

Reverdir l'habitat urbain

Hábitat Urbano en verde

# Greening the Urban Habitat

In 1940 only London and New York, among the great cities of the world, could muster populations of 5 million inhabitants. By 1990, a mere fifty years later, 30 cities were home to populations in excess of 5 million of which 22 had over 8 million. Ten of these larger megacities are in Asia, which is projected to add a further nine by 2025. This headlong dash of humankind to urbanisation is one of the defining characteristics of the second half of the 20th century. Belief in the opportunity of a 'better' lifestyle - work, health care or education - is the main reason for why over half the 6.5 billion people of our planet will be living in an urban environment by 2005<sup>1</sup>.

More remarkable even than the numbers of people living in cities is the amount of resources they consume. At present cities occupy just 2% of the world's land surface, yet research suggests they devour some 75% of its resources<sup>2</sup>. It is not surprising therefore that cities have been described as 'parasites, feeding upon a global hinterland which is increasingly unable to sustain them'<sup>3</sup>. This concern has been acknowledged by Agenda 21 which devoted an entire chapter to human settlements. Chapter seven stated that 'consumption patterns of cities are severely stressing the global ecosystem'<sup>4</sup> and offered a blueprint for securing their sustainability. The importance of this was again stressed last June at the Habitat II conference in Istanbul, Turkey, which addressed the future of human settlements.

Achieving this, of course, involves enrolling as many partners as possible in the vision to promote and achieve sustainability. Botanic gardens, with their extensive plant collections and expertise, can be strong allies in this process. The majority of gardens are

situated in urban areas and are increasingly becoming one of the few places where people can experience nature first hand. Dr Joy Palmer, a researcher in environmental education at Durham University, UK, has carried out a study that demonstrates that childhood experience of the outdoors is the single most important factor in developing personal concern for the environment<sup>5</sup>. Subjects involved in the study made extensive and detailed references to early childhood days of exploring the natural world and gaining sensory experiences in the open air. If botanic gardens do not run education programmes, they can at least encourage visitors to explore and embrace the wonders of the plant kingdom.

The fact that plants are fundamental to the issues of sustainability places botanic gardens at the heart of the debate. Food production, water conservation, genetic engineering, pollution, noise screening and sustainable utilization of plant resources, are all issues botanic gardens can tackle with the public. The following examples highlight the work of a few gardens in contributing towards building sustainable urban habitats.

Botanic gardens have unrivalled knowledge and skills in horticulture and huge potential exists for sharing this with the wider community. A number of botanic gardens offer horticultural training programmes, such as the Singapore Botanic Gardens which run practical diploma courses in horticulture for students all over Asia.

Several other gardens are also active in working with their local communities to support horticultural practices. The National Botanical Institute in

Kirstenbosch, South Africa, for example, has collaborated with Trees for Africa, a local NGO, to work with a local community to reverse the erosion of a natural sand dune system through tree planting. Success of the project was put down to an 'interested and active community starting in a small way with a few plants and networking with key greening organisations'<sup>6</sup>.

Two other well known examples are the New York Botanical Garden and the Brooklyn Botanic Garden, USA, situated in New York City, home to some of the country's poorest urban communities. Both gardens run extensive green-up programmes, which involve turning vacant rubbish-strewn plots into green oases by collaborating with the city government and local communities<sup>7</sup>. The programmes provide an opportunity for local people to not only grow fresh vegetables but to work together and build a community of which they can be proud. This has a knock-on effect of empowering people to make decisions about their environments, the importance of which is emphasised in all international documents calling for sustainable cities.

These same gardens also run composting programmes, setting aside areas within their gardens to demonstrate how to recycle organic waste and going out into the community to work with local people to establish community composting areas. With New York City facing landfill capping, this has become an urgent necessity. Nevertheless, the gardens demonstrate what can be done where there's a will.

Green-up programmes also happen in school grounds. A number of gardens, for example the Göteborg Botanic Garden, Sweden, and the Royal



Serving food in the award winning eco-restaurant at the National Botanic Garden, Cuba.

Tasmanian Botanical Garden, Australia, support teachers and students to create landscapes in which they can learn as well as play. If we believe that children's first experiences of nature are important in forming positive attitudes towards the environment, a prerequisite for creating sustainable cities, then it is clear that school grounds must play an important part in forming those attitudes. The potential for botanic gardens to contribute towards this is enormous.

