Protected Areas in the City, Urban Wetlands of Bogotá*

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Abstract This article analyses the environmental ideologies on how to manage protected areas, specifically what ideologies may be applied when protected areas are within a city. Analysing the conservationist and preservationist discourses and the different types of community participation will give a wide view on possibilities of management for protected areas. Its main interest is to understand which ideologies were applied for protected areas in Bogota according to the Spatial Development Plan, and how it affected environmental management strategies of wetlands in the city. The case study of Córdoba Wetland will be analysed according to its policies and participation opportunities in order to guaranty sustainability.

Key words conservationist, management, participation, preservationists, protected areas, wetlands.

Key words plus Wetlands, wetland conservation, acuatic bioteic communities, protect areas, conservation of natural resources, Bogota (Colombia).

* This article is part of my MSc. Thesis in Environment and Sustainable Development. It is a reflexion article, on how depending on the Government ideologies Conservationist or Preservationist policies are taken regarding protected areas. It analyses the possibilities of community participation as a way to guarantee sustainability of environmental projects, specifically in Córdoba Wetland in Bogota-Colombia.

Áreas protegidas en la ciudad: los humedales urbanos de Bogotá

Resumen Este artículo analiza las ideologías ecológicas sobre cómo manejar áreas protegidas, específicamente las que se puedan aplicar a áreas protegidas dentro de ciudades. Analizar los discursos conservacionistas y proteccionistas y los diferentes tipos de participación ciudadana nos dará una mirada amplia sobre las posibilidades del manejo de áreas protegidas. El interés principal será entender qué ideologías se aplicaron a las áreas protegidas en Bogotá, según el Plan de Desarrollo, y cómo estas afectaron las estrategias del manejo ambiental de los humedales en la ciudad. El caso del humedal de Córdoba será analizado según sus políticas y oportunidades de participación con el fin de garantizar la sostenibilidad.

Palabras clave Conservacionismo, gerencia, participación, conservacionistas, áreas protegidas, humedales.

Palabras clave descriptor Humedales, conservación de humedales, Ecosistemas acuáticos, Áreas protegidas, conservación de los recursos naturales, Bogotá (Colombia).

Áreas protegidas na cidade, os humedales (zonas úmidas) urbanos de Bogota

Resumo Este artigo analisa as ideologias meio ambientais sobre como gerir as áreas protegidas, especificamente quais ideologias devem ser aplicadas quando estas se encontrar dentro de uma cidade. A analise dos discursos conservacionistas e preservacionistas e os diferentes tipos de participação comunitária darão uma ampla visão sobre as possibilidades de maneio das áreas protegidas. Seu interesse principal é compreender quais ideologias foram aplicadas nas áreas protegidas em Bogotá de acordo com o Plano de Ordenação Territorial, e como ele afetou as estratégias de maneio meio ambiental dos humedales da cidade. O caso do Humedal de Córdoba analisa-se de acordo com as políticas e oportunidades de participação para garantir a sustentabilidade.

Palavras chave Conservacionista, gerencia, participação, preservacionista, áreas protegidas, zonas úmidas.

Palavras chave descritor Wetlands, conservação de zonas húmidas, Ecossistemas Aquáticos, Áreas Protegidas, conservação dos recursos naturais, Bogotá (Colômbia).

Introduction

UN estimates suggest that two-thirds of the world's population will live in cities within the next 50 years. Increasing urbanization is placing greater stress on the environment, especially in and around urban centres. Preserving strategic ecosystems like protected areas, which are areas of "land and/ or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (International Union Conservation of Nature [IUCN], 1994, p. 4), is crucial for society in order to achieve sustainability. Protecting natural ecosystems will be vital for monitoring global change and guiding human adaptation to a changing world (McNeely, 1995, p. 2). The predominant tendency of development and growth of cities has reduced important ecosystems through deforestation and degradation. In the city of Bogota, the area of wetlands in 1940 was 50.000 hectares, but today it stands at only 773 hectares (Renjifo, 1992). As development and urban growth expands, protected areas, such as wetlands, that once were located in the periphery or rural areas are absorbed by the city, losing their environmental and ecological qualities. This situation places them in a category of protected areas not clearly defined; somewhere in between natural protected areas and urban parks.

In Colombia, at the local level each city prepares a specific management strategy for wetlands integrated with the spatial development plans. According to the Spatial Development Plan (POT) of Bogota protected areas are categorised into Mountain ecological parks and Wetland ecological parks within the Principal Ecological Structure[1], which also includes urban, metropolitan and neighbourhood parks that have recreational uses.

Strategies for the protection of wetlands have been based mainly in traditional discourses from the Conservationist Movement. However, these perspectives have been revaluated because they exclude people living in and around protected areas. New strategies for partnerships in conservation focus on local community participation as well as in the inclusion of different stakeholders in the management of protected areas; they are called co-management partnerships. And although the district policy of wetlands involved community participation, still management processes keep on being without public involvement. This article will analyse Conservationist and Preservationist ideologies, and different types of participation. Under the theoretical background exposed it will analyse the case study of Córdoba Wetland in Bogota, where confronting ideologies collide. The idea that community should participate in the management of wetlands and the reality that people are excluded of the processes of management shows that there are still flaws in integrating community in protected area management.

1 The Principal Ecological Structure is the network of spaces and ecological corridors that sustain and connect biodiversity and ecological processes through out the territory. It is constituted by: protected areas (East Hills of the city, wetlands and natural parks), rivers, streams and urban parks.

In order to achieve environmental goals and preserve wetlands it is necessary to open space for the inclusion of local community in protected area management. The significant implication of this is that the responsibility for protecting and improving the environment relies not just with high-level decision makers but also with citizens at many other levels of society. This democratic approach can reach levels of cooperation and environmental performance beyond the reach of both the State and the community.

This article will present environmental ideologies and discourses, types of participation in management of protected areas, and the case study of Bogota's wetlands, specifically Córdoba Wetland.

