



## **CAPACITY BUILDING FOR CITIES AGENDA 21 AND SUSTAINABLE CONSTRUCTION, THE CITIES FOR LIFE FORUM EXPERIENCE IN PERU**

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### **Summary**

The Cities for Life Forum (CLF) is a national inter-institutional network which works in 29 cities with 83 affiliated institutions (Universities, Municipalities, NGO's and civil society organizations). The CLF's most significant achievement is having contributed to the creation and/or implementation of Agenda 21s in 15 of Peru's 26 largest cities. The CLF's experience is valuable for two main reasons: it has built the capacity of local actors - both individuals and institutions whose improved skills have positively influenced city's environmental management and, it has adapted urban management concepts, theories, practices, methodologies and tools to respond to their real problems and opportunities, for instance, through Participatory Budgeting strategies meanwhile applying its Sustainable Construction approach in the benefit of the poor.

CLF is developing an innovative program "Capacity Building for Sustainable Construction" which aims to develop capacities, strengthen institutions and empowering key actors for designing, validating, promotion and institutionalization of initiatives for eco-efficient urban infrastructures and affordable housing. This paper summarizes Peruvian City's environmental problems and the barriers for sustainable construction as well as its successful City's Agenda 21 and Sustainable Construction objectives, experiences and proposals. CLF aims to establish alliances that make a positive contribution to Sustainable Human Development in Peru.

### **Abstract**

Peru suffers a rapid process of urbanization in 1950, 30% were urban and in 2004 more than 72% Peruvians live in cities, most of them in the capital, Lima where 30% of all Peruvians live. In Lima, the richest city in the country, the urban services deficit is still high. In 2001, there were only 1.8 m<sup>2</sup> green area per inhabitant, 20% of the population had no domestic water connections, 21% had no sewerage connections, 35% no access to transportation and public transportation and 43% no solid waste collection.

The Cities for Life Forum (CLF) is a national inter-institutional network which works in 29 cities and by 2005, it has 83 affiliated institutions. The most significant achievement of the CLF is having contributed to the creation and/or implementation of Agenda 21s in 15 of Peru's 26 largest cities. It is a combination of support for local action involving all local stakeholders and support for inter-city and inter-sector collaboration. The CLF's experience is valuable for two main reasons: it has built the capacity of local actors - both individuals and institutions whose improved skills have positively influenced urban environmental management and, it has adapted urban management concepts, theories, practices, methodologies and tools to respond to the real problems and opportunities.

The CLF has positioned itself in the national, South American and international space as a point of reference for sustainable urban development and environmental action. The CLF plays an important role in the elaboration of policy proposals for sustainable urban development.

Since 2002, the CLF is developing an innovative program in Capacity Building for Sustainable Construction in Perú which aims to develop capacities for the design, validation, promotion and institutionalization of initiatives for eco-efficient urban infrastructures and affordable housing nation wide and in two cities. Five action groups are being implemented:

- a. To realize campaigns of community and consumers awareness with this construction philosophy putting general information about sustainable construction at the public's disposal by mass media campaigns.
- b. To develop curricula to incorporate urban environmental concerns on education in elementary and university realizing courses and specialized events
- c. To develop and promote policy proposals to modify the standards, norms and regulations of the construction activities in Peru, for instance, to forbid asbestos.
- d. To provide advisory activities supporting partner institutions building pilot projects applying our proposals: University Auditorium and Parks in Chimbote and Villa el Salvador.
- e. To develop studies and action research to generate and disseminate technical information on materials, construction processes and "good practices" in sustainable construction affordable for the poor and adapted to the Peruvian context.

The successful urban management and sustainable construction experiences examined by the CLF indicate that its work is long-term, calling for patience and perseverance. In the years to come, the Forum must continue to make contact and work with those (individuals and institutions) active in all aspects of developing urban environmental management, sustainable construction practices and to continue establishing alliances that make a positive contribution to sustainable human development in Peru.

