Innovative urban environmental management in Ilo, Peru

Doris Balvín Díaz, José Luis López Follegatti and Micky Hordijk

SUMMARY: This paper describes how the local authorities and population of a small city in Peru addressed the environmental problems they faced from a large copper mine, the fishmeal industry and a lack of basic investment in infrastructure. It shows how an innovative and committed local council was able to work with the industrial concerns and the inhabitants in developing a long-range plan to reduce industrial pollution and to improve housing conditions and the living environment through support for community organization and self-help in both new and established low-income settlements. Strong local democracy proved to be a key factor in this success.

I. INTRODUCTION

SINCE THE 1950s, some of Peru’s secondary cities have experienced a rapid growth in their populations due mainly to the exploitation of important natural resources (see Table 1). These cities include Chimbote with developments in its fishmeal and ferro-metallurgic industries, Talara with its oil refinery, Pisco with fishmeal and steel industries, La Oroya with its metallurgic industry and Ilo with its fishmeal and copper industries. The economic activities located in these five intermediate cities account for 50 per cent of Peru’s foreign exchange.

In these cities, the industrial sector has developed with little thought being given to the urban expansion that has followed. In some cases, these cities have grown from what were essentially camps for industrial workers; in other cases, the initial urban structure was an industrial site surrounded by squatter settlements. In all cases, economic growth has resulted in an unbalanced spatial structure dominated by the industrial sector and accompanied by a lack of housing, basic services and other facilities. These problems are aggravated by the severe environmental degradation associated with uncontrolled industrial development. Although some of these cities belong to the most prosperous areas in the country when judged by their contribution to Peru’s GNP, they are also known to have among the most polluted and unhealthy environments.

The smallest of these “economic enclaves”, Ilo, is often cited

Doris Balvín Díaz is a lawyer, and founder and current director of the NGO Labor. She also worked with the Municipality of Ilo and was chairman of the Permanent Multisectoral Committee on Environment. Labor originally focused on work with trade unions but, for over seven years, has worked in the field of local development, urban development and urban environmental management.

José Luis López Follegatti studied psychology and education and has worked in the field of urban planning since 1987. He came to Ilo in 1987 and from 1992-1995 was director of the NGO Labor. He recently moved to Cayma in Arequipa where he now works as head of the planning department.

Micky Hordijk is a geographer, specializing in urban environmental management. She is currently carrying out her PhD.
research on the role of local initiatives in urban environmental management in Lima, Peru (University of Amsterdam, Department of Human Geography and Centre of Latin American Studies and Documentation, and the Institute for Housing and Urban Development Studies in Rotterdam, the Netherlands).

Address: Labor, Jr., Abtao 607, 2 piso, Ilo, Peru. Tel: 00-51-54-781816; fax: 00-51-54-781208; e-mail labor@labor.pe

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Table 1: Population Growth in Some of Peru’s Secondary Cities

<table>
<thead>
<tr>
<th>City</th>
<th>1941</th>
<th>1961</th>
<th>1972</th>
<th>1981</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chimbote</td>
<td>4,000</td>
<td>60,000</td>
<td>160,000</td>
<td>217,000</td>
<td>267,000</td>
</tr>
<tr>
<td>Talara</td>
<td>14,000</td>
<td>22,000</td>
<td>41,000</td>
<td>27,000</td>
<td>54,000</td>
</tr>
<tr>
<td>Pisco</td>
<td>13,000</td>
<td>25,000</td>
<td>25,000</td>
<td>34,000</td>
<td>29,000</td>
</tr>
<tr>
<td>La Oroya</td>
<td>1,000</td>
<td>10,000</td>
<td>21,000</td>
<td>38,000</td>
<td>44,000</td>
</tr>
</tbody>
</table>

as an example of very poor environmental conditions. “Ilo is a city to work in, not to live in” is a common saying among its inhabitants. The mining company, Southern Peru Copper Corporation (SPCC) is the city’s main polluter. Some idea of the scale of pollution is given by the 1,920 tonnes of sulphur dioxide that the Southern Peru Copper Corporation emits into the air each day, making it one of the world’s top five producers of sulphur dioxide. The amount of water used by the Corporation in its production process draws heavily on the very limited fresh-water resources of the region. The Corporation has also destroyed 20 kilometres of coastline by dumping 30 million metric tonnes of untreated mining waste into the ocean each year. Both beaches and the ocean are heavily polluted, forming a very serious threat to the town’s second most important economic activity, fishing. There are no studies to show a direct link between health problems and the mining activities in Ilo but, over the last five years, the Ministry of Health has reported an increase in the incidence of respiratory ailments, cancer, urinary and circulatory diseases.

