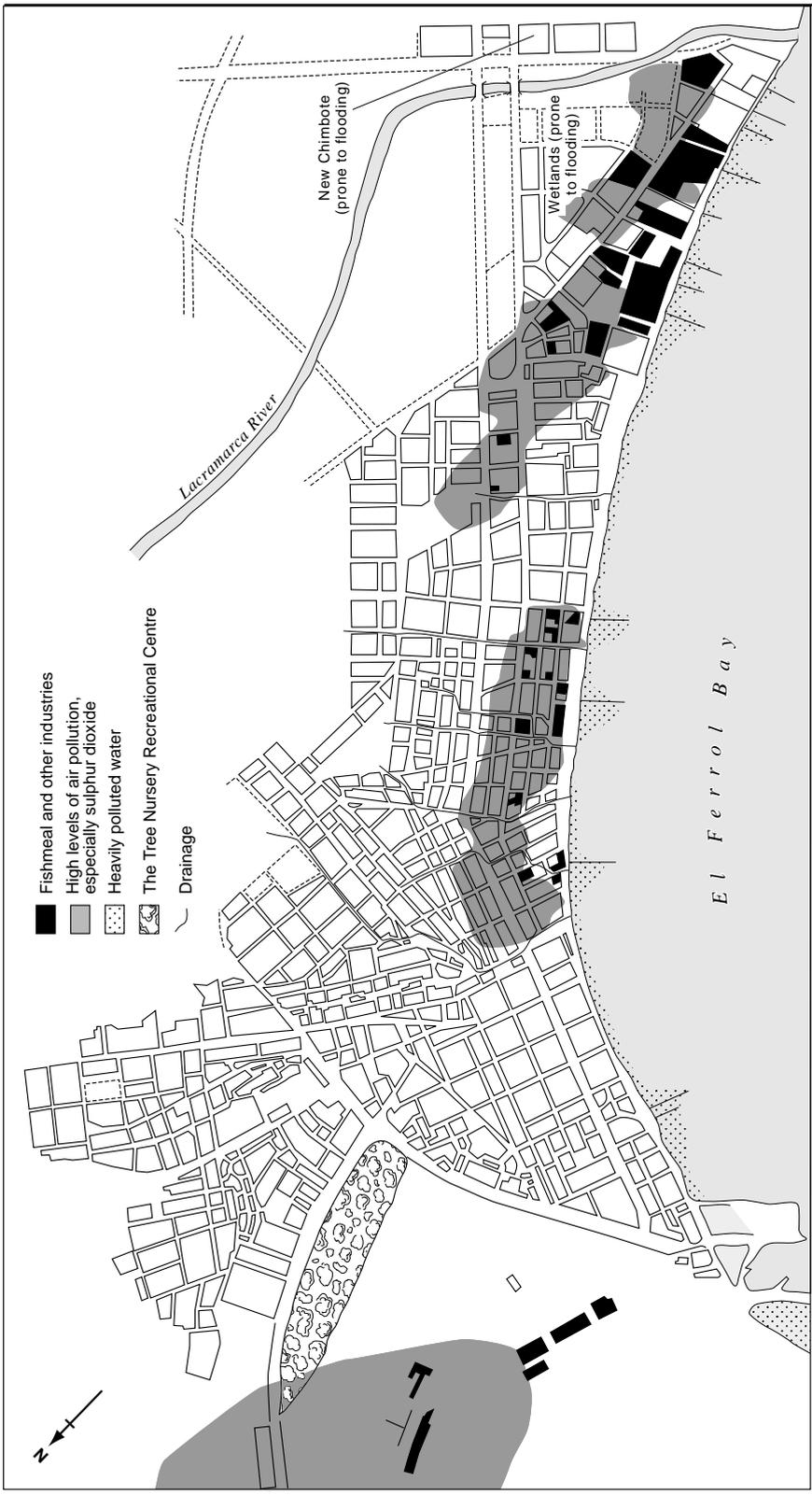
**SUMMARY: This paper describes the initiatives to defend the environment and reduce pollution in Chimbote. This important industrial fishing port is considered the third most contaminated city in Peru due to the lack of urban environmental planning and regulation, and of any genuine leadership from local government. The paper includes an account of the work of the Association for the Defense and Conservation of the Environment of the Province of La Santa (ADECOMAPS), which started as an ecological movement for the protection and conservation of an important park. It then developed an environmental action plan (or Local Agenda 21) for Chimbote. The Association brings together 42 different institutions, including grassroots organizations, NGOs, universities, professional training institutions, politicians and government bodies. The paper also describes the reluctance of the provincial mayor to work with the Association.**

## I. BACKGROUND TO CHIMBOTE'S ENVIRONMENTAL PROBLEMS

CHIMBOTE, THE CAPITAL of the province of La Santa in Peru is an industrial fishing port located 420 kilometres north of Lima. Its 278,000 inhabitants are faced with a variety of environmental problems which place it among Peru's three most contaminated cities. In 1940, Chimbote was a small bay with a population of 4,000 people mainly engaged in small-scale fishing. With the boom in the fishmeal industry (beginning around 1960), migrants arrived mainly from Ancash and La Libertad in the highlands. They mostly settled in illegal settlements which lacked basic services.