Environmental ideologies

Influenced by city perceptions and views is the complex relation between the city human habitat and the preservation of its natural environment. According to Viviescas (2003, p. 80), "it is clear that society cannot exist but only in a constructed environment, and the configuration of it necessarily involves the modification of the natural surrounding". Therefore it is necessary not to draw the responsibility of deterioration to the city as an abstract subject, but to examine the conditions in which settlements have been developed. Based on its assessment it is possible to propose rational alternatives of interpretation and intervention. The concept of sustainable development has been addressed for that purpose so that it is possible to keep growing under conditions that prevent the depletion of resources in order to maintain them for the present and future generations. According to the Brundtland Report, the main operational objectives of sustainable development are to revive growth, change the quality of growth, satisfy essential needs, ensure a sustainable level of population, conserve and enhance the resource base, reorient technology, merge environment with economics, restructure international economic relations, and make development more participatory (World Commission on Environment and Development [WCED], 1987, p. 49). The Bruntland definition of sustainable development is: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 8). But relating this concept to the city could be more theoretical than practical; urban growth inevitably will change conditions in the environment[2]. However the concept of sustainable development has managed to be introduced into planning regulations and practice-helping development to posits the long term planning goal of a social environmental system in balance. "It is a unifying concept enormously appealing to the imagination that brings together many different environmental concerns under one overarching value; it defines and articulates how society values the economy, the environment and equity" (Paehlke, 1994, p. 360). In balancing these three goals: economic growth, environmental protection and social justice, relies the success and conflict of sustainable development (Campbell, 1996, p. 298).

Idealistically it must be possible to reconcile all this views but in reality each of the discourses have a prevalent interest that neglect the other

2 The Ecological Footprint is one way of measuring how our lifestyles impact not only on the environment, but also on other people. It calculates how much productive land, freshwater and sea is needed to feed us and provide all the energy, water and materials we use in our everyday lives. It also calculates the emissions generated from the oil, coal and gas we burn at ever-increasing rates, and it determines how much land is required to absorb our waste. In order to reduce the ecological footprint it is necessary to having a footprint of less than 1,8 global hectares per person (World Wildlife Fund, 2004).

two. Planners and governments should protect the natural environment from uncontrolled development, although the opposite is more likely to happen: the historic tendency of growth has been to promote development of cities at the cost of natural destruction. Even though conservationists, park planners and open space preservationist have come into the defence of nature, the question is how to reconcile the three main interests of development: to "grow" the economy, distribute this growth fairly and in the process do not degrade the ecosystem (Campbell, 1996, p. 304).

In the process of defining protection areas and geographical limits to growth in the city, economic, political and social pressures collide with environmental evaluations. It is usual that while defining territorial master plans public rights and necessities will take precedent over private rights, as a consequence land uses might change limiting developers from constructing on defined plots of land. Several property right interests will collide in limiting and consolidating protected areas in the city, therefore planners need better tools to understand their cities and regions not just as economic systems, or static inventories of natural resources, but also as environmental systems that are part of regional and global networks trading goods, information resources and pollution. It is crucial to translate concepts of the economic vocabulary of global cities with notions of biodiversity, landscape linkages, and carrying capacity. "In other words translation, like conflict negotiation exposes the promises and limitations of communication based conflict-resolution" (Campbell, 1996, p. 306).

How to balance this variety of perspectives and growth is the main objective of sustainable development. For "meeting the needs of the present without compromising the ability of future generation to meet their own needs" preservation of ecosystems is vital for the survival of humanity. "Supporting life renewal processes means providing clean air and water, which requires stable and functioning natural ecological systems that are provided only by protected areas" (Luisigi, 1995, p. 20). Even so, cities keeps on growing, population on expanding, industries polluting and societies based on consumption so how is possible to preserve protected areas? Moreover when protected areas that were once in the rural area are becoming part of urban contexts? How should these areas be sustained? In any discussion of sustainability, it is important to clarify what is being sustained, for whose benefit and at whose cost, over what area and measured by what criteria.

Answering these questions is difficult, as it means assessing and trading off values and beliefs. Yet after exposing different views, it is clear that protected areas should be maintained, the problem is that no scientific method alone will ever be able to answer how we should manage resources of protected areas for sustainable development. The scientific view often fails to engage the complexity of social relationships with the environment, leading to extreme black and white solutions.

This raises some important questions. Whose knowledge counts in the management of protected areas? Whose priorities and preferences should count for sustainability of protected areas? Is it those of the scientist or those of people who participate in the making, reproduction of both nature's diversity and their own culturally livelihood?

For understanding the different points of view regarding protected areas it will be presented their main discourses.

Discourses that support protected areas

Conservation Movement: Conservationist vs. Preservationist

According to IUCN, protected areas are: "An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (IUCN, 1994, p. 4). Although all protected areas meet the general purposes contained in this definition, in practice the precise purposes under which protected areas are managed differ.

In general and despite some exceptional examples, protected areas (National Natural Parks or Forests, Wetlands and the East Hills of Bogota) are fragments of territory that should be on their natural state, and according to their legal category do not admit inhabitants but only visitors. Contrary to what it is thought in environmental circles of Colombia, it is an urban vision, which inspires the natural parks and forest reserves to be places of scenic and natural beauty for the inhabitants of the city (Maldonado, 2005, p. 185).

Other lines of thought will address the idea of a rational use of resources and of a sustainable exploitation of them under the benefit of the majority. In other words the history of environmental thought and of protected areas is interwoven between the representation of nature as an *object* (that can be appropriated, transformed, destructed, interchanged by the market and managed) or nature as *subject*, with values and rights per se (Ost, 1996, in Maldonado, 2005, p. 185). But there is a third view that is nature as an ethical and political project for the relation of human groups with it. Under this view the permanence of protected areas is of great relevance even if they are intervened or degraded (Diegues, 2001, in Maldonado, 2005, p. 185). It is also in this view that alternative discourses need to produce new strategies in order to be able to maintain protected areas.

While making reference to protected areas in urban contexts, new proposals arise for the urban inhabitants. The first one is addressed to the citizen's right of enjoyment and responsibility in protecting these spaces. A second proposal is to recover the political and legal role of protected areas in the light that not all territories are destined to urbanization. And third the aim of rescuing proposals for conservation and protection in the context of speculators and land dealers that often function in planning circles in the city (Diegues, 2001, in Maldonado 2005, p. 185).