What is less well-known is that Ilo has experienced a very innovative form of urban management over the past decade which has led to considerable improvements in both environmental conditions in the area and in the living and housing conditions of its inhabitants. A key factor in this process is the high degree to which the local government is prepared to share power with its citizens. The participative planning strategy developed in Ilo may also be useful for other small cities in Latin America. In this paper, we outline Ilo’s main problems and then describe the planning strategy and its most striking results. This strategy is illustrated through a discussion of two particular institutions:

- The Permanent Multi-sectoral Commission on Environment which brings together the very different sectors (including the industrialists, the municipality and the citizens). The Commission’s first task was to analyze the environmental consequences of the industrial activities and urban growth and to monitor the implementation of a programme to address these problems.
- The Management Committees: neighbourhood committees of local residents formed to improve environmental and living conditions. These committees are supported by local government and an NGO.
The paper concludes with a summary of the most important factors underlying Ilo’s successful strategy.

II. A BEGGAR AT A BANK OF COPPER?

ILO IS A small coastal city in the very south of Peru, 1.250 kilometres from Lima and close to both the Bolivian and Chilean borders. It is situated in the Atacama Desert which occupies a small piece of land along the coast.

Ilo’s population grew rapidly from 1940 to the end of the 1960s. From a fertile valley where 3,000 inhabitants cultivated olives and vines, the area changed into an industrial campment when the Southern Peru Copper Corporation built its gigantic plant first with two and then four smokestacks. A few years later, the fishmeal industry, which was then growing in national prominence, also established itself in Ilo. As a result, the whole town’s development was shaped by the industrial sector which controlled 70 per cent of the land suitable for urbanization.

In the three decades from the beginning of the 1940s, the number of inhabitants multiplied twenty-fold. The number of migrants from the Andean highlands increased reflecting a deterioration in the living conditions in the area and the growth in urban employment opportunities. The migrants brought their own cultural inheritance and language (aymara) which have not always mixed easily with the traditions of the farmers and coastal fishermen. However, the willingness of the Iloan people to organize themselves is also ascribed to this aymara background.

The Moguera mines proved prosperous. The mining Corporation managed to increase its revenues from US$ 450 million in 1993 to US$ 800 million in 1995 with an increase in its profit from US$ 43.6 million to US$ 200 million during the same period. The Southern Peru Copper Corporation is the eighth largest copper producer in the world providing 5,500 jobs and 17 per cent of Peru’s export income. The three fishmeal factories offer direct employment to 600 of the city’s residents and support another 400 jobs in the fishing industry. The output from these factories represents 15 per cent of the Peruvian fishmeal production.

III. ILO’S ENVIRONMENTAL PROBLEMS

THE INDUSTRIAL PRODUCTION has had very serious environmental consequences. The sulphur dioxide discharged by the Corporation causes constant atmospheric pollution. It generally means that visitors to the city suffer from sore throats and irritated eyes within a few hours. If the wind blows from the wrong direction, “los humos” (dark toxic clouds) drift into town and drivers have to switch on their lights and residents stuff rags under their doors to try and stop the fumes from seeping into their homes. Mining waste is dumped at sea and includes an estimated 176,000 metric tonnes of lead, 7,368 metric tonnes of arsenic and 1,933 metric tonnes of cadmium each year. This
causes changes in the marine life over an area that stretches more than six kilometres out to sea. Settling and dispersion of mining slag are causing geomorphological changes along a six-kilometre stretch of the shoreline. A further problem for the city and the surrounding agricultural activity is the scarcity of freshwater. The natural wells that previously provided water to the city dried up at the beginning of the 1970s due to over-exploitation. The Corporation requires 1,700 litres per second for its production.