## **1. Human Sustainable Development and Agenda 21**

Development models adopted in recent decades have clearly failed, especially in terms of assuring the basic rights and meeting the basic needs of the poor. The poor have become poorer, and the gap has widened between them and the proportionately small rich population that enjoys the full benefits of a market economy and globalization. To CLF, Human Sustainable Development implies people's quality of life improvement and particularly the expansion of every person's capacities, as citizens, in the framework of harmonious, productive and healthy relationship with the nature.

Our holistic conception starts by recognizing the values and capacities of human beings: we are the center of the sustainable development concerns. The development must be done by "somebody" and for "somebody"; therefore, it begins from the human being, in all its dimensions (emotional, social, biological, cultural), admitting the existence and the rights of other species. The concerted involvement of all actors and stakeholders in a development process is a must.

Above all mentioned, the development requires a productive and economic foundation to start with; therefore the economical dimension should be the basis. Likewise, the development needs the establishment of social, cultural, institutional and political relations, all of which spread its activities in a specific territory and environment, the ones that at the same time determine the limits and boundaries of any possible development.

In short, Human Sustainable Development means a harmonic balance between all this dimensions (human being, economic, social and territorial) and to promote a process from city and/or local level to achieve such a goal means that there is a City and/or Local Agenda 21 (LA21) process being held.

### **1.1 Cities Agenda 21, the CLF's experience**

Human Sustainable Development can be achieved with concrete actions in cities. Being capable of facing the before mentioned problems making use of their opportunities as well as generating cities that satisfy the needs of its inhabitants, particularly of the poorest. This requires an integrated and holistic strategy that considers the links of the city with the nature: i) reducing to the minimum the use of non-renewable resources and promoting its substitutes, ii) creating a sustainable use of the renewable resources and iii) without exceeding the absorption capacity of the ecosystems (river, atmosphere, natural resources in general, etc.)<sup>1</sup>. A city that when developed, could make feasible the rural area and city surroundings development, from which depends for its existence and normal development, minimizing negative impacts.

For practical reasons, environmental management and sustainable construction in Peru needs to take both short and long term perspectives. It needs to build a positive shared vision of the future and *concerted*<sup>2</sup> processes of collaboration, based on a local institutional framework or integrated system of environmental

management, anchored in sustainability that organizes actions and promotes the mobilization of local people and resources for development.

In this way, **Local** and/or **Cities Agenda 21s** are genuine tools for Human Sustainable Development for their particular contexts. Drawn up through autonomous and concerted leadership, they can produce clear and workable action plans to address problems affecting the poorest groups – as shown by the experience in the city of Ilo (see box below attached) - on of the 15 Agenda 21 City's processes that are being developed in Peru.

### **Box 1. The 'Ilo XXI' Sustainable Development Plan**

Ilo XXI was formulated through a process of dialogue and consultation involving local officials, public sector and civil society organizations. It accords with Agenda 21, as approved at the Earth Summit (1992) and ratified in Rio+10. It was possible thanks to the conviction and will of municipal officials, leaders and institutions in Ilo and citizens; close to 2,500 persons participated during the latter part of 1999 and through 2000, making this one of Ilo's peak periods of participation in recent decades. This energized the city's social fabric, heightening its capacity to evaluate, reflect on and design proposals, build consensus and provide impetus to decentralization in decision-making.

#### **Objectives achieved**

- Ilo has a renewed shared vision of the future
- Update (with consensus and concertation) the current Integrated Development Plan
- Development and strengthening of local institutions
- Improved efficiency and effectiveness of the Municipality
- The promotion of public and private investment (large, medium and small enterprises)

#### **Results obtained**

- The Sustainable Development Plan 'Ilo XXI'
- Guidelines for a new version of the Territorial Planning and Development Plan
- Urban Master Plan — finished and approved
- Guidelines for a new version of the Environmental Management Plan
- Proposal for a creation of Ilo's Provincial Development Council
- Plan for the Institutional Development of the Provincial Municipality
- Approved new regulations and standards
- Monitoring and evaluation, new system established

The process involved actor's participation. While the planning process was continuous, there were six principal stages: 1) Creating awareness and motivation and organizing, 2) analysis, diagnosis and organization, 3) Drafting proposals and *concertation*, 4) Public presentation of the Plan, 5) Dissemination and setting up the Plan for execution and a permanent stage (6) monitoring and evaluation of compliance with the Plan and new versions of it.