Despite of rapid urban growth the creation of parks and reservoirs has constituted one of the main conservation strategies for nature in third world countries. Most of the Parks were created under Conservation Movement strategies. The Conservation Movement started in the United States in the 19th century and its main argument was divided into two main groups: Conservationists and Preservationists (Fox, 1981). Conservationists whose main figure was Gifford Pinchot, argued that the American endowment of natural resources was in danger of being squandered in a free for all, such that more rational scientific management coupled with government ownership was required to better put resources to efficient human use. There was no interest in wilderness preservation, environmental aesthetics, or pollution reduction and sought only to achieve maximum sustainable yield from renewable resources such as forests and watersheds (Dryzek, 1997, p. 76). The second group

were Preservationists, whose main figure John Muir, and advocate for the reverence of nature and wildlife, in the aesthetic and spiritual sense of appreciation (Fox, 1981). Preservationist argue that men should not have greater rights than nature, as in Deep Ecology discourses they support the idea that nature and its diversity have intrinsic value irrespective of human uses and interests (Dryzek, 1997, p. 184). On the other hand Conservationists focus in the rational use of resources and how nature can be transform into merchandise. Pinchot's interpretation is that it is necessary to allow the well-being of the majority of the population through exploitation and consumption of environmental resources securing the maximum amount of sustainable productivity (Diegues, 2001, in Maldonado, 2005, p. 189).

According to Dryzek (1997, p. 76) the conservation movement achieved ascendancy in Washington in the administration of President Theodore Roosevelt since Pinchot organized the US Forest Service.

Most national parks in the developing world have been created on the model pioneered at Yellowstone (Pimbert, 1995, p. 5). According to Diegues (2001, in Maldonado, 2005, p. 187), in 1993 close to 5% of the surface of the earth was legally protected through national, provincial, State, municipal and private areas of conservation in 130 countries. During 1960-1980 was created the major number of these areas (573 and 1.317 km^2 respectively), corresponding to the period where most of conservation areas were declared in Colombia. Meanwhile in the United States only 2% of the territory corresponds to natural parks, in Europe less than 7%, in the Third World more than 10% of their land area is set aside for conservation purposes, the expansion of these areas is greater affecting the possibility for agriculture and affecting the sustainability of indigenous communities (and of protected areas) whose livelihoods depend on them (Maldonado, 2005, p. 187).

Although environmental regulations in Colombia are based on Conservationist ideas[3] (Rodas, 1995, p. 109), the designation of some protected areas has been progressive and inclusive. Some mayor-protected areas in rural environments have been inclusive of indigenous and afro-Colombian communities, who according to Law 21 of 1991 (Ley 21 de 1991), and Law 70 of 1993 (Ley 70 de 1993) "own 46% and 62% (that is 25 and 28 million hectares) of protected forests". However since protected areas have different categories, not all protected lands in Colombia are managed under this approach. In Bogota, protected areas do not allow any inhabitant inside their legal limits. In reference to traditional Conservationists philosophy (from the Imperial Institute of Forestry at Oxford) "the public good is best served through the protection of forests and water resources, even if this meant the displacement of local communities" (McCracken, 1987, in Pimbert, 1995, p. 3).

Under traditional environmental discourses management of protection areas is not always inclusive of communities that live in them or in the buffer zone of these areas. Until quite recently, few plans for protected area management made any mention of the people living inside forests, wetlands and other biodiversity-rich areas earmarked for conservation. In South America, 86% of National Parks have people living in them and using the natural resources of the parks to some extent (Amend and Amend, 1992, in Pimbert, 1995, p. 3). Despite these remarkable

3 According to Rodas (1995, p. 109) Colombia was one of the first nations in Latin America to join the 1972 Stockholm guiding principles (with the Natural Resources and Environmental Protection Code), which are based in Pinchot's ideas of Conservationism.

exceptions (including the case of Colombian indigenous and afro-Colombian communities), the basic underlying attitude is isolationist, in which the design and management seeks to protect the park or reserve from surrounding society. Decisions on which land or water areas of the country should be incorporated in the national parks are made by the State, which also independently design and execute park management plans.

However some of the ideas behind protected area management are being changed. Internationally accepted criteria for defining protected areas (IUCN, 1994) recognize a wide range of categories that go from strictly protected nature reserves to manage resource-protected areas. The inclusion of a category in the list, which allows the sustainable use of resources in protected areas, is mainly important in this context. Under new principles it is implied that protected areas should be managed in ways that sustain both local livelihoods and the conservation of nature. Although in an urban context the conditions between protected areas and development might differ in socio-economic and environmental aspects, lessons from rural projects can be learned. In urban contexts livelihoods adjacent to protected areas do not depend on them, they are usually considered the source of pollution but if they are involved in management strategies some benefits in sustainability of the areas can be obtained. This is not to suggest that there is no place for controlled science, this will continue to have an important role to play, but it will no longer be seen as the only focus. This view contrasts with the traditional conservation thinking. It is important to incorporate the human dimension into protection area management, because citizens are the ones that will decide the scope of conservation. As it will be explained in the following sections, in the long term conservation measures that have not been accepted and defended by the majority of the people tend to fail.

Participation and community involvement in management of protected areas

Another perspective for the conservation of protected areas involves participation of community in strategies for management and sustainability. This reasoning represents an inclusive approach for conservation policy. According to McNeely protected areas will prosper only if the community, the private sector and the full range of government agencies support them.

> This support is likely to happen when all parts of society are aware of the importance of protected areas to their own interests, when protected areas are well managed and contribute to the welfare of the nation in a cost effective way and when the people is aware of the contributions that protected areas make to their lives and society (1995, p. 9).

People usually are positive and active to support values they perceive valuable to them. In some cases these values may be easy to quantify like employment, natural resources or other tangible income but less easy to put in monetary terms like recreation and better quality of environment (Munro, 1995, p. 14).

But introducing community participation into protected area management is not easy as the power relations that rule society and determine environmental policies (Conservationist or Preservationists among other interests) will define the degree of involvement that can be given. Some constraints in including participation of protected area management are related to government procedures, and professional approaches to traditional management schemes. In some cases the term participation can be used just as a slogan by Agencies to "change their image" of excluding people from protected areas. It can be reduced just as another bureaucratic requirement or become

a tool for manipulation. "To understand the many dimensions of participation, one needs to enquire seriously into all its roots and ramifications, these going deep into the heart of human relationships and the socio-cultural realities conditioning them" (Rahnemma, 1992, p. 126).

