

INTERNATIONAL MEETING

**TREES CONNECTING PEOPLE:  
IN ACTION TOGETHER**



Meeting Proceedings  
**Bogotá, Colombia**  
29 July to 1 August 2008



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29 July to 1 August 2008

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*Comments and feedback are welcome.*

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# Foreword

The urban demographic situation across the world is putting the environmental sustainability of cities and the well-being of their inhabitants at stake. The intensification and expansion of cities without consideration of the land-use capacity and local needs for food, woody building materials and wood energy have contributed to a drastic depletion of tree and forest cover in and around cities. This is common in developing countries and countries with economies in transition, where the negative effects of unplanned urbanization and a weak institutional framework are exacerbated by natural disasters, conflicts and war. Cities suffer from floods, dust encroachment, water shortage, soil erosion and landslides, with significant costs in terms of lost infrastructure and human deaths.

For instance, it has been demonstrated that green cities with good tree cover are more resilient to major weather events caused by climate change. By mitigating the effects of such events in cities, trees reduce the costs of maintaining and restoring road and building infrastructure for government and local authorities and citizens.

The major challenge is to recognize the strategic importance of trees and forests in urban development. Green sustainable cities should be developed in harmony with the surrounding landscape and ecosystem capacity, taking into account the effect of their environmental footprints on nearby rural communities. Society's increased awareness of the environmental, cultural and economic links between the city and the countryside should be translated into adequate national and local policies for harmonious cities.

FAO invited experts and stakeholders from various areas of forestry, poverty alleviation and urban development to share their perceptions, knowledge and concerns in order to build a common vision for their cities. These actors are not used to working together regularly and systematically. The title of the meeting, *Trees Connecting People: In Action Together*, emphasizes two tactical objectives that must be met if urban forestry is to contribute to long-term and sustainable solutions for cities. Between the so-called green/soft infrastructure and grey/hard infrastructure are people with needs, aspirations, rights and knowledge. Beyond science is the art of dialogue.

This meeting sought to pave the way towards durable and informed contributions to the concept of *Forests and Trees for Healthy Cities: Improving Livelihoods and Environment for All*. Urban development should switch from its current approach based on the individual city, to a pattern of networking that links cities to rural areas – so the conservation, restoration, rehabilitation and forestation of forest and agroforestry systems become a daily reality for all.



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# Executive summary

The Food and Agriculture Organization of the United Nations (FAO) considers that urban and peri-urban forestry (UPF) contributes significantly to improving environments and livelihoods for vulnerable populations in and around cities. Trees and forests are an essential part of urban development, contributing to vibrant cities, public health, and functioning ecosystems and watersheds, while mitigating risks of floods and landslides. For example, forests in urban and peri-urban areas provide employment opportunities, property improvement, and fuelwood supplies, contributing to more sustainable and healthier communities. In line with its mandate, the FAO Forestry Department and its Forest Conservation Service promote the optimum integration of trees and forests in and around cities under the theme: Forest and Trees for Healthy Cities: Improving Livelihood and Environment for All.

From 29 July to 1 August 2008, FAO organized a four-day international meeting on UPF, with the theme of Trees Connecting People: In Action Together. The meeting was held in Bogotá, Colombia, in collaboration with Promotion for Sustainable Development (IPES – Promoción del Desarrollo Sostenible) and the Municipality of Bogotá and its José Celestino Mutis Botanical Garden.

The main objective of the meeting was to build partnerships and collaboration, with particular attention to developing countries. It aimed to achieve a better understanding of the overall institutional, policy and networking framework, develop strategic advice to raise the profile of forests and trees on national, regional and global urban agendas, and define strategic opportunities for implementing adaptable and efficient UPF programmes.

The meeting convened more than 50 experts from agencies and institutions around the world, including the French Agricultural Research Centre for International Development (CIRAD), the Danish Centre for Forest, Landscape and Planning of the University of Copenhagen (KVL), the European Urban Forestry Research and Information Centre (EUFORIC), the International Development Research Centre (IDRC), IPES Peru, the Resource Centre on Urban Agriculture and Food Security (RUAF), UN-HABITAT, United Cities and Local Governments (UCLG), and the United States Forest Service (USFS). Participants came from countries including Brazil, Canada, Colombia, Cuba, Denmark, France, Haiti, India, Italy, Malaysia, Mali, the Netherlands, Panama, Peru, Spain, the United Kingdom, the United States and Uruguay. Additional contributors included representatives from FAO and other United Nations agencies, government organizations, local authorities and municipalities, non-governmental organizations (NGOs), universities and research centres, the private sector and bilateral agencies.