In parallel, there were four organizational processes: 1) technical, worked with consultants and officials, 2) participatory, involving social actors and organizations, 3) political, corresponding to the intentions and political projects of the mayor, the Municipality and local actors, and 4) dissemination and communication.

Diaz Palacios and Miranda Liliana, Ilo's experience updated, Article to be published by IIED, UK

Additionally, the **Participatory Budgeting** is an instrument of direct local democracy and transparency which serves for (annual) investment decisions and prioritization in an agreed on consensus-based manner, providing people's opportunities to participate democratically on equal terms, expressing its sector or territorial requirements beside others.

Participatory Budgeting (PB), which started in Porto Alegre (Brasil), has become a strong strategy to achieve good local governance, understood as efficient, effective and legitimate power and authority for local development in Peru. In our experience, PB represents the "second step" in the LA 21 process towards planning democratization, laying the basis for a transparent audit of activities and investments implementation. The municipalities of Peru are assuming PB methodology by force of law since 2003, so we expect that by the time, this would mean a qualitative jump in municipal management.

The "third step" in the Local and/or Cities' A21 process is to invest properly the city budget putting into practice the sustainability approach to the urbanization and construction process.

## 2. Environmental problems in Peruvian Cities

Cities can also be considered spatial concentrations of people and their economic, social and cultural activities, other than primarily agricultural and that they can show a different and more positive situation with proper urban environmental management. Therefore, it should also be said that cities are the concentration of poverty and wealth, of problems as well as solutions.

The majority of Peruvian cities have severe deficiencies in infrastructure, which has eroded quality of life, in particular through overcrowding, air and water pollution, serious problems with public transport, traffic congestion and noise pollution. City centers are encroaching on green and recreational areas, agricultural land, and natural areas, such as wetlands. Industry, mining, construction and fishing generate very high levels of pollution that seriously endanger human life and ecosystems, increasing pollution and the risks of natural and environmental disasters, generated by the poorly environmental regulated governmental sectors. Furthermore, current patterns of production and consumption are clearly unsustainable in the long term.

Of about 26 million Peruvians 52% live in poverty, 72% is urban, and this is expected to increase to 85 percent in 2020.<sup>3</sup> The process of urbanization in Peru has been accompanied by significant degradation of the urban environment and by increasing rates of urban poverty – 9 out of 14 million poor are living in urban areas.<sup>4</sup> This is greatly exacerbated with the highly centralized government and the systematic exclusion of the poor both from the design and approval of policies, and from the benefits of development. Even in Lima, the capital and the richest city in the country, the urban services deficit is still high. In 2001, there were only 1.8 m<sup>2</sup> green area per inhabitant (while WHO recommends 8m<sup>2</sup>), 20% of the population had no domestic water connections, 21% had no sewerage connections, 35% no access to transportation and public transportation and 43% no solid waste collection.

By 2010, it is estimated that Peru will have a population of approximately 30 million, concentrated in 21 cities with more than 100,000 inhabitants mainly in the coastal region (National Environmental Council, CONAM, State of environment National Report, 2,000). Addressing such environmental challenges and problems will require integrated and long-term strategies anchored within proposals for sustainable development, environmentally friendly construction processes, applied competently at different scales in both urban and rural areas throughout Peru.