The rapid growth in the city’s population and urbanized area has also contributed to the poor environmental quality. The discharge of domestic waste-water into the sea meant that it was so polluted with faecal coliforms that the beaches were no longer attractive to tourists and the quality of the seafood declined. In the 1980s, over 30 per cent of domestic solid waste remained untreated. Ninety per cent of the roads in squatter settlements in the intermediate zone - between the coastal area and the plateau - were unpaved leading to serious dust problems in this very arid climate. Poor transport connections between the plateau and the lower areas meant that densities in the coastal areas increased as no other expansion areas were available.

By the beginning of the 1980s, Ilo had three distinct areas: the old centre of the fishing town, the "new town" ("pueblo nuevo") which grew out of the industrial camp and the "pueblos jovenes" (literally "young settlements" - a name commonly used in Peru for illegal or informal urban settlements) where the migrants settled. A railway connection built by the Corporation for its production process separated the old town from the newer parts.

IV. TURNING COPPER INTO GOLD
a. How Ilo’s Improvement Began

IN 1981, THE left-wing party Izquierda Unida (United Left) won the local elections. After undertaking some much needed reforms in the administration, the first important initiative was the approval of an Urban Development Plan in 1984 which initiated discussions on urban land use. Since then, this Plan has formed the basis of all other plans produced and it has proved to be an important starting point for change. The guiding principles of the Plan are:

- to improve environmental quality and living conditions in the city;
- to integrate the segregated parts of the city;
- to relate the city to its surrounding environment;
- to strive for sustainability;
- to develop an approach based on consultation and popular participation.
b. Consultation as a Political Tool

The strategies through which the urban authorities encouraged popular participation and partnerships in Ilo have proved to be important and, within these strategies, *concertación* (consultation) plays a major role. In Ilo, consultation does not only imply asking people their opinion but also involving them in decision-making. *Concertación* is “...a process of negotiations in which the different actors are recognized as legitimate partners, capable of developing and implementing strategies, sharing a clear vision of the future and respecting a common interest.”[^1] In practice, this means that all direct stakeholders in a certain area or sector are invited to join discussions on specific topics and form a committee. Agreements reached by consensus in this committee are taken as a political decision and are implemented. Only when a decision by consensus cannot be reached does the decision fall back into the hands of the Mayor.

One of the first committees formed in this way (in the second half of the 1980s) was the committee on urban transport. It involved drivers, trade-unions, the municipality, community leaders and small traders. The task was to improve the urban transport system. In the past, tariffs were set by the municipality but this commission came up with a new system of tariffs and new transport routes. In this way, many decisions previously taken by the municipality are now taken in a forum where all the actors directly affected are represented.

The main preconditions for *concertación* are a clear and stable leadership, a community able to express its needs, a democratic tradition which values and recognizes the perspectives of the different sectors, and individuals and groups able to formulate concrete projects and plans within the framework of an overall vision of development.

Each of these factors is present in Ilo. The political leadership has remained in power since the 1981 elections and the leaders are still working on the implementation of the Urban Development Plan produced during the first term. Through a more participatory approach, the residents and their community organizations have learned to express their needs. Support has been given by two local NGOs who have become important partners for both the municipality and the residents of low-income settlements. As a result of the industrialization, Ilo has a tradition of strong trade unions and this has proved to be a further advantage. Added to this is the culturally inherited attitude of the Aymara Indians which is a favourable factor for a strong local democracy. Finally, the Urban Development Plan has been designed as a step-by-step approach towards long-term goals of sustainable development.

It took a lot of work and the Mayor, his staff and the NGO had to attend many meetings; but now, all Iloans share the same vision of their city. Ilo is - and will be for at least the coming decade - a city under construction. It is a city that has been built mainly by its inhabitants, and their resources - both human and financial - have provided the main source of invest-

ment. Most inhabitants live in squatter settlements but much can be done to assure a decent standard of living.

As important as the concrete results has been the formation and development of a team of local leaders that are able to work together to manage the city. The first group is made up of the municipal employees headed by the charismatic Mayor. The second is staff from the NGO Labor and a group of neighbourhood leaders from the Federation of Squatter Settlements. This Federation represents all neighbourhood organizations from the 14 pueblos jovenes. Its executive committee is composed of the leaders from the neighbourhood organizations (50 per cent) and representatives elected in annual public assemblies. The Federation - whose main task is to represent the inhabitants of the squatter settlements in all the different communities - is a very important partner in the process.