Types of participation

According to Pimbert (1995, p. 29) conservation has been characterized by very different interpretations of participation. During the colonial period, management was characterized by coercion and control, with people seen as an impediment to conservation. Until 1970s, participation was increasingly seen as a "tool" to achieve the voluntary submission of people to protected area schemes. Participation was no more than a public relations exercise, in which local people were passive actors. During the 1980s, participation became increasingly defined as taking an interest in natural resource protection. Since the 1990s, participation is being seen by some as a means to involve people in protected area management. Still the term participation has generated conceptual misunderstandings that have been used to justify the extension of control of the State. In some cases is used to build local capacity and independence, or to justify external decisions and pass power and decision-making away from external agencies; it has been used for data collection and for interactive analysis, but more often, people are asked or dragged into participating in operations of no interest to them, in the very name of participation (Rahnemma, 1992, p. 116).

Some opponents to participation processes argue that empowering the community equals a loss of agency control, that the community lacks the ability to understand complex issues and that public participation is time consuming expecting to obtain instant results (Department of the Environment and Heritage, Australian Government, 2002, p. 18). Then why is important to include participation in the management and sustainability of protection areas? It is necessary to include participation because central governments alone cannot carry the full responsibility for conserving nature; a range of different institutional arrangements and the inclusion of different stakeholders can contribute to conservation goals. In Third developing countries central governments do not have the funds or the people to manage, monitor and maintain protected areas.

Local communities have knowledge about the area that government officials could not have by visiting or planning from an office. A complex and diverse array of institutional arrangements is required to manage protected areas for meeting societies needs. This will include national, regional, local government agencies, universities, private landowners, NGO's private cooperatives and local community (McNeely, 1995, p. 7). Popular and political support for a system of protected areas is strengthened when it generates a flow of public benefits to people. The more people benefit directly from protected areas the greater the incentive for them to protect the resource and the lower the cost for government for doing so. The benefit and cost of conserving protected areas must ultimately be positive for the local people if the area is to prosper in the long term, and this will require that the local people be appropriately involved in the planning and management of the protected areas so that they can share the benefits. How will this occur vary from place to place, strategies may differ from the rural to the urban context (McNeely, 1995, p. 5).

Depending on the category and characteristics of protection areas consultation projects should be carefully tailored to meet the needs of the program, stakeholders and the issues addressed. Public participation can be viewed as a continuous

extension from full government control to full community control (Table 1). The lowest level of participation is "compliance or passive participation" that essentially is the imposition of a decision on the community. People has no choices or involvement in the decision making process, the decisions have already been made and the community is made to comply. "Self-mobilization" is when community takes initiatives independent of external institutions to change systems. Most public participation programs rest somewhere between these two extremes (Department of the Environment and Heritage, Australian Government, 2002, p. 14).

There has been growing recognition that, without local involvement, there is little chance of protecting wildlife and protected areas. Moreover, the costs of park management are very high if local communities are not involved in caring for the environment. Nonetheless, it is rare for professionals to give up control over key decisions on protected area management and sustainability. Participation is still seen as a means to achieve externally desirable goals. This means that even recognizing the need for peoples' participation, many conservation professionals place clear limits on the form and degree of participation that they stand in protected area management. Unlike many other forms of natural resource management, it is argued that full participation of local communities in the design and management of protected areas is difficult for two reasons. First, because protected areas are externally managed protective regimes for example by the State alone or by the State in partnership with international NGOs with conservation expertise and financial resources. Second, because existing management criteria emphasize that national parks and other strictly protected areas

Table 1.
Typology of participation

Typology	Components of each type
1. Passive Participation	People participate by being told what is going to happen or has already happened. It is unilateral announcement by an administration or project management without any listening to people's responses. The information being shared belongs only to external professionals.
2. Participation in Information Giving	People participate by answering questions posed by researchers and project managers using questionnaire surveys or similar approaches. People do not have the opportunity to influence proceedings, as the findings of the research or project design are neither shared nor checked for accuracy.
3. Participation by Consultation	People participate by being consulted, and external agents listen to views. These external agents define both problems and solutions, and may modify these in the light of people's responses. Such a consultative process does not concede any share in decision-making and professionals are under no obligation to take on board people's views.
4. Participation for Material Incentives	People participate by providing resources, for example labour, in return for food, cash or other material incentives. Much in-situ research and bio prospecting falls in this category, as rural people provide the land but are not involved in the experimentation or the process of learning. It is very common to see this called participation, yet people have no stake in prolonging activities when the incentives end.
5. Functional Participation	People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organization. Such involvement does not tend to be at early stages of project cycles or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may become self- dependent.
6. Interactive Participation	People participate in joint analysis, which leads to action plans and the formation of new local groups or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. These groups take control over local decisions, and so people have a stake in maintaining structures or practices.
7.Self-Mobilization	People participate by taking initiatives independent of external institutions to change systems. Such self-initiated mobilization and collective action may or may not challenge existing inequitable distributions of wealth and power.

Source: Pimbert (1992), modified from Pretty (1994)

should be maintained in a natural state. "Minor disturbances caused by visitors are tolerated but not the impacts caused by the livelihood activities of local communities living in and around protected areas" (Pimbert, 1995, p. 30).

> Community involvement in conservation areas challenge the agencies of environmental protection-official, NGO, and informal to bridge the gaps in understanding, driving empowerment and hearing concerns of local communities. It is necessary to replace the top-down, rigid and short-term approach with local-level diversified, flexible, unregulated and long-term natural resource management practices (Pimbert, 1995, p. 34).

Partnerships for conservation

Alternatives for the management of protection areas are co-management partnerships. Co-management means the management of resources by the sharing of products, responsibilities, control and decision making between the local users and the government agencies. They are based on principles like the provision of benefits to local people, meet local needs, holistic plans, linkage of the system, define objectives for management, foster scientific research, form supporting networks and build public support (McNeely, 1995, pp. 6-7). Co-management recognizes the capacity of local resource users to be active partners (usually with government) in a power sharing arrangement. In this way, both the government's policy objectives and local people use requirements have better chances of being met (Pye-Smith, Feyerabend & Sandbrook, 1994). Under this scheme several project have been developed on Africa most notably the Communal Area Management Program for Indigenous Resources (Campfire) in Zimbawe and the Lupande Development Project in Zambia. These experiences have shown tangible results and build up on local people's knowledge and skills. Regional Wildlife Management Training Institution now includes community conservation and National Wildlife Authorities are making commitment to revenue sharing. At the same time the program has raised greater government awareness for environmental conservation (Snelson, 1995, p. 290). Although this is an example of rural protected areas management scheme, management strategies have similar conceptual characteristics from the ones required in urban protected areas.