Visitors' first impression of the city is of a fishing port whose poverty is clearly reflected in the dwellings, most of which are shacks made of rush matting with roofs of plastic, cardboard or any other material that will afford some protection against the weather. Barefoot children play and survive among the rubbish and the foul odour from air pollution. Although the port generates much wealth for a few (the industrial fishing sector alone yields over US\$ 20 million a year), the bulk of the population

Map 1: The City of Chimbote - Showing the Location of Some of the Most Serious Environmental Problems



Source: Natura; Instituto Ecologista

must put up with minimal wages as well as a continuous environmental assault on their health and that of their children. These features and the associated ecological chaos make Chimbote an example of what **not** to do.

The lack of urban planning has favoured the establishment of fishing industries (42 businesses) whose main activity is the processing of fishmeal. This industrial activity is regarded as too polluting and dangerous for residential areas as the constant emission of pollutants which contaminate the air, water and soil is a serious threat to Chimbote's inhabitants. The effluent and emissions generated by Siderperú, a steel-processing firm, also have a negative environmental impact.

A further feature of Chimbote's settlements is the shortfall in the coverage and quality of basic services – especially water, sanitation and solid waste collection. Around 70 per cent of the population live in one of the 118 informal settlements. The quality of the living environment in these informal settlements is very poor. The settlements are often formed from an invasion and they do not always obtain legal recognition from local government. Recently, the expansion zone in Chimbote shifted to the eastern part of the city, close to the agricultural land. These invasions take place in natural swamp areas which are filled up with sand, construction waste and solid waste. The groundwater level here is just 20 centimetres below the surface and these areas suffered heavy flooding, especially from El Niño in 1997-1998.

Two-fifths of the population lack water. Many have to get water from water vendors using their trucks or donkeys with water cans; or they get it from public taps or informal wells without any sanitary control. Those who are fortunate enough to have a domestic connection have water for six or seven hours a day. Some informal settlements are connected but only served in theory because the low pressures mean that the water does not reach the houses.

After the cholera epidemic, water quality control improved a little as a result of a water purification programme and a water quality monitoring programme although the results of these programmes were not made public.

Sixty per cent of Chimbote's population are connected to a sewer system. Those living in unconnected settlements use pit latrines or simply defecate on vacant land close to their homes. The sewage that enters the system is collected in a major pipeline and disposed off in the bay without treatment.

There is no efficient system to collect and treat solid waste and, for most settlements, there is no regular service for its collection. Some 260 metric tonnes of solid waste are produced in Chimbote each day – close to three-quarters from industry with the rest being domestic waste. Around 40 per cent of this waste is collected by the municipality, including some from households, industries and hospitals – but with no segregation. The city has no sanitary landfill facility and the collected wastes are disposed of on open sites. On illegal sites, some segregation of plastic, cardboard and glass takes place – and these wastes are then sold. Uncollected waste is dumped around the bay, on

the roads, in the swamp area or wherever there is a vacant site. It may also be burnt, which contributes to air pollution.

Currently, around 45 per cent of Chimbote's population live in conditions of extreme poverty. The scale and depth of poverty recently increased dramatically when the fishmeal industry was paralyzed as a consequence of El Niño, and unemployment rates rose.

A high proportion of the low-income households face additional risks due to their location close to the fishmeal industry. Of the 43 enterprises in Chimbote, 24 are in the urban area, surrounded by low-income settlements. These industries dump some of their liquid wastes – including oil and blood – into the sewers. This often leads to leakages and blockages in the system. The lack of adequate management of hazardous liquid wastes also puts the settlements in the lowest areas of Chimbote at risk. This is because industrial wastes are dumped into the sewers which pass through these settlements and, when flooding occurs, these wastes and sewage spread all over the settlements.

The few natural resources within the area are disappearing progressively. This is especially so for the ecosystems located in the wetlands of Villa Maria and in El Ferrol Bay, which is considered to be one of the ecosystems most damaged by the direct outflow of untreated waste from the city's domestic and industrial drainage systems. The physical expansion of the city has also led to the loss of agricultural land to urban developments.

The pollutants most affecting urban land are uncollected rubbish, slag from the iron and steel works, waste from brick works, sediments from fish factories, and overflows and blockages from domestic drains. Factors affecting agricultural land include inappropriate use of agrochemicals, loss of land to urban expansion, and sediments from the iron and steel works, which particularly affect the Santa valley.

Natural areas have been affected by changes from residential to industrial use and the outflow of untreated matter from domestic and industrial drainage systems in the wetlands of Villa Maria, where contamination by solid wastes can also be seen (especially slag and toilet waste).