In considering issues of food production and sustainability, an excellent programme can be found in the Caribbean at the National Botanic Garden of Cuba which has set up an eco-restaurant. While much of the world has heralded the Green Revolution as the answer to world hunger, increasing numbers of people are voicing their concerns about habitat destruction and wildlife poisoning. Chemical residues found in rivers, streams and ultimately food, are persuading people that organic food (food produced without using artificial fertilisers and pesticides) is a healthier choice not only for their bodies but also the planet. The National Botanic Garden believes that their award winning restaurant will provide a nutritional model for the future. All food served in the restaurant is produced in the Garden and menus incorporate both cultivated and wild plants, thereby educating people about alternative plant species. Waste is composted and returned to the garden, again providing a model of sustainability.

Gardens are also responding to the likelihood of global warming and increased demand for water. A number of gardens aim to help conserve this vital resource through focusing visitors'

attention on creating attractive gardens which need very little water. The Rancho Santa Ana Botanic Garden, USA, for example, situated in an arid region, has no lawn areas in order to cut down on irrigation. Tourism also exacerbates problems of water. Large hotel complexes which require considerable supplies of water and fresh food are built to satisfy the needs of the affluent few. Gardens in the Caribbean are well aware of the connection between lack of water and tourism and make a point during guided tours of explaining the necessity of conserving water as well as plants.

'Cities are the most complex of human societies'...[they require] not one but many systems for decision-making and implementation' <sup>8</sup>. Botanic gardens may not hold all the answers for creating sustainable cities but they are an essential part of the solution. Through providing support, training, access to information and a forum where ideas and solutions can be discussed, botanic gardens can empower and enlighten citizens to become involved in the process of making decisions about the environment which affects their lives.

## ▲ Resumé

La seconde moitié de ce siècle a connu une urbanisation sans précédent s'expliquant par une recherche d'une vie meilleure par des populations d'origine rurale. Il a ainsi été estimé que la moitié de la population mondiale serait urbaine en l'an 2005. L'Agenda 21 a consacré un chapitre entier à ces problèmes et proposé un schéma directeur pour assurer la durabilité des nouvelles cités. Cet article propose que les jardins botaniques, du fait de leur expertise et

de leurs collections végétales importantes, soient des acteurs indispensables de ce processus. En effet, en incitant les populations à avoir une vision globale du monde végétal, les jardins botaniques peuvent susciter des vocations environnementales. Plusieurs exemples illustrent l'important travail mené par les jardins visant à la construction de villes durables.

## ● Resúmen

La última mitad de este siglo no ha tenido precedentes en cuanto al incremento masivo de la población y a la búsqueda por parte de los habitantes del medio rural de una vida 'mejor'. Se ha estimado que en el año 2005 la mitad de la población mundial vivirá en el medio urbano. La Agenda 21 dedica un capítulo entero a los asentamientos humanos y ofrece un anteproyecto para asegurar su sostenibilidad. Este artículo argumenta que los jardines botánicos con sus extensas colecciones de plantas y sus experiencias, son lugares óptimos que pueden contribuir en este proceso. Justamente animando a la gente a abrazar el mundo vegetal, los jardines botánicos pueden ayudar en el desarrollo de una preocupación personal hacia la naturaleza. Algunos ejemplos muestran el importante trabajo de los jardines en su contribución a la construcción de ciudades sostenibles.

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### References

1. IPPF, ICUN, UNFPA, WWF (1996). How the cities Grow, People & the Planet, Vol 5 No 2.
2. Giradet H and Jopling J (1996) Creating a sustainable London, Sustainable London Trust, London, UK
3. Garnett, T (1996) Growing food in cities: a report to highlight and promote the benefits of urban agriculture in the UK, National Food Alliance, SAFE Alliance
4. Quarrie, J, (1992), Earth Summit '92: The United Nations Conference on Environment and Development, Rio de Janeiro 1992, The Regency Press Corporation, London, UK
5. Palmer, J, Goldstein, W & Curnow, A, (1995), Planning education to care for the earth, IUCN Commission on Education and Communication, IUCN-The World Conservation Union.
6. Low, B, (1994), Grey to Green in Roots 9, Botanic Gardens Conservation International, UK
7. Keller, T, (1995), Green-Up in Roots 9, Botanic Gardens Conservation International, UK
8. Jopling, J, (1997) Cities as Habitats, Sustainable London Trust, unpublished paper