As shown in the previous example governments have much to gain by decentralizing control and responsibility for protected area management. Such protection is likely to be more cost effective and sustainable when national regulatory frameworks are left flexible enough to accommodate local particularities. However, local control and secure access to protected area resources will not allow local communities to fully benefit from, and care for biodiversity rich sites. Governments will also need to pay attention to other requirements for effective and sustainable protected area management at the local level. But it is still a question how far governments can be encouraged to create this context for protected area management. This is clearly a problem where governance is not democratic and where reliance on strongly enforced conservation is the norm.

Summing up

The three discourses presented share a vision that conservation areas should be protected but each of them in a different way. For the conservationist these areas should be productive, for the preservationist these areas should be destined for natural processes and contemplation and for the co-management perspective, local community should be involved, empowered and benefit through the practice and conservation of protected areas. Although the last discourse is conquering protection areas programs, mayor constraints are faced because of government

strict regulation frameworks, officials and professionals traditional views of participation.

Although co-management schemes try to involve community in management, communities adjacent to protected areas (and especially in urban context) are not homogenous and require time to build up consensus among them. Communities have issues of importance and key actors with different agendas that will affect local participation in conservation. Agencies need to recognize that communities can be functionally defined in several ways, such as representative structure, common interest, and land use, those who pay the highest cost in terms of protected area existence or face the greatest threats. The process of building links with communities can take a long time but provide sensitive inputs (Snleson, 1995, pp. 287-288).

Processes of partnership creation and empowerment may be a way of ensuring that people are taken into account in the management of protection areas, but they may also have the effect of reinforcing existing relations of domination and control, of legitimating particular conservation paradigms. Generally political or economic interests drive decision-making processes. Yet co-management schemes present an interesting alternative that can influence government's perception towards protected area management while enhancing community inclusion. This have show to bring positive outcomes for communities and for the environment, the question is how much will the government include this schemes into environmental policies.

Wetlands of Bogota

According to their location wetlands can be categorised into different types. These considerations define urban wetlands as a separate domain from non-urban wetlands. Although urban wetlands are protected areas and have the same physical conditions and benefits as non-urban wetlands, in the urban context they are exposed to a variety of harmful impacts, which deteriorate them and are making them disappear. Since wetlands are categorised according to their location, the structure and function of coastal marshes within port cities may be very different from those of wetlands located in interior land in intensively developed cities. In the case of Bogota wetlands are from high-Andean Mountain, and context where they are located in the city will determine their physical conditions because of the amount of impacts they receive.

Although the natural condition of wetlands is to sediment, this is an ecological process that takes thousands of years. The question is at what pace this phenomenon will happen (Rangel, 2003, p. 58). In the case of Bogota, in the year 1940 the area of wetlands was 50.000 hectares, but today only 773 hectares are left (Renjifo, 1992). This process of drying-out has been influenced by the expansion of the city, especially in the 1970s because of the migration phenomenon. In the case of Bogota, wetlands are part of the natural run-off water drainage of the city, this means that if they are filled up with solid waste or if they are occupied, some areas may suffer from flooding.

Institutional Framework

In the city of Bogota wetlands are managed by the Local Government by two main Agencies: District Environmental Department (before DAMA) which is the Local Environmental Authority in charge of regulations and compliance of environmental laws, and the Water and Sewerage Company (Acueducto de Bogotá) which is in charge of the implementation of water projects (conservation, distribution and recollection of water). At the national level the Ministry of Environment and Sustainable Development

formulate environmental laws and regulations for the country and the CAR is the Agency in charge of executing national environmental policies at the regional level. However Bogota follow regulations from the Local Environmental Authority. These agencies interact when the boundaries of wetlands are between Bogota and neighbour Municipalities. The Planning Department of Bogota established the guidelines for development of the city, including environmental subjects, however the concepts related to environmental issues are supported by the District Environmental Department. The Water and Sewerage Company follows regulations from the District Environmental Department since its function is the implementation of projects. In the process of Policy making at the local level, the District Environmental Department elaborates environmental regulations that are signed by the Mayor and approved by the City Council, which is the Supreme Authority of the city.

Natural Environment in the Urban Context

The Spatial Development Plan (POT) of Bogota, which establishes guidelines for the development of the city for the first decade of the XXI century, establishes that the 13 wetlands that remain in the city are part of the protected areas of the Capital District. Under the name of Principal Ecological Structure four components of environmental services are linked:

- Protected areas of the Capital District (including the 13 wetlands).
- Urban parks (metropolitan, urban and neighbourhood scale).
- Ecological corridors.
- Area of Special management of the Bogota River.

Urban protected areas are defined by the context where they are located and the social actions that have impact on them. Unlike in rural protected areas where inhabitants tend to support their livelihood in the urban context, it is usual that they are considered as dumps for solid waste, or industrial and wastewater discharge. Usually they are reduced because of the urban pressure for construction of informal settlements. According to Medellín:

> […] the pressure for the need of low income housing land is the main factor of reduction and contamination of the water system of Bogotá. Most of the settlements beside wetlands were constructed giving their back façade to these natural resources. This reaffirms a collective vision of being "nobody's land" easy to encroach and pollute (2003, p. 189)[4].

The main causes of deterioration of urban wetlands are:

- Expansion of urban land for housing by dumping construction material over wetlands. This will affect the capacity of wetlands to diminish flooding, as well as fragment and reduce them.
- Industrial, commercial and household pollution into waterways. This alters the water quality of wetlands, weakening and destroying ecological processes and biodiversity.
- Encroachment of temporary settlements. Communities that live under illegal conditions lack of services and are exposed to fatal diseases.
- Blockage with rubbish and sediments from hydraulic structures that constitute the drainage of the city. In the case of Bogota the Juan Amarillo river-wetland discharges to the Bogota River 123 tons of sewage waste per day. The Fucha River discharges 590 tons per day (POT, 2000).