The main problems affecting air quality are particulates (including soot particles), carbon monoxide, sulphur dioxide, fishmeal particles, volatile amines, iron oxide, nitrogen oxide, hydrocarbons and calcium fluoride. Industry is responsible for more than 90 per cent of particulates and sulphur dioxide.

Table 1 presents data on water contamination and highlights how industry is the main contributor to most sources of contamination including most biological oxygen demand and suspended solids and all oil. Industry is also responsible for all water contamination from various chemicals including ferrous oxide, hydrogen sulphide, calcium fluoride and selenium oxide.

At present, Chimbote has 80 hectares of green area for the whole population. According to international standards, a city should count on around 8-15 square metres per inhabitant. This implies a deficit of at least 420 hectares within the city. On paper 1,145 hectares have been reserved as green areas but

Table 1: The Main Forms and Sources of Water Pollution

Sector	Volume of wastes		Biological oxygen demand		Chemical oxygen demand		Suspended solids		Dissolved solids		Oil		Nitrogen		Phosphorus		Others	
	'000s of metric tonnes per year(mt/yr)	%	mt/yr	%	mt/yr	%	mt/yr	%	mt/yr	%	mt/yr	%	mt/yr	%	mt/yr	%	mt/yr	%
Domestic	15,179.9	61.4	4,480.2	14.7	10,052.5	41.0	5,248.6	12.6	7,305.8	99.6	-	-	660.5	16.1	80.1	11.7	-	-
Industrial	9,516.0	38.5	25,976.8	85.3	6,974.3	59.0	36,276.4	87.4	30.0	0.4	5,605.1	100	3,445.5	83.9	606.4	88.3	121.7	100
<b>TOTAL</b>	<b>24,695.9</b>	<b>100</b>	<b>30,457.0</b>	<b>100</b>	<b>17,026.7</b>	<b>100</b>	<b>41,525.1</b>	<b>100</b>	<b>7,335.8</b>	<b>100</b>	<b>5,605.1</b>	<b>100</b>	<b>4,106.0</b>	<b>100</b>	<b>686.4</b>	<b>100</b>	<b>121.7</b>	<b>100</b>

only 6 per cent (80 hectares) has been implemented; of this, 3 per cent is allocated to recreation. The salinity of the soils, a lack of fresh water and the contamination of air and soils inhibit plant growth. The scarcity of green areas in a city such as Chimbote also means a lack of protection from air pollution. The principle sources and effects of the environmental contamination in Chimbote are summarized in Table 2.

Table 2: Summary of the Main Sources of Environmental Contaminants in Chimbote and their Effects

Source	Type of contamination	Effects
Fishmeal industry	Air: soot particles, carbon monoxide, sulphur dioxide	Contribution to respiratory diseases, allergies, skin diseases, unpleasant odours, oxidation of electricity cables
	Water: fish wastes and other organic wastes, industrial waste water at high temperatures, grease	Contamination of the ocean, decrease in dissolved oxygen levels in the coastal areas of the ocean, loss of marine flora and fauna, impact on the traditional fishing sector (economic losses), damage to the sewerage system
	Soil: Fish remains, organic matter, wastes from fish-drying practices	Contamination of ground water and of the beaches, attraction of pests
Metallurgic industry	Air: carbon monoxide, sulphur dioxide, iron oxide	Contribution to respiratory diseases, allergies, atmospheric contamination, especially affecting the districts of Coishco and Valle del Santa, high concentration of chemical particles in agriculture and dwellings
	Soil: inappropriate location for slag disposal, carbon, coal and iron oxide waste	Loss of soil productivity, contamination of ground water
Sewage system	Sewage sludge	Contamination of the bay, faecal coliforms, decrease in dissolved oxygen levels in sea water
Solid waste	Organic waste, domestic, industrial and hospital waste	Attraction of pests, foul odours, carbon monoxide through inadequate burning of waste, groundwater contamination through infiltration

## II. A PEOPLE WITH HOPE

THE CREATIVITY AND courage of Chimbote's people provide a contrast to this very poor quality and poorly managed urban environment. They believe in a different future. It is the men and women of the shanty towns who have been working to defend and conserve the environment, forming the first commit-

tees for defence of the environment, recognizing their own rights as citizens and undertaking direct action to regain control of their surroundings.