When cities expand rapidly without investments being done their building practices—and indeed planning generally—fail to keep pace with growth, and inexpensive but potentially hazardous building materials and construction processes are chosen over safe and sustainable ones. The question arises as to how it is possible to be concerned for the economical costs and the preservation and improvement of the natural ecological environment as well as being equally concerned for the environment made by our societies in the cities, taking into account that it is ourselves (governments, users, construction companies, professionals, etc) who are letting it deteriorate to the point of becoming almost inhabitable for the vast majority of the poor.

### 2.1 Sustainable Construction in Peru, a dream or a true possibility?

In Peru, there are about 16 million people living in 38 cities and more than 400 villages. As the great majority of these families do not have access to the minimum resources for survival, making just a well-constructed house is an impossible dream. The result is numerous neighbourhoods comprised of inadequately built and dangerous domiciles and to apply the concepts of sustainability to this informal construction process is even harder.

The question is if these processes of construction actually available to the urban poor can be improved with environmentally sound techniques and proper technical assistance can be provided. The continued development of such neighbourhoods creates a series of unfavourable consequences for the health and economy of these families, decreases their quality of life and negatively impacts the surrounding environment.

On the other hand, large infrastructure projects like Camisea, are constructed without sufficient environmental evaluation due to the lack of an institutionalized evaluation process. The construction sector is one of the few state sectors in Peru without an Environmental Action System, which would help to prevent and control the environmental impacts of these projects. Such a system is mandated by the Organic Law of the Municipalities, but rarely implemented.

The effects of large-scale infrastructure and housing projects generate environmental pressures, which negatively impact natural resources (gravel, primary inorganic material, forests, etc.), land (agricultural and urban) and landscapes. Construction materials such as cement, sand, gravel, clay and wood are extracted from rural and jungle zones causing the degradation of the land and these ecosystems. The production of cement, lime, and bricks, often near cities, consumes large amounts of energy and creates substantial air

contamination from dust. The indiscriminate use of wood, hydrocarbons and natural resources such as water amplifies the greenhouse effect on a global level.

As the urban population expands, the infrastructure encroaches on agricultural and natural areas, creating communities on the outskirts of cities. Additional lands are lost for the creation of roads, landfills and recreational spaces. Therefore, forests, marshes, and other ecosystems are impacted by the effects of water extraction and the contamination of air, water and soil.

Contradictory, the traditional rural construction methods are often environmentally friendly but are abandoned in the cities due to a false concept of modernization. A typical expression in Peru refers to stone, bricks, and reinforced concrete as “noble materials” thus implying that more environmentally sustainable materials, such as adobe, are materials of the poor, but themselves prefer not to use them anymore.

All of this contributes to the deterioration of health levels and quality of life for poor populations in rural and urban areas. This is exhibited by the increasing frequency of respiratory illnesses such as asthma, pneumonia, bronchitis, and other illness such as chronic diarrhoea and skin rashes, which are related to the quality of water, the management of potable water and sewage systems, caused by the gradual deterioration of the environment.

Additionally, the common use of toxic materials in construction has been proven to affect the health of people and ecosystems. For example, there are numerous sicknesses and deaths that have been caused by exposure to asbestos (asbestosis, cancer and mesotelioma), formaldehyde associated to asthma, and to trichloroethylene known to cause leukaemia, besides more than 20 more poisoning elements, which are still not forbidden under our legislation. Those most at risk are the industry construction workers who manufacture products containing the toxic materials, the construction workers as well as the inhabitants of buildings using those products.

Unfortunately, clean products, most of them, are simply not available in Peruvian market place and if they do, they are imported, much more expensive and generally unknown to the urban and rural poor. Thus, these populations are left with no choice but to use construction materials which often contain toxic elements such as asbestos, trichloroethylene, lead and others.

In the short past academic programs regarding sustainable construction and eco-efficiency were nearly non-existent. Postgraduate courses in fields such as engineering and architecture rarely include information on the criteria for the evaluation of environmental quality and sustainable development or on the analysis of environmental architectonic directives and their pathologies. In addition classes do not address the decisions made regarding successful investment in architecture and infrastructure and the universities lack the resources and capacity for the investigation of new technologies. Thus, the few informed professionals acquired the knowledge through independent research and experience. Unfortunately there is currently very little awareness of sustainable and eco-efficient construction methods in Peru. This lack of knowledge is explained by the high demand for “modern” technologies which rarely incorporate the notion of sustainability into their designs.