4 Quotations originally in Spanish have been translated by the author.

› Insertion of exotic plants that alter natural functions of trophic chains and may dry the ecosystem.

The process of recognizing the environmental benefits of wetlands and the importance of maintaining them as protected areas started with the Act No. 6 of 1990 (Acuerdo 6 de 1990) in which the City Council enacts the protection of natural and environmental elements of the water system. Under this agreement the physical limits of wetlands were established. However, this regulation did not do much in practical terms because wetlands kept on being invaded and polluted. Later with the Act 19 of 1994 (Acuerdo 19 de 1994), the District Council incorporates wetlands to the System of Protected Areas of the city. In 1997 the sustainable use of wetland is regulated in reference to the Ramsar Convention[5]. With the Decree 619 of 2000, (the Spatial Development Plan-POT), a master plan for the recovery and management of wetlands in Bogota was established[6]. In 2002 the Ministry of Environment and Territorial Development established the National Policy of conservation and sustainable use of wetlands, however in the year 2006 it was established the Municipal Wetland Policy; Decree 062 of 2006 (Alcaldía Mayor de Bogotá, 2006). The Decree 062 set up the mechanisms and guidelines for the implementation of projects (Environmental Management Plans) in Bogota's wetlands.

POT (Spatial Development Plan)

The POT of Bogota established the guidelines for development of the city, and in relation to the wetlands reaffirms its physical limits and their category as protected areas, although under different views from the ones adopted before in environmental regulations and agreements. The fact that the POT linked protected areas with urban parks, ecological corridors, and the buffer zone of the Bogota River, created controversy among environmental groups. They argued that protected areas should not be considered in the same category as urban parks. According to the POT the Principal Ecological Structure objective is:

› To sustain and conduct essential ecological processes, guaranteeing ecological connectivity and availability of environmental services in the territory.

› Elevate environmental quality and balance environmental services (offer) through the territory in correspondence with population and demand

› And promote the sustainable appropriation and public enjoyment of the environmental offer among citizens[7] (Alcaldía de Bogotá, 2004).

The policy regarding environment and natural resources is "To protect, preserve, restore and improve the landscape and recreational potential of ecological systems. Expanding the availability and coverage of **public space** in compliance with its social and ecological function in order to accomplish sustainable appropriation" (Alcaldía Mayor de Bogotá, 2004)[8].

This last article created disagreements around the concept of public space and the treatment that will be given to protected areas in comparison

5 The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 152 Contracting Parties to the Convention, with 1611 wetland sites, totaling 145,2 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. The mission of Ramsar is "the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world" (Ramsar, 2010, p. 2).

6 The revised version of the POT (Alcaldía Mayor de Bogotá, 2004), maintains wetlands as protected areas and identifies the wetlands among different types of ecological parks.

7 Article 104. Author's translation and emphasis.

8 Author's translation and emphasis.

to urban parks. According to Viviescas (2003, p. 81) environmental fragility is interpreted by the POT as temporal and spatial disarrangement between demands and functions of the city. This simplifies the environmental problematic of protected areas and tries to resolve it by integrating them into the Principal Ecological Structure because of the public space shortages in the city.

This was one of the main causes that made the process of wetland recovery implementation so difficult for the administration. The fact that the policy was not holistically analyzed and participative, and that it did not take into account perspectives and discourses presented in the previous section resulted in conflict between the State, the NGOs and the local community. By the year 2005, 11 Popular Acts[9] (out of 13 wetlands) were filed against the administration (Water and Sewerage Company) arguing diverse and contradictory demands. In some cases the requirement was to refuse the implementation of a proposed project of wetland recovery[10], and in some others the demand was asking for the prompt implementation of a project[11] (Acueducto de Bogotá, 2005, pp. 89-90). The diverse views and legal acts confirm the different and opposing positions among stakeholders regarding the management of protected areas. Secondly, the lack of spaces for local community to participate in the design, implementation and management of projects leave the enforcement of legal instruments against the State as the only option for making their voices heard.

According to Van Der Hammen:

> Regarding the recovery of wetlands in the city, it is necessary to stop the tendency of making them public parks, because the human presence, active recreation, bike paths, squares and lighting network will be harmful for the bird fauna. It is necessary to manage them as natural reservoirs with limited access and activities (2003, p. 47)[12].

On the other hand, the ones who advocate the POT support their position with the idea that conservation patterns for wetlands based on restricted access and lack of intervention (as it is usual in other protected areas), is not viable for Bogota's wetlands for two reasons. The first one is that if planners do not allocate and give an urban function to these elements, informal processes will include them in their dynamics of urbanization. The second is the advanced state of ecological deterioration, which requires an intervention based on urban planning, design and management (DAMA & Camargo, 2003, p. 177). They also defend the idea of wetlands as natural elements that constitute public space; therefore they should be defended equipped and managed, as public domain and their access should be free for all citizens. Under this view participation is considered in terms of environmental education based on the acknowledgment, valuation, appropriation and defence of these ecosystems by local community (DAMA & Camargo, 2003, p. 178).

According to Andrade (2005, p. 156) the proposal prepared by the POT is based on the concept of landscape physical connectivity (also institutional and administrative). It creates a scenery where it is possible to integrate conceptually and functionally nature and culture of the city. In addition to this idea Brand (2006, p. 6) goes further in the explanation of urban and planning policies towards the environment arguing that under the logic of neo-liberal urbanization

9 Popular Acts are legal demands that protect the rights and collective interests of groups. They are related to heritage, and environment (among others), and regulate the actions that cause harm or damage collective rights and interest (Rodas, 1995, p. 91).

10 This consisted in the relocation of encroachments inside the wetland area, dredging of organic material, hydraulic restoration and construction of public space.

11 This was the case of Córdoba Wetland (Popular Act 0254-2000) that refuses the project implementation, and La Vaca Wetland (Popular Act 0014-2004) that ask for the implementation of the recovery project.

12 Quotations originally in Spanish have been translated by the author.

the establishment and management of protection and green areas in the city goes beyond ecological discourses. He discusses the importance of environmental preservation in terms of economic competitiveness and global responsibility; therefore it is necessary to promote a green urban image of the city to attract foreign investments and tourism.