Following the establishment of the Iron and Steel Company of Peru in Chimbote in 1958, the Tree Nursery recreational centre was created. Comprising 40 hectares of green area, it is the only place that provides access and relaxation to most low-income families, who visit it at weekends to enjoy children's games and the city's only public swimming pool or simply for a change of surroundings. For many years, it was administered by the Iron and Steel Company but, when the company was privatized, it wanted to include this recreational centre in its assets in order to cancel its debt to the social security system; the company had run into debt for failing to pay for its employees' medical treatment and insurance. They therefore put the recreational centre up for public auction in 1993, informing the public of this step through local periodicals. The recreational centre workers, through direct action, brought the matter to the attention of an environmental organization and, together, they launched a big campaign to publicize the issue on the radio and in newspapers and journals. This led to a broad-based demand by institutions in the area that the property not be sold but, rather, be administered by a local management board with the participation of the people. But this demand was rejected by the Iron and Steel Company and by the social security system who sought to halt this movement by making veiled threats to two environmentalists who were leading the proposal. However, the response was massive. Street demonstrations by students, workers, public bodies, NGOs and parents impelled the municipality to declare the recreational centre an ecological patrimony of Chimbote, and a courageous move by a judge prevented the auction. This small but significant victory encouraged the institutions involved to work together on other environmental issues. Their efforts made possible a space for debate on the city's environmental problems and the administration of the Tree Nursery recreational centre by a communal management board. A debate on Chimbote's other environmental problems developed and, from this arose the proposal to establish the Association for the Defense and Conservation of the Environment of the Province of La Santa (ADECOMAPS).

Women and students have played a very important role in the educational work in neighbourhoods and schools. The inhabitants themselves asked for training in environmental sanitation and defence of the environment. The NGO Natura responded to this request with training courses in both these areas. Almost 1,000 health promoters were trained, as well as many inhabitants in eight of Chimbote's 118 shanty towns. In these eight shanty towns, the inhabitants formed environmental defence fronts, led by the inhabitants and with support from the NGO. Box 1 gives two examples of mobilization for action and for negotiation. This is a process in progress, which still needs to be strengthened through capacity-building to empower the community based organizations. We have to take care not to simply "modernize" poverty but to fortify the dignity of the people by

making them aware of their rights as citizens, by strengthening civil society and through political pressure and developing viable proposals for improvement.

**Box 1: Examples of How Environmental Organizers Work in the Illegal Settlements of Chimbote**

**This box gives examples of the work of two community organizers, Marta and Clarita. Marta formed a grass-roots environmental defence front in her settlement, Miraflores Alta, which enabled the inhabitants to improve their area by installing a water supply and sewers and, through public hygiene campaigns, to improve rat control and environmental education. In addition, all of these undertakings aimed at a distinctive sort of environmental management which would listen to the voice of the local inhabitants. Marta received training as a community leader at a course on gender given by the NGO La Casa de Mujer (The House of the Woman). This motivated her to revive the organization of her settlement, which had collapsed. It was a slow process. Her settlement, Miraflores Alta, consists of ten housing blocks. Initially, only the ten block leaders took part but gradually participation rates grew. Several workshops on citizen rights were held. The neighbourhood committees were revived and a general committee for Miraflores Alta was set up. Together, they formulated an action plan and led a tree-planting campaign in the settlement. It was basically a process of rediscovering their own strength as organized population, of learning about their civic rights and of the important role women can play in the process of improving their habitat.**

**Clarita, a health promoter, has been training young women in the Fifteenth of April shanty town for ten years. This settlement was formed as a result of relocation after the original settlement was seriously affected by the El Niño of 1983. Clara, on her own initiative, headed an awareness-raising campaign in her settlement, educating neighbours about their civic rights. She formed a committee "Health and Environment", which organized to make demands for water, sewers and green areas in her settlement. But such demands directed to the local authorities did not produce any results. With the assistance of the NGO, Natura, a project was designed for the provision of water and a sewage system which received donor funding. The population contributed with their labour, digging the trenches. The project received some support from the water company. It also resulted in a constant process of awareness-raising, popular mobilization, pressurizing and making demands of the local authorities. Recently, Clarita led a tree-planting campaign in her area, which is surrounded by fish factories. The settlement now serves as a model, demon-**

**strating how people can improve their own environment even in the worst of conditions. This has given them the moral authority to make demands of the municipal authorities that they protect the health of the area's women and children.**

**Marta and Clarita are now members of ADECOMAPS which, while remaining a grassroots movement, has taken as its main goal the development of an environmental action plan for the city.**

1. Editor's note: it was the author of this paper and her husband who were falsely accused and imprisoned for 13 months.

In 1994, a campaign was launched against the pollution created by the fish industry, led by the NGO Natura together with the Ministry of Health and the ecology and environment committee of the National Congress. The environmental defence committees played a major role in this campaign, which was conducted via the newspapers, radio and television. In the midst of this campaign – prepared by a national press conference and meetings with various ministries, and on the point of declaring Chimbote in a state of environmental crisis – the government's anti-terrorist headquarters arrested the two main campaign leaders.<sup>(1)</sup> In Peru, there is still a law under which an accusation from a “repentant terrorist” is sufficient grounds for the arrest of any person, even in the absence of any evidence of guilt. The arrest of the leaders in Chimbote was not the first instance of this law being used to put a stop to ecological work in Peru and it will not be the last. The environmentalists were held in prison for 13 months and it was only as a result of strong national and international pressure that they were released after proving their innocence. During their time in prison, the neighbourhoods and NGOs continued their environmental work. Though it may seem ironic, it can be said that this difficult time actually strengthened environmental work in Chimbote. National and international attention was drawn to Chimbote's environmental problems, and new channels, contacts and spaces were opened up. Furthermore, the two environmentalists are now popular heroes with whom the population can identify in their hard struggle to improve their living conditions.