There are also an insufficient number of specialists within the construction industry for the management of alternative and clean technologies. To solve these problems the CLF has committed to create a critical mass of professionals and leaders in the construction industry throughout Peru. By taking advantage of opportunities that are opening in the immediate future, the sustainable construction industry can develop a larger labour force and begin to change the construction protocols in Peru.

### **3. The Cities for Life Forum Sustainable Construction proposals and experience**

The CLF has been advocating decentralization on the national level because we believe that environmental problems are more effectively resolved on a local level. The ongoing debate over the decentralization process makes it possible for CLF to have a deep impact on local environmental policies. In fact, the CLF have become a key actor in creating local environmental protection laws in communities, so, some of CLF's goals in LA21 and PB are finally prioritized by government at all levels.

CLF has positioned itself in the national and international forum as a point of reference for sustainable development and environmental action. CLF plays an important role in the elaboration of proposals for and implementation of human sustainable development projects. It is the representative of civil society in the National Commission on Climatic Change since 2003, and is part of the Directorial Council of the National Network of Environmental Education as promoted by Education Ministry and CONAM.

The experiences of the Cities for Life Forum have received wide recognition in international circles and publications (see: Miranda *et al*, 1998; Satterthwaite, 1999; Hardoy *et al*, 2001<sup>5</sup>) and can be seen as a inspiring source for other countries where Local Agenda 21 has not been discarded as a passing fad but continues to be implemented as part of local and participatory efforts to achieve sustainable cities. There will be no Human Sustainable Development without planning that can convert our political actors to subjects that are capable, democratic and efficient and can invest and actually built cities for life. Just like the Cities for Life Forum slogan says: "What we do together, will last forever!".

**Box 2. Vision of Cities for Life Forum**

We want cities for life that reflect the expression of sustainable development and that offer an adequate quality of life to its inhabitants. This is to be achieved through equal opportunities for a healthy, safe, productive environment with solidarity and in harmony with nature and its rural surroundings, the cultural traditions and spiritual values, adapted to the diversity of the country.

We want cities for life in which its inhabitants identify themselves with its development, in which they are proud of their culture and natural beauty of the place they live in, where they achieve the coordination process, be competitive and demonstrate solidarity.

Source: Forum Cities for Life, National Action Plan 1996-2020

This positive vision is concretized in indicators which are considered necessary and which should be taken into account in order to build up a city for life, one that is the expression of sustainable urbanization and construction processes.

**Box 3. Indicators for a City for Life**

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|-------------------------------|--|
| • City's reason for being     | Quality of life of the people  |
| • Urban development           | Planned and concerted  |
| • Habitat                     | Adequate, compatible with human dignity  |
| • Size of the city.           | Diverse, balanced relation between number of inhabitants and resources needed and available for a harmonious development |
| • Management performance      | Efficient and effective  |
| • Relations city-surroundings | Harmonious, inter-dependent and complementary  |
| • Urban economy               | Diversified, profitable and competitive  |
| • Production and consumption  | Capable to generate the productive base and recycle its waste  |
| • Relationships               | Based on solidarity and equity   |
| • Government                  | Democratic, decentralized and participative  |
| • Culture                     | Reaffirming identity and respect for diversity   |

Prepared by: FCPV

With this accumulated and integrated experience, based on its main goal of developing capacity to design, validate, promote, and institutionalized Cities Agenda 21 and Participatory Budget, recent efforts have been concentrated on the consolidation of proposals and innovative initiatives for infrastructure and affordable housing applying sustainable construction and eco efficient construction approach in Peruvian cities and their poor human settlements.