These leaders are supported by other NGOs working in the city, by the water company SEDA-Ilo, by representatives from the farmer’s organizations, by employees of the Ministry of Health, school teachers, journalists, nurses, fishermen and miners, the women’s federation and even certain private enterprises. The number of local leaders exceeds 200. The first group provides a stable political leadership but it could not be so successful without the full support of the second broader group.

In 1987, Ilo received unexpected support. Discussions began at national level on market integration between the Mercosur countries (Brazil, Paraguay, Argentina and Uruguay) and the Pacific coast countries of Asia. Much of the transport between the east of the continent and Asia has to use the Panama canal or go round the southern cape of Chile. A port that could serve the existing railway connection between Brazil and Bolivia would improve communication links considerably. The local leaders made use of this opportunity and presented Ilo as a possible future “international port”. A first but substantial step in this process was the “Convent Mariscal Andres Santa Cruz” signed by the presidents from Peru and Bolivia on 23 January 1992. In this, Peru allowed Bolivia - a landlocked country - a 40-year tenureship of a part of Ilo’s beaches, the port and the shore. Substantial investments were committed to large infrastructure projects including an airport, and the highway connecting Ilo to Bolivia’s capital La Paz was paved. Ilo was also declared a free trade zone and 120 hectares of the shoreline were reserved for this and as an industrial zone for Bolivia.

Most of Ilo’s inhabitants do not profit directly from these changes. However, they had the psychological effect of encouraging the Iloans to develop a positive vision of the future, motivating them to invest in the city.

c. The Permanent Multi-sectoral Commission on Environment

In 1987, as a response to popular protest, the municipality formed the “Multi-sectoral Technical Commission” (CMT). This Commission had to evaluate the environmental impact of the
industrial activities and come up with solutions. Central government (i.e. the ministries of Housing and Construction, Health, Agriculture, Mining and Energy), the Peruvian Institute of Marine Conditions (IMARPE), local government (the Mayor of Ilo) and Southern Peru Copper Corporation were all represented on the Commission. The first step the Commission took was to extend the scope of its work to include the environmental impacts of urbanization and the fishing industry. The Commission presented its conclusions and recommendations in a document entitled the “Environmental Rehabilitation of the Southern Zone of Peru” which was signed by all the partners involved. The Commission, including the Southern Peru Copper Corporation, agreed to the following project proposals:

- Building of a treatment plant to reduce sulphur dioxide emissions; the estimated costs of US$ 108 million to be paid by Southern Peru Copper Corporation.
- Construction of tailing ponds to treat mining waste; the estimated costs of US$ 40 million to be paid by Southern Peru Copper Corporation.
- Construction of a retaining wall for slag; the estimated costs of US$ 860,000 to be paid by Southern Peru Copper Corporation.
- Improvements to the solid waste collection and treatment system which include the introduction of micro-enterprises and building a sanitary landfill for final disposal. The costs of the landfill to be shared between the government, Labor and the micro-enterprises.
- Improvements to the sewage system including wastewater treatment in oxidation lakes. The privatized water company (SEDALLO) to provide the required US$ 10 million.
- Reforestation of 300 hectares in the desert using treated wastewater for irrigation. The trees to be paid for by the Federation of Squatter Settlements (US$ 56,136), Labor (US$ 52,300) and the Municipality (US$ 126,000)
- Implementation of the Urban Development Plan.

The Permanent Multi-sectoral Commission on Environment was responsible for monitoring the implementation of the Rehabilitation Plan which was to cover the whole of the province of Ilo. This Commission includes representatives from all the affected municipalities and representatives from the squatter settlements, from farmers from the valley and from regional government. The Southern Peru Copper Corporation was kept under constant pressure. In 1992, it was brought before the International Water Tribunal in Amsterdam whose jury judged it guilty of contaminating Ilo’s water resources. Although the Water Tribunal has no judicial power, the international public attention was damaging to the Corporation. A direct result of this case was that the Corporation was forced to change from its preferred choice of discharging partially treated mine waste into the ocean to building an underground depository, an option which costs twice as much. The sulphur dioxide treatment plant has been built and began operating in September 1995. The
construction of tailing ponds has begun. So far, 20 hectares of desert are irrigated with wastewater including a part planted by Southern Peru Copper Corporation; and the micro-enterprises are functioning. Two micro-enterprises collect waste in areas inaccessible to municipal trucks, two others take care of the final disposal. They coordinate with workers from the Municipality to ensure that the waste they collect is further treated.