### III. WORKING TOGETHER TO BUILD A CITY IN WHICH TO LIVE

#### a. The Emergence of ADECOMAPS

ONE OF THE causes of the environmental problems described above is inadequate management by municipal governments, which translates into a lack of effective local institutions with few channels for popular participation and with management styles which are exclusionary and unable to work cooperatively. But this did not prevent or inhibit the need for institutions to work together in a dynamic process leading towards an integral solution to Chimbote's environmental problems – as can be seen by the de-

velopment of ADECOMAPS.

ADECOMAPS consists of 42 public and private institutions from the province of La Santa. It includes professional training institutions, ministries (such as those of health, fishery, industry and labour), NGOs, grassroots organizations, universities, etc. It is the district mayors who, together with ADECOMAPS' governing body, have understood the need to work cooperatively to tackle all the province's development problems in an organized and planned manner.

However, it is specific actions which give life to the association. One of ADECOMAPS' leaders is a 15-year old student, Lucho del Aguila. He initiated the clean-up of Villa Maria's wetlands, with youngsters from 30 schools taking part, in order to attract the community's attention and to demonstrate that the city's young people have an important role to play in the defence of environmental rights, including inter-generational rights. The response was impressive, with over 1,500 students spending two days cleaning up the wetlands and campaigning via radio, television and the press on the need to preserve this beautiful area which serves as a staging post for migratory birds.

From this particular action, a movement of environmental activists was born with its own dynamic and style and with the desire to contribute to wider processes in the elaboration of Chimbote's environmental action plan, while respecting its particular way of proceeding. The movement is Ecologists in Action and is made up of young people and students who wish to contribute to the elaboration of the Local Agenda 21, while not neglecting their training programmes. They receive support from Tom Jolly, an English volunteer with extensive experience working with young people to develop Local Agenda 21 plans. Ecologists In Action developed three working groups – young people, neighbourhood representatives and professionals – which encouraged the collective participation of these sectors in the city's environmental planning. Eco-tourist outings were organized to help identify the potential of the area's resources. One activity reflecting the group's dynamism was a workshop on the aspirations of young people and their future in the city. Its popularity and the students' massive response indicate the need they feel to communicate and to find a space where their proposals are taken seriously.

Teachers constitute another dynamic working group and, to date, they have initiated 42 ecological projects in education centres, ranging from setting up plant nurseries and bio-gardens for growing food to establishing ecological clubs whose dynamism was evident in their first joint meeting and in their student competitions to produce the best ecological projects.

Thus, ADECOMAPS is a collective effort uniting the aspirations and efforts of young people, women and children to live in dignity and in harmony, with the environment as their main ally in improving the critical conditions in which they live. As such, it is a dynamic, lively and flexible entity, promoting spaces for proposals and communication by those who, in the past, have been marginalized by private economic interests.

## b. The Formative Stage

For ADECOMAPS to gain strength, certain preliminary steps were necessary:

- Identifying the critical environmental problems via a diagnosis of the main foci of pollution. This involved the direct participation of the population as they helped to map the area they lived in and its main environmental problems with respect to air, water and soil. Their efforts were combined to provide the city-wide picture.
- Assigning tasks to the local actors, i.e. those who were to assume an active and decisive role by demanding their rights as citizens.
- Identifying the normative framework to support the promulgation of integrated alternatives in the province.
- Defining strategies to strengthen ADECOMAPS and collectively build its institutional side, namely by building contact and communication networks with other organizations in the province that share similar problems and aspirations.
- Calling more extensively on other local actors who play an important role in urban environmental management.
- Identifying the main processes taking place in the city and making projections for the next five years.

This was the context in which the Peruvian government's National Environmental Council (CONAM) instigated environmental dialogues in 13 cities as part of the development of the national environmental action plan. It was at that time (February 1996) that the efforts of ADECOMAPS, CONAM and the Cities for Living Forum came together, opening up for Chimbote the road to formulating its Local Agenda 21.

## c. Moving Forward Together

CONAM called together the 13 cities identified as having the most critical environmental problems at a national level to work together in developing a project to tackle the most crucial problems faced by each one of them. While this project was being developed, the team from Chimbote travelled to Lima to attend the Cities for Life Forum,<sup>(2)</sup> where the opportunity arose to work out a much broader proposal within the framework of the Local Agenda 21. Learning from successful experiences in Bolivia and Peru, and with the guidance from the ex-mayor of Ilo<sup>(3)</sup> who offered his full support based on his experiences in his own city, we worked out the proposal for our city. The work carried out in the Forum was presented the following day to CONAM and this led to CONAM selecting ADECOMAPS' project for presentation to the Global Environment Fund.