**3.1 Our contribution to Sustainable Construction in Peru**

Since May 2003, the CLF's Executive Director has been included as "fellow" of the group Ashoka, a group that encourages social outgoings as well as being recognized by Avina foundation as a "leader", thanks to that, the CLF has been developing and innovative project "Capacity Development for Sustainable Building in Peru", encouraging the building of sustained neighborhoods in Lima, Villa el Salvador and Chimbote, through moving resources and activities from social institutions which aims to develop capacities for the design, validation, promotion and institutionalization of initiatives for eco-efficient urban infrastructures and affordable housing nation wide and in two cities. Five action groups are being implemented:

- To realize campaigns of community and consumers awareness putting general information about sustainable construction at the public's disposal by mass media.

- To develop curricula incorporating urban environmental concerns on education in elementary and university and realizing courses and specialized events.
- To develop and to promote policy proposals to modify the standards, norms and regulations of the construction activities in Peru, for instance, to forbid asbestos.
- To provide advisory activities supporting partner institutions building pilot projects applying our proposals: University Auditorium and Parks in 2 cities.
- To develop studies and action research to generate and disseminate technical information on materials, construction processes and “good practices” in sustainable construction affordable for the poor and adapted to the Peruvian context.

The CLF aims to achieve such cities for life, where people can actually call them home, with construction standards that will ensure quality and safety and demonstrate the benefits of sustainable building: reduced costs over the long run and conservation of precious resources such as water and energy. Working with construction companies, self-builders, and policymakers in two carefully chosen sites—shantytowns in Lima and Chimbote—the CLF is reducing the use of hazardous materials such as asbestos and encouraging communities to set aside community-tended green spaces and parks. In the process, we expect that with our experience we will demonstrate that citizens—including poor people with few resources—can erect homes and design neighborhoods that are safe, secure, and clean.

As said, there is no legislation supporting these ideas, the Ministry of Housing and Construction does not have evaluation protocols regarding environmental impact, an established system of analysis, or a procedure for environmental monitoring. This lack of environmental standards in the construction industry allows for the fabrication and use of products and materials that ignore concerns of environmental degradation and resource conservation.

To avoid these dangers the CLF has developed an inventory of toxic elements commonly used in construction materials as well as is developing a directory of “cleaner construction companies and products”. Besides, it is lobbying and campaigning with mass media, press conferences, analysing construction materials being sold freely and disseminating the information about their toxic elements, promoting Congress Audiences, developing normative and legislative proposals submitted to the Congress and the Housing Ministry as well the Health Ministry, participating in private construction Ferias to disseminate this information and to get basic awareness of environmental rights existed within the Peruvian population teaching directly to housing consumers and workers what to buy and how to better protect them. These awareness campaigns include the creation of Environmental Action Systems in Peruvian cities, campaigns against the use of toxic chemicals and minerals such as asbestos in construction materials, and education campaigns among local populations.

Particularly important is our Anti Asbestos Campaign which is being developed in alliance with other organizations such as the Consumers Defense Peruvian association and the Anti Asbesto Association and with the support of several other organizations such as the Peruvian Medical Association, the Health Forum, the Ecological Forum and the National Environmental Association beside several Congress Persons and Majors and University experts. Our aim is to achieved that during 2005 a Law forbidding all types of asbestos in Peru will be approved. After that, we expect to initiate an aggressive campaign to safety retire the asbestos in public constructions such as schools, health centers and government housing programs.

Additionally, there is a strong group of action related to training and capacity building in sustainable construction, which involves the design of workshops, post-graduated courses, decentralized seminars and classes on sustainable development and ecological construction. Participants are conducting research on different aspects of sustainable development and construction and create inventories and reports that are being used in CLF campaigns. Then, with all of this information CLF will put pressure upon the appropriate authorities and works with business executives in the creation of alternative methods within the construction industry.