Where national governments see in the environment some friction with economic development, cities gain a lucrative complement. But the environmental behaviour of a city depends in the disposition of citizens to share and participate in the administration's fixed goals, which common citizens do not necessarily share or care about. In this situation Environmental Agendas[13] attain a social character.

Urban politics for sustainability requires the active cooperation of citizens in day-to-day life. This involves the citizens in the inclusion of participative programmes and participation in the construction of "a subjective policy" as he calls it, not under the base of traditional parties and political representation, but from the permanent compliance and obligations to maintain the quality of a legitimate citizen. Urban environmentalism constitutes a new form of governmentality or authoritarian regulation towards given objectives (Osborne & Rose, 1999, in Brand, 2006, p. 7). This governmentality is characterized by active participation of the citizens as political actors of networks and domains of urban life. In that sense the POT only establishes the guidelines and uses allowed in protected areas and the specific attention to community planning and participation is left for the Environmental District Authority to be planned[14]. This is one of the deficiencies of the POT while implementing the concept of Principal Ecologic Structure, the fact that citizen's participation was included in the form of regulations to be followed, more than views to be included.

Yet the idea of linking different types of green open spaces (protected areas, parks, ecological corridors) although not fully understood in all layers of conservationists and community members in Bogota, has been proposed in cities like Curitiba, Chicago, Canberra and Vancouver[15], having successful results. In Curitiba for example in 1966, the Master Plan's designation of "Environmental Protection Areas" created a framework for the creation of large parks along the main rivers as places for recreation, reserves for native vegetation, protection of water resources and watercourses, and flood control. When the population reached one million in the 1970s, causing serious damage to the environment and reducing urban green space to $1m^2$/person, it became a priority to increase green space provision. This was used as a planning tool to control Curitiba's fast expansion, encouraging population build-up along the main transportation axes (new road structure plan) thereby alleviating the pressure on the low-lying areas, which were prone to regular flooding. These areas were successfully reclaimed as green open space, which increased to $51{,}5m^2$/person (data does not include metropolitan area of Curitiba). Successful in "selling" their policies to the city's inhabitants, the administration is now looking to move from marketing to improving participation and is currently developing a methodology for a Community participatory framework, the Collaborative

13 Environmental agendas are part of the UN process in the goal of bringing together key social actors for joint cooperative efforts on vital issues of environment and development plans. The section III of the Rio Summit action plan-Local Agenda 21-is developed for strengthening the role of major groups in the achievement of sustainable development. Environmental Agendas are addressed for the participation and cooperation between people and local authorities and environmental policies at the national level. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development (UN, 1993, in Lafferty, 1998, p. 2).

14 The DAMA and the Water and Sewerage Company are in charge of participation processes.

15 According to the V Congress of Protected National Parks (2003) in Durban South Africa, Chicago, Canberra and Vancouver implemented a similar concept to the Principal Ecologic Structure (Andrade, 2005, p. 153).

Model, based on the concept of a partnership between government, private enterprise and civic society (Commission for Architecture and the Built Environment [CABE], 2003, p. 40).

The question is why in the case of Bogota has the implementation of a similar strategy been so conflictive among different stakeholders? Landscape Architects like Diana Wiesner argue that the establishment of the "Principal Ecologic Structure is consolidated in Bogota; protection areas are recognized and valued" (2004); however for citizens it is easier to identify a forest or a park, while wetlands keep their image as dumps, land to dry and construct. The management of urban wetlands is complex because of degradation, pollution, encroachment, flooding, lawsuits, and a collision of different stakeholders and interests. All of these situations show there is a complex terrain between urban pressure, the value of land and the environment. These multidisciplinary disagreements, the lack of compliance by polluting industries, and local community that in some cases see wetlands as dumps have meant that the programme for recovery faces problems in managing the 13 wetlands of the city.

Córdoba Wetland case study

Córdoba Wetland is one of the 13th wetlands of Bogota, its area is 40 hectares and it is located between Boyacá Avenue and calle 127 and Córdoba Avenue, calle 116 and calle 118. In the year 2001 the community lodged a Popular Action in which they argued that the recovery project proposed by the Water and Sewage Company violated the collective rights of enjoyment of a healthy environment and didn't guaranty the preservation of wild life, vegetation and public heritage. Specifically the community argued that the landscape designs, pedestrian paths, cycle paths, and areas of recreation would be of great impact for the wetland. They also argued the 560.000 cubic meters of dredging that Water and Sewage Company needed to do were going to cause terrible damage to the environment. The popular action was sentenced on favour of the community and that project of Wetland recovery was abandoned.

During the past 12 years some recovery projects have been done in the wetland. Among them there is the geomorphological adequacy of Sector 3 (Niza Neighbourhood), the connection to an ecological flow of a stream in Sector 2 and 3 (Lagos de Córdoba and Niza Neighbourhood), the administration of the wetland which is made in association with the Community Action Board of Niza Sur Neighbourhood, and Adessa NGO and the mesh closure of some areas of the wetland.

All this projects have been done with previous approval of the community. Associating Table 1, it can be said that the Popular Action created a Functional form of participation where people:

> […] participate by forming groups to meet predetermined objectives related to the project. Such involvement does not tend to be at early stages of project cycles or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may become self-dependent (Pimbert, 1995, p. 34).

This means that local groups may be organized, and although they might be called for meetings with the District Entities in charge of the wetland, their position is still one of approving or not the projects, more than being involved in the management of the wetland.

Regarding the mesh closure of the wetland, it indicates a Conservationist ideological position, therefore reaffirming that these ecological elements should be protected from society, and people may only have a controlled and reduced

entrance to them. According to the Wetland District Policy:

> The Water and Sewage Company under the DAMA's guidance and regulation, will construct the enclosure and control the stressful agents of the Capital District Wetlands according to the specific management in order to guarantee the operation of the ecosystem an its ecological potential (Alcaldía de Bogotá, 2006, p. 64).

In the case of Córdoba Wetland, the neighbour community of Lagos de Córdoba did not agree with the whole closure of the wetland and therefore and only allow closing some areas, leaving the green buffer zone open to the public.