2. For more details, see the paper by Miranda and Hordijk in this issue.

3. A case study of Ilo was published in **Environment and Urbanization** Vol.8, No.1 and we will publish an updated case study in Vol.11, No.2 (October 1999).

This experience appears all the more successful considering that in Chimbote the local (provincial) government, under a mayor who is a businessman in the fish industry, has provided no support for ADECOMAPS. As noted earlier, Chimbote is a provincial capital and its local government jurisdiction embraces the whole province. There are eight local district governments within the province and three of these are in urban areas exhibiting similar environmental problems. The provincial mayor is responsible for the city of Chimbote and for the province. Four of the province's district mayors and one district mayor from another province with similar environmental problems participate very actively in ADECOMAPS. However, the organization is weakened by the fact that the provincial mayor does not take part. The reality in Chimbote at the moment is that a Local Agenda 21 is being formulated with strong support from other groups such as CONAM and the Cities for Life Forum but without the participation of the most relevant level of government, namely the provincial government of the city of Chimbote.

The mayor's refusal to participate has had other consequences. Steps taken by the Cities for Life Forum, and during the UN Habitat II Conference in Istanbul, made possible a visit to Chimbote by a representative from the United Nations' Sustainable Cities programme who arrived with the full intention of considering Chimbote for inclusion in the programme. ADECOMAPS turned out in force to receive him. However, the provincial mayor insisted on using his position to control the programme, with no coordination with other local actors. The Sustainable Cities representative was forced to choose between working with all the actors gathered in ADECOMAPS, but without the most important actor in the process, or working with the provincial government to produce solutions that were neither agreed upon nor approved by other local actors. Under these conditions, the Sustainable Cities programme was unable to work in Chimbote. This meant that, not only was it not possible to take part in the programme but also there was the loss of possible technical assistance.

Thus, the proposal for the Local Agenda 21 is being developed with the following actors:

#### KEY ACTORS    ROLE IN THE PROCESS

District: mayors	Facilitate and promote leadership and participatory planning in the development of the Local Agenda 21.
Social organizations:	Coordination and support for the leaders in developing expertise on Local Agenda 21.
Professional colleges:	Support with technical advice and as a consultative body.
Universities of El Santa and San Pedro:	Planning of roles within the framework of sustainable development and offering effective support through technology transfer.

NGOs: Facilitating and promoting the organizing of civil society to achieve agreement on the Local Agenda 21.

The media: Raise awareness and promote the participatory process of Local Agenda 21.

The development of a Local Agenda 21 was a real challenge for ADECOMAPS and followed these steps:

- Forming a management team within ADECOMAPS made up of the district municipality of New Chimbote, the College of Biologists, the National University of La Santa, the NGO Natura, the Ministry of Health, the province's Pensioners' Association and the Network for the Advancement of Women.
- Training workshops on urban environmental management for members of ADECOMAPS, local institutions, environmental promoters and local municipal officials of the Local Agenda 21 committee.
- Fundraising events by ADECOMAPS to pay for the acquisition of legal status.
- A workshop on "A Shared Vision of the Future" with the participation of representatives from various sectors in Chimbote.
- A declaration by the district mayors endorsing the need for a Local Agenda 21.
- The formation of thematic groups on the economy, social issues and the environment with the task of developing an initial proposal for the Local Agenda 21.

#### IV. CHIMBOTE'S LOCAL AGENDA 21

THE PROCESS STARTED with the defence of the Tree Nursery recreational centre. But those who took part in the process requested that the focus be broadened to work towards an integrated proposal for treating the environmental problems of the province, emphasizing the importance of local management. ADECOMAPS started its activities in February 1996, developing an urban environmental management plan with two basic components: the development of a Local Agenda 21, and gathering and elaborating technical information on the possibility of recovering El Ferrol Bay.

The first step in developing the plan was an environmental diagnosis of Chimbote, with contributions from all the stakeholders. Later, other themes were added such as strategic planning, adequate conflict management and sustainable development. Technical information on El Ferrol Bay was needed since it was decided to initiate Local Agenda 21 activities with a project to recover the bay as this brought together a theme with

which the inhabitants could identify, with problems that needed to be addressed in terms of serious contamination from both domestic and industrial origin, and the serious threat of destroying a valuable ecosystem. Until the 1960s, the bay was known as “The Pearl of the Pacific” and the people of Chimbote were proud of it; its recovery would also mean recovering some of the identity of Chimbote.

## V. ROLE OF COMMUNITY ORGANIZATIONS

THE DEVELOPMENT OF the environmental diagnosis and the process of developing the Local Agenda 21 with the participation of local actors are currently in their final stages. At first, the grassroots organizations did not see the relationship between a pragmatic solution to the environmental problems of greatest and most direct concern to them, and the need for planning the solution to these problems. They saw the development of a Local Agenda 21 as something strange and it is necessary to strengthen training measures in urban environmental management in order to link them directly into this process. Their contribution lies in participating directly in the work of public opinion polls, neighbourhood gatherings and communal environmental conservation work. Through such involvement, they realize that they have a direct role in managing the city’s environment and that they have the ability to take and participate in decisions defining the sort of city they want to have. Work has been done with them in the form of competitions to design the “shared vision of the future”, with special emphasis on the views of women, young people and children who are being progressively incorporated into the process.