In 2005, in order to gain the knowledge and skills as needed, CLF has started a training program with Nuffic support, a Dutch educational organization, whose objective is to form a decentralized critical mass of 60 professional activists from different cities, mainly members of the CLF, who will have the ability to implement eco-efficient and sustainable processes in housing and infrastructure construction particularly in benefit of the poorest and to contribute with innovations and initiatives feasible to be developed within their institutions and cities to improve their construction practices. This group will allow the CLF to strengthen and lead advocacy campaigns at local, regional and national level in order to modify construction legislation in favor of environmental sustainability.

In summary, the type of activities CLF is being developing under all of these above mentioned projects are:

- Political action at the local, regional and national level (mainly through the Anti asbesto's National Campaign so far):
  - Analysis and normative proposals of sustainable construction and its politics.
  - Formulation of standard technical proposals for the substitution of toxic materials and inefficient construction methods; such as proposals for change in the National Regulations of Construction.
  - To define the role of local and regional governments in the promotion of clean construction materials and sustainable construction.
  - Agenda 21 and better construction for the poor, developing case studies with AL and Europe best practices in sustainable construction.
  - Agenda 21 and Participatory Planning with a perspective towards sustainable construction (eg. control and/or stimulus using cleaner construction processes to get bigger budgets from the Municipalities).
- Participation and leadership for the development of sustainable construction practices.
  - Training activities in the generation of synergies: teamwork, management of conflicts, negotiation, and the application of the consensus model
  - Citizen participation on building processes (eg. How to improve self construction of poor houses and public urban spaces and facilities)
  - Training activities for the development of the capacity for personal preservation through a proactive attitude in the face of resistance.
- Eco-efficiency and sustainability in construction:
  - Evaluation of construction pilot project from a sustainable perspective.
  - To demonstrate how sustainable construction might be cheaper, cleaner and affordable for the poor in countries like Peru with concrete case studied and examples from AL and European countries and advisory activities to pilot projects in Peruvian cities.
  - To develop strategies to reduce the contribution of construction to the green house emission gases and the environmental problems of sustainable construction in the framework of climatic change and ecosystem defence.
  - To disseminate case studies information of eco-efficiency in construction: energy, water and soil conservation, adequate waste management, the preference for clean materials and the recycling of construction materials.
  - To develop an inventory of toxic and dangerous materials, contaminants and their potential substitutes; most commonly encountered problems (asbestos, trichloroethylene, benzene, formaldehyde and lead); as well as to prepare suggestions for cleaner production as stipulated by ISO 14000 and related international standards.
  - To propose tools for the substitution and financing and use of non-toxic materials and eco-efficient processes in construction.
- Knowledge and skills in the practical use of materials and conservation oriented towards construction processes applying the projects as part of a life cycle approach
  - To develop methods, techniques and strategies for using materials and construction processes which conserve, protect and make rational use of natural resources.

These capacity building activities generating and disseminating consistent information and capacities helps CLF to build consensus, create awareness and to put the necessary pressure and control within community leaders, builders, authorities, press people, consumers and a larger base of professionals in the field of Human Sustainable Development and Sustainable Construction, so in not so long term, these goals might be feasible and reachable in Peruvian Cities in the benefit to all of their inhabitants.

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<sup>1</sup> Satterwhaite, David (IIED-UK), Agenda 21 Seminar Conference, Lima, November 1998

<sup>2</sup> In this document, "concertation or concerted actions" mean to reach agreements between different actors with different interests. It is not the same than consensus or consultation.

<sup>3</sup> UN Population Division 2003

<sup>4</sup> Although extreme poverty is located mainly in rural areas, 3/4 of the poor live in urban areas. Peru Government has built this data based on the needs assessment analysis as well as levels of income. Furthermore, the recession of Fujimori's regime in the 90's increased urban poverty levels. Recently, with Toledo government poverty in general has decreased from 54% to 52%.

<sup>5</sup> Miranda, L., Hordijk, M. (1998) Let us build cities for life: the National Campaign of Local Agenda 21s in Peru, *Environment and Urbanization*, Vol. 10, No. 2, London, pp. 69-102.

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