The decision of closing the wetlands is argued under the idea that society will damage the ecosystems, but this decision should be studied for each case, understanding the context and the community that surrounds them. There are some cases when the mesh is a necessity and some others where it is possible to involve the community in the protection of the wetland as in the Córdoba Wetland. The Constitution of Colombia (Article 63[16] and 79[17]) advocate for community participation in public processes, at the same time the POT (Article 7) informs:

> Pre-eminence of the Public and Collective: Environmental Management of Bogota, gives importance to the elements, alternatives that allow to create, live and appropriate of the physical, social, and economic city as a collective act, procuring the satisfaction of collective needs, promoting the encounter, constructive interchange and extending to all of them the inclusion of decisions, responsibilities and benefits of development (Alcaldía Mayor de Bogotá, 2004).

Although public participation is part of the Government's agenda, and the Community Action Board has been included in the past administration contracts of the wetland, it is clear that the Popular Action lodged in 2001, and declared in favour of the community has allow them to be more active and taken into account in the decision processes. However there is still a long way in order to integrate co-management strategies in the sustainability of projects related to wetlands in the city. Regarding the administration contract of Córdoba Wetland (in which the Community Action Board was involved), it ended in November 2011 and it hasn't been renewed for nine months leaving the wetland with some guards, a mesh but no administration or possibility of public access.

Conclusion

Given the fact that environmental regulations and professional (environmental and ecology) practices are based on conservation and preservation paradigms, it is understandable that the Principal Ecology Structure proposed in the Bogota's Development Plan (POT), created divergences of opinion. However in order to overcome these conflicts it is necessary to analyze the situation in a holistic view, involving different stakeholders and examining each project under their specific conditions and values. This should take into account that urban wetlands are different from coastal or rural wetlands and are exposed to series of devastating impacts from pollution; wastewater and solid waste discharge that can make them disappear if measures are not taken. Thus it is necessary to evaluate the context of each wetland taking into account the social and environmental conditions that surround it, the main impacts it receives and the ecological potentials that it has in order to be recovered.

16 "Article 63. Public goods, parks, ethnic goods communal lands, shelter lands, archaeological heritage and other goods that the law determines, cannot alienate, have a private owner, or confiscate".

17 "Article 79. All people have the right to enjoy a healthy environment. The law guarantees the participation of the community in the decisions that could affect it. It is duty of the State to protect the diversity and integrity of the environment, and preserve the areas of ecological importance and foster education for the achievement of this purpose".

Specific studies of the potentials and constraints of recovering each wetland make it possible to determine which measures should be taken. The inclusion of different views (environmental, social and economic) is necessary to construct a coordinated strategy. However in multi-stakeholders processes it should be noted that even following an agreed public participation procedure it is unlikely that all participants will be fully satisfied with all decisions taken.

There are several stakeholders and groups of interest involved in wetland recovery and management in Bogotá and it is important to differentiate them and their interests. Although the Government is legally responsible for the protection of these lands, several economic groups and property speculators are also interested in using them as land to build on. On the other side Conservationist, Preservationist, and more inclusive NGO's, local community and individuals advocate for wetland preservation under different parameters but all of them agree on the need to preserve them. All of these stakeholders play an important role in defining a collective vision of the natural surroundings given the fact that they are the ones that will support the sustainability of these ecosystems. When governments are weak, or do not have the capacity, the budget, or the interest in allocating funds for the preservation, control, vigilance and monitoring of environmental sites in the urban context these groups are a key element in order to guarantee sustainability and protection.

Political interests and power relations can be driven out from the different stakeholders views. According to which of the conservation paradigms is in power, regulations and management will be oriented. This situation gives inconsistency to processes and long-term views, which consequently produces the construction of fragmented urban spaces (like in the case of Juan Amarillo wetland). Although the experience shows that political power has the lead in decision-making, inclusion of different stakeholders should be given from the first stages of the planning process. From the experience of Córdoba Wetland, organized communities supported by legal instruments and a coordinated plan can accomplish important objectives in the process of recovering wetlands.

Management of natural public space in the city has met with socio-environmental conflicts due to the imposition of planning decisions that not necessarily fit the collective interest but the interest of few power groups. The difficulties while having contradictory interests that are focused on the traditional environmental discourses is that they tend to forget the communities that live beside the wetlands. Wetlands are looked like independent elements of the urban configuration of space, and people are seen as outsiders who should be "educated". Urban wetlands in developing countries have the potential to link environmental agendas, improving sanitation and health conditions of surrounding communities and also offering environmental benefits. However the extremism of discourses does not allow facilitating this link. The city will continue growing and wetlands will receive urban impacts, so strategies should address this environmental condition in the urban context.

The concept of Principal Ecological Structure in the POT has the potential to positively contribute to the improvement of the city's environment. The fact that this concept joins a variety of types of natural spaces gives an opportunity for diversity of green spaces, including protected areas. The harmonic consolidation of a public space system that integrates the natural and the build up space represents an opportunity and a potential for joining the social and environmental dimension in the city (Andrade, 2005,

p. 179). This will give the citizens the benefits of experiencing different types of open areas with different characteristics such as urban parks, protected areas, or natural reservoirs, all of them interconnected but regulated by specific attributes in their uses.

Although participatory processes are part of the laws of the Nation and of the District, this participation in the case study of Córdoba Wetland is more a socialization of decision taken by the administration. Therefore the community has to act by legal actions like the Popular Action in 2001. This legal action has given the community the possibility of being involved in the decisions taken regarding the wetland.

It is important to recognize the benefit of social investigation as a tool to include local community in the protection of wetlands. Environmental educational workshops limit the participation of a few local communities and restrict the participation of community members in investigation, rehabilitation and management processes. The involvement of local communities with different NGO's that manage these ecosystems can become scenarios of constructive discussion. This link can be crucial in the appropriation and valuation of wetlands not only by local communities but also by all citizens.

Although experiences in co-management of protected areas in an urban context are few and tend to relate to parks and public spaces. Taking advantage of social organizations and bringing them into management strategies coordinated by NGO's and monitored by the Government can be an alternative for creating sustainability of wetlands. Since political power tends to fluctuate, community based organizations can guarantee continuous appropriation of environmental resources. This alternative could offer economic benefits for communities' livelihoods and a better quality of the environment. According to CABE (2003, p. 47) involving the community sector in urban green space management can tap an under-utilized resource.

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