However, popular participation is still at a spontaneous level and does not embrace all of the 118 illegal or informal settlements. It is difficult to involve many such settlements because of the weakness of their organizations in terms of community offices, fronts and/or federations which are not always broadly representative.

## VI. RESULTS AND BENEFICIARIES

THE NON-MATERIAL and material benefits of this whole process are summarized below.

NON-MATERIAL	BENEFICIARIES
Participatory urban environmental management project for the recovery of El Ferrol Bay.	Population of Chimbote
Completed diagnosis of Chimbote’s environmental problems.	Population of Chimbote

## MATERIAL

## BENEFICIARIES

Afforestation campaign initiated by establishing communal tree nurseries with participation of schoolchildren and inhabitants, and establishing forested areas in the informal settlements and colleges. The tree nursery produces 12,000 plants annually (both forest and fruit trees) and, in addition, four communal nurseries have been set up, three in educational centres to supply the informal settlements near the colleges as well as the main avenues.

Campaign to clean up the wetlands  
Villa Maria

Population of New  
Chimbote

Defence of the Tree Nursery  
recreational centre

Chimbote

## VII. EXTERNAL AND INTERNAL FACTORS IN THE PROCESS

IF WE REVIEW the experience to date, it is possible to identify some important strengths and also some weaknesses that need to be addressed.

### a. Strengths

- The population's recognition of the environmental problems.
- Learning about successful experiences in urban environmental management in other locations through information exchanges and traineeships via the participation of ADECOMAPS members in events which strengthened and extended their understanding of managing environmental problems. Examples include: the visits to Ilo and Cajamarca and the visit by three Chimbote representatives to the UN City Summit in Istanbul, each with distinctive experiences based on their particular position in Chimbote society. The representatives were the mayor of the province of La Santa; Marta Febres, representing the grassroots organizations; and Natura, which initiated the process and supported it throughout.
- The organizations' commitment to proposals for alternative development.
- Participation of key actors (local leaders, professional training colleges, grassroots leaders and district municipalities).

- Designing a “shared vision of the future” with the participation of women and children.
- Development of an urban environmental management project, approved by consensus.
- Development of expertise in those leading the process through direct knowledge of other experiences (Ilo, Cajamarca).

#### b. Weaknesses

- Resistance from the mayor of the province of La Santa to participate in and lead the process. This resulted in blocking the activities emanating from the population and the institutions, in hindering the achievement of significant advances in the city, and led to the loss of valuable opportunities such as that of participating in the United Nations’ Sustainable Cities programme.
- Very little participation by the fish industry sector in outreach to the community or the provision of spaces for joint dialogue with the authorities and inhabitants to find integrated and progressive solutions. This would have meant a real commitment to investment and to improving existing installations so as to reduce negative impacts from wastes and pollution on health and the environment. One-fifth of the businesses are providing some leadership as they have a vision of the future and are already upgrading their technology. In addition, Siderperú has taken this route by establishing ecological groups and by modernizing their plant, although without liaising with civil society. Eighty per cent of businesses, however, are still doing nothing.
- Lack of popular training materials to explain the process of developing the Local Agenda 21 (posters, educational books, etc).
- Poor knowledge within the local authorities about the means of urban environmental management.
- Dependence on external funding to carry on the work.

With regard to funding for ADECOMAPS, when it began operating it lacked the financial resources to obtain legal status or to put its plan into operation. This has been a major limitation which was partially surmounted by fundraising activities by ADECOMAPS itself. We also had recourse to local resources to support the development of training activities and publicity. At present, a small project with a budget of US\$ 50,000 has been put forward which will be financed by the GEF-UNDP starting in January 1999. Furthermore, we have additional support of US\$ 12,000 from the Dutch NGO NOVIB, which is interested in strengthening local environmental management processes.

## VIII. THE ROLE OF THE CITIES FOR LIFE FORUM

WITH CONSIDERABLE EFFICIENCY, the Cities for Life Forum (whose work is described in more detail in the paper by Liliana Miranda and Micky Hordijk) has enabled us, as members, to develop local expertise among those leading the development process of the Local Agenda 21. It has also helped to provide the methodological tools needed for making best use of the potential that exists in the area. ADECOMAPS has participated in the courses, fora and meetings organized by the Forum. This began with a systematic survey of successful urban environmental experiences and then, through direct visits, has enabled us to learn about the processes which have been developed in other cities with their particularities and similarities, their successes and difficulties. We have thus been able to really grasp the immediate problems of cities and even to acquire a more general understanding of urban environmental management in a concrete way.