d. Local Democracy in the Management Committees

Much of the local work done in the city is executed through comités de gestión or management committees. When the first committees were formed in the late 1980s, they had only limited power. They were instituted by the Mayor as advisory bodies - to advise on new norms and regulations. The committees sought to involve all stakeholders, as illustrated by the committee on urban transport. The strategy used was the same: agreements reached by consensus in these committees were ready for implementation.

The scope of the management committees was soon extended and, today, they function as primary catalysts for small projects. In the committees, problems are discussed, goals established and the different ways to achieve the goal identified. The heterogeneity of the committee members contributes to innovative solutions. Once a certain approach is chosen, responsibilities are assigned to the different parties. Many of these committees are now formed solely from local residents and they seek relationships with other actors such as the Municipality, the Federation of Squatter Settlements and NGOs. In principle, the projects proposed have to be self-financing. However, the Municipality often contributes technical assistance and necessary heavy equipment, the NGO contributes loan finance from a revolving fund and the community contributes labour and pays for concrete and other necessary materials (see Table 2).

Local residents pay for most of the costs. For example, to pave a road with an area of 480 square metres in one of the squatter settlements required an investment of US$ 4,278. One-third was paid for by the local government, two-thirds by the community.

In the last five years, almost 200 committees have been formed.

Table 2: Responsibilities of and Investments by the Different Parties

<table>
<thead>
<tr>
<th><strong>Comité de gestión</strong></th>
<th><strong>Municipality</strong></th>
<th><strong>Federation of squatter settlements</strong></th>
<th><strong>NGO</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unskilled labour</td>
<td>Design</td>
<td>Land</td>
<td>Environmentaleducation</td>
</tr>
<tr>
<td>Organizing community</td>
<td>Technical assistance</td>
<td>Trees</td>
<td>Assistance in communitybuilding</td>
</tr>
<tr>
<td>Monitoring and maintenance</td>
<td>Skilled labour</td>
<td>Promotion of the organization</td>
<td>Assistance in reforestation</td>
</tr>
<tr>
<td>of the project</td>
<td>Machinery and equipment</td>
<td>Technical supervision of the reforestation</td>
<td>Revolving fund for concrete</td>
</tr>
<tr>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combustible</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Most were initiated to pave roads, create green areas and recreation areas or to help build a boulevard with an amphitheatre along the coast. Over 40 per cent of the households (or over 4,000 families) living in squatter settlements in the centre of the city have participated in one or more projects. As one community leader noted:

“Years ago, the boulevard we have nowadays was nothing more than a big dusty slope, where we threw our waste away and which we used as a public latrine. For us it was impossible to reach the other zone of the city and we suffered from the mosquitoes and from the diseases our children caught when they played in this area. It seemed impossible to change this situation. We needed several meetings to persuade the people and to plan the work. But we managed.” (Senora Mendoza).

Table 3

<table>
<thead>
<tr>
<th>Type of project</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paving roads, creation of green areas</td>
<td>149</td>
<td>78</td>
</tr>
<tr>
<td>Boulevards and parks</td>
<td>16</td>
<td>8.4</td>
</tr>
<tr>
<td>Installation of basic services</td>
<td>12</td>
<td>6.3</td>
</tr>
<tr>
<td>Construction of local institutes</td>
<td>6</td>
<td>3.1</td>
</tr>
<tr>
<td>Sporting and recreation facilities</td>
<td>8</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>191</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4

<table>
<thead>
<tr>
<th>Project</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads paved</td>
<td>114</td>
</tr>
<tr>
<td>Houses painted</td>
<td>5180</td>
</tr>
<tr>
<td>Trees planted on the sidewalks etc.</td>
<td>6,000</td>
</tr>
</tbody>
</table>


V. PREPARATION FOR THE FUTURE

AS NOTED EARLIER. 70 per cent of the land suitable for urban development in the city is controlled by the industrial sector. It is now recognized that the plateau can provide room for the expansion of the city but urbanization on the plateau is not without problems. It is costly to provide the inhabitants with the basic services and roads have to be build to connect the new area (“Pampas Inalámbrica”) to the city centre. However, the municipality has started to prepare the city for further growth.