The Forum's main contribution is as a space for debate and for contributions from a range of actors who provide us with key elements for managing the development of expertise in our cities – but for doing so with our own peculiarities and always with respect for our autonomy. This has been complemented by the valuable support of the IHS<sup>(4)</sup> and of their representative here in Peru who is accompanying us throughout this process, vital to our local sustainable development.

4. IHS – the Institute for Housing and Urban Development Studies in Rotterdam. Vol.10, No.1 of ***Environment and Urbanization*** included a summary of this institute's publications series on capacity-building for the urban environment – see *Environment and Urbanization* Vol.10 No.2 October 1998, pages 275-277.

## IX. MISTAKES AND FRUSTRATIONS

IN REFLECTING ON our experience, we believe that the main factor preventing our work from growing and having a greater impact is the scant participation by the city's leaders, the provincial mayor and the local businessmen who are the driving force of Chimbote's economy. The fact that we began our work with a campaign has given us an image which limits the possibility of finding cooperative solutions despite all the efforts we have made. Neither has the lack of dynamism in urban management helped; we have not designed a strategy to involve them in the project and our relationship with young people too is still at an early stage. We need to strengthen both these relationships.

Perhaps our greatest frustration is the slow pace of the whole process. We would like to give it more impetus but this does not depend on us alone. Nonetheless, we remain optimistic and believe that all these problems also provide opportunities.

## X. FUTURE PROSPECTS

ADECOMAPS HAS SOME real successes on which to build:

- establishing the Local Agenda 21 proposal in the city as a basis for urban environmental management;
- keeping ADECOMAPS going, with its ability to call on various actors;
- the development of local expertise at municipal level, especially in New Chimbote;
- the environmental diagnosis and the plan for promoting the Local Agenda 21;
- approval of the project by the GEF-UNEP;
- recognition of ADECOMAPS at local, regional and national levels.

The outlook for the future development of the Local Agenda 21 is quite positive. An opinion poll showed that 90 per cent of Chimbote's population believe that the environmental problems can be solved if we all work together. Thus, the conditions are present to strengthen cooperation in the strategy for local development.

At the same time, Chimbote has been regarded as part of the programme for Regional and Local Management for Sustainable Development (Ability 21) promoted by the National Environmental Council (CONAM) and the United Nations Development Programme. Its activities are directed towards solving the most urgent environmental problems in accord with the characteristics and requirements of each locality, and it prioritizes the participation of local and regional communities in addressing problems.

We have undertaken measures, still underway, to join the United Nations' Sustainable Cities programme. We must make sure that the environmental management work initiated by local organizations does not weaken but, rather, gets stronger in spite of the difficulties, and that requires the participatory and consensual approval of the environmental action plan, guaranteeing the commitment of all actors to carrying it out. This is the challenge we face and it requires sustained technical and financial support.

The plan will incorporate the city's most urgent environmental projects for the next 15 years, on three fronts: the sustainable use of natural resources; the promotion and control of environmental quality and recovery of the most severely affected ecosystems; and environmental management and education.

## XI. SOME CONCLUSIONS ON LESSONS LEARNT

THE COURSE OF the activities initiated to date has taught us the following lessons:

- We have to feel our way ahead since there are no formulae or schematic recipes for the solution of environmental problems. Looking at the experiences of others shows us the richness of environmental management from the perspective of concrete particular actions and the way in which local actors have

resolved their conflicts.

- Within these processes, there are certain basic elements which are necessary for the success of an urban environmental undertaking, namely: popular participation, coordination and leadership, development of local expertise and clear development plans.
- The prevailing centralist system in Peru (and in other countries) excludes or marginalizes the regions and provinces from influencing important political decisions. It also fails to provide them with funds and the possibility of developing local capacities.
- Local governments are spaces whose importance is constantly increasing and where a different style of planning can take place on the basis of genuinely democratic and participatory relations. It is therefore important to strengthen them.
- The participation of local citizens in urban environmental management provides a direct way of not only strengthening their abilities but also of promoting their rights in decision-taking and empowering them as social actors. For these reasons, their capacity should be strengthened and their participation fostered.
- The creation of the Cities for Living Forum has made possible the exchange, in a healthy and fraternal way, of experiences at a national level, from a multi-disciplinary perspective and from different areas of the country. It has given all those who took part a broader vision of our potential as a country and of the local challenges for the future.
- A lesson for us to share is the highly unusual or unique process of environmental management which is being developed in Chimbote. The leadership is coming from an organization of civil society which is facilitating local cooperation among many actors in spite of resistance from the mayor and from fish industry entrepreneurs with their short-term and profit oriented vision of the city. This resistance, although a heavy burden, neither invalidates nor destroys this process.
- The new trends in sustainable human development show us the necessity for implementing urban environmental management in a way which respects human rights, as well as contributing to cities' cultural identity, the protection of the environment and their citizens' quality of life now and in the future.