When new migrants arrive and invade part of the desert around
Ilo, they are told: “You are welcome in Ilo, we will help you to build up your home and your life but only if you are willing to invest in our city and follow our rules.” New inhabitants have to accept the structure of the plots and the neighbourhoods laid out by the Municipality. Shortly after they have received legal tenure of their plots, the households have to pay the costs of laying them out and a team from the Municipality organizes a workshop to build latrines. The inhabitants pay for the materials and have to build the latrines themselves although the Municipality indicates the corner of the plot where the latrine has to be built. This is so that it will be easy to connect the latrines to the sewage system once it reaches the plateau.

Public taps are installed, one tap per 100 households. The households are responsible for maintenance and have to collect the monthly fees. The water company (SEDA-Ilo) pays for the pipelines and the households have to pay for the taps and, at a later stage, the costs of connecting their households to the main pipeline. As the water company noted, “...we see these new migrants as our future clients and try to establish a good relationship with them from the beginning.” Once the latrines are built and the public taps installed, people begin to develop their houses. Due to Ilo’s special status as a “bi-oceanic port city”, it receives a disproportionate share of finance from a national credit scheme for housing. People can obtain a loan for building materials relatively easily.

The Municipality offers further support through technical assistance. Several years ago, architecture students were invited to Ilo to design houses for the new settlements. They spent some time in the city, talking with the newcomers to learn of their needs and priorities - and then designed houses according to what they heard. One of the main requirements was for houses that could be built incrementally so that the designs could be used by households only able to afford a house over a period of 10 years. The Municipality organized a competition. During an exhibition of the housing models, the people from Pampas Inalàmbrica were asked to vote for the best design. Five winners were selected: four residential housing units and one unit combining residential use and commercial activities. Building plans for the five winning designs are available from the Municipality at no cost and people can also hire municipal technicians at relatively low cost to help with the building. Of course, they are free to build other houses but this requires them to hire their own architect and technicians. It is proposed that the newer urban areas will be developed further with the same comités de gestión as in the older parts of the city.

With this “enabling strategy”, the Municipality has provided 10,000 serviced plots over the last seven years and further developments are continuing. At present, they are laying out the fifth and sixth extension areas and plans are ready for the seventh and eighth. Future extensions are already noted in city masterplans.

To increase the supply of fresh water, at the beginning of the 1980s a pipeline was built to connect Ilo to a natural well in the mountains 60 kilometres away. This solved the problem of water...
scarcity. Between 1985 and 1990, several boulevards were built, connected by stairs, to reduce the problem of spatial segregation. Using the stairs - built and maintained by the inhabitants - most citizens can easily reach the sea. Once this work was completed, the city was ready for the implementation of the environmental recuperation plan which included:

- The enforced modernization of the production process in the Southern Peru Copper Corporation to reduce emissions and waste.
- Treatment of 97 per cent of domestic wastewater which has greatly reduced the contamination of the beaches. Wastewater is treated in oxidation lakes close to the city with a capacity of 250 litres per second. Purified water is used to irrigate a forested area of 70 hectares - which is to be extended to cover 200 hectares.
- The implementation of an improved system of solid waste collection with micro-enterprises and small treatment plants. Today, 95 per cent of the city’s solid waste is collected.
- The implementation of a project for three small bio-filters for wastewater treatment. They have a capacity of two litres per second and this water is used to irrigate the hillsides. Now, some of the hills are green again which makes the city a more agreeable place to live and prevents some of the dust pollution.
- Two-thirds of the roads in the city being paved, thus reducing the amount of dust in the air. Many of the roads have trees planted on the pavements.
- Large-scale reforestation and the creation of green areas in both the city and the province of Ilo.
- Planning and implementation of extension areas “Pampas Inalambrica” and 10,000 serviced plots produced in seven years.

VI. LESSONS LEARNED

OF COURSE, THE achievements noted above have not solved all of Ilo’s environmental problems. The sulphur dioxide emissions remain Ilo’s main environmental problem as the new treatment plant affects only 18 per cent of the emissions. But, on all other issues, the Iloans have won. Their city is nicer, cleaner and more attractive. As a result of the treaty between Peru and Bolivia, investments in heavy infrastructure (the airport and the regional highway) have improved Ilo’s accessibility. And, as a result of their own activities, the Iloans have improved their own living conditions: they have paved their roads, built their latrines, painted their houses and planted their trees. The Municipality seeks solutions that are ecologically sustainable - for instance wastewater used for reforestation on part of the desert and, on a smaller scale, in windmill driven bio-filters to green the hills again. And, as a sign of the acceptance of the forced marriage with the Southern Peru Copper Corporation, the main coastal boulevard is paved with reused waste from their mines.
Three factors can be identified which underpinned Ilo’s successful strategy (illustrated in Figure 1):

- a stable and reliable leadership;
- a clear vision of the future;
- policy-making developed through a widespread consultation process involving all actors in decision-making.

**Figure 1: Three Elements to Create Changes**

- Willingness to realize a shared dream
- Responding to questions as "what", "how", "why" and "when"
- Detailed and feasible
- Formulated by the leaders
- Assigned to teams
- Shared by the population
- Use opportunities to: reduce risk factors; overcome weaknesses; improve strengths

- Identification and recognition of the leaders
- Capacity to spread a convincing image of the future to the citizens
- Capacity to take decisions
- Train for teamwork and replication of best practices
- System of values: social equity and ecological sustainability
- Invest in the process to create a common vision

The same leaders have remained in power for five consecutive terms. Recently, they were re-elected for a sixth further three years. (Figure 2 summarizes some key factors during this period.) Although the Mayor has changed once, this has meant no change in policy. The current Mayor talks as enthusiastically about the Urban Development Plan as his predecessor did. The inhabitants understand that their city is, and will be, a city under construction which will mainly have to be built by their own efforts. Their activities are coordinated within the framework of the Urban Development Plan. This shared vision and hope for the future underlies the city’s struggle for improvement. Ilo is also an important example for international funding agencies as it shows what can be achieved with relatively little external finance.

But, when one of the more powerful individuals behind Ilo’s development was asked what factors lay behind its success, he admitted: “It is not just that we did a good job. We were also very lucky: we had the right people in the right place at the right time and they were able to act together when circumstances were favourable. Ilo is not that easy to replicate, you have to know how to make use of the possibilities a situation offers.” The first successful Mayor started to dream of a better city in
Figure 2: Key Factors in Ilo's Experience

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<tr>
<td><strong>BASIC FACTORS</strong></td>
<td><strong>MENTALITY</strong></td>
<td><strong>STRATEGIES</strong></td>
</tr>
<tr>
<td>Scale of the city</td>
<td>City where everybody can live</td>
<td>'83 Identification and implementation of some small strategic replicable pilot projects</td>
</tr>
<tr>
<td>Geopolitical position</td>
<td>Capacity to negotiate</td>
<td>'83 Formulation of an overall vision of the future in the Urban Development Plan</td>
</tr>
<tr>
<td>Natural resources</td>
<td>Consultation also for environmental issues</td>
<td>'85 Introduction of consultation as a political tool, Implementation of projects.</td>
</tr>
<tr>
<td>Ecological characteristics</td>
<td>Flexibility</td>
<td>Start of the work of the Permanent Multi-sectoral Commission on Environment.</td>
</tr>
<tr>
<td>Socio-cultural</td>
<td>Political will</td>
<td>Formulation of the Environmental Rehabilitation Plan</td>
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<td>Intermediate</td>
<td>Bioceanic port city</td>
<td>'83 Including environmental issues in decision making.</td>
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<td>Biocenic port city</td>
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<td>Development institutions committed to environmental issues.</td>
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<td>Copper, fish</td>
<td></td>
<td>Continuity of leadership</td>
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<td>Hyper-arid, deteriorated and non-natural</td>
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<td>Aymara migrants, tradition of communal work</td>
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1981. But all the major projects have only been carried out in the last five years, after he stepped down. It takes a long time to pass from dream to reality. But, as they say in Ilo, “Dreams without actions are useless, actions without dreams make no sense. But when dream and action unite a positive vision of the future is born.”
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