The meeting stimulated exchange among international and local stakeholders involved in decision-making processes, best practices, sharing expertise and lessons learned, and opportunities for action. It also assisted FAO and participating institutions in developing priority actions for their programmes of work in urban and peri-urban forestry. The participants explored and defined methods for institutional collaboration and partnership to implement comprehensive and coherent practices that develop and maintain healthy urban environments and local economies. The meeting resulted in strategic advice for raising the profile of forests and trees on national, regional and global urban agendas.



Discussions focused on thematic and regional issues, based on background material prepared for the meeting and papers voluntarily shared by participants. Themes and subjects included the synergies among agriculture, forestry and greening in urban and peri-urban areas; wood energy needs and opportunities; forest and tree inventory and assessment; participatory decision-making; vulnerability and poverty alleviation in urban environments; watershed management and environmental services; carbon sequestration for mitigating and adapting to climate change; European activities in urban forestry; and lessons learned from work in North American inner cities. Special presentations were made on cases from Africa, Asia and the Pacific, Europe, Latin America and North America.

The main results of the meeting were:

- the identification of partnerships, initiatives and project proposals;
- specific recommendations for FAO, participating institutions, networks and governments, as well as general recommendations (thematic, regional and global);
- specific recommendations for Latin America and the Caribbean;
- recommendations for major upcoming international events related to urban issues;
- agreement on the need to develop – through collaboration and partnership – guidelines on municipal decision-making for the promotion of UPF;
- identification of collaborative mechanisms for managing and using the FAO UPF homepage;
- recommended actions in five priority areas: strategic processes and tools for UPF; innovative research in UPF; knowledge transfer and information flows for UPF; people's involvement and empowerment in UPF; and creation of a continuum of UPF design, planning and management (see complete list in Annex 6).

This event in Bogotá can be considered the first international meeting on urban and peri-urban forestry to promote worldwide networking and action, with special emphasis on poverty alleviation and food security in developing countries. It extended networks, shared expertise and knowledge, and devised actions for raising UPF at the policy level and promoting its implementation at all levels, in a collaborative and integrated manner.

# Acknowledgements

Thanks to all participants for their dedication in the preparation and implementation of the International Meeting on Urban and Peri-urban Forestry, Trees Connecting People: In Action Together. Participants showed interest and professionalism, allowing this subject and related issues to be discussed from various viewpoints. Thanks also to presenters and contributors for sharing their material.

The valuable participation of 49 representatives from FAO, other United Nations agencies, government organizations, local authorities and municipalities, NGOs, universities and research centres, the private sector and bilateral agencies from 15 countries was well received. Special recognition goes to the meeting hosts, the municipality of Bogotá and its José Celestino Mutis Botanical Garden, and to the District Secretary for Environment.

Special thanks also to the FAO Representative in Colombia and his colleagues, as well as to a long list of FAO colleagues mainly from Headquarters in Rome and the Regional Office for Latin America and the Caribbean (Santiago, Chile).

Finally, thanks to Promoción del Desarrollo Sostenible (IPES, Peru and Colombia) for its professional, technical and organizational support with the meeting.

On behalf of FAO and its Forestry Department, thank you to all participants for their dedication to making this event a success. Congratulations on the results obtained and all the best in continuing what has been started in Bogotá.

# Acronyms

|                  |                                                                                  |
|------------------|----------------------------------------------------------------------------------|
| <b>ASEM</b>      | Asia European Meeting                                                            |
| <b>CARE</b>      | Cooperative for Assistance and Relief Everywhere                                 |
| <b>CBAU</b>      | Brazilian Congress on Urban Forestry                                             |
| <b>CBD</b>       | Convention on Biological Diversity                                               |
| <b>CECI</b>      | Canadien d'Études et de Coopération Internationale                               |
| <b>CIDA</b>      | Canadian International Development Agency                                        |
| <b>CIRAD</b>     | French Agricultural Research Centre for International Development                |
| <b>CODENSA</b>   | Bogotá Energy Commercialization and Distribution Company                         |
| <b>COFO</b>      | Committee on Forestry                                                            |
| <b>COP</b>       | Conference of the Parties                                                        |
| <b>DCFL</b>      | Danish Centre for Forest, Landscape and Planning                                 |
| <b>EFUF</b>      | European Forum on Urban Forestry                                                 |
| <b>EUFORIC</b>   | European Urban Forestry Research and Information Centre                          |
| <b>FAO</b>       | Food and Agriculture Organization of the United Nations                          |
| <b>FOMC</b>      | Forest Conservation Service                                                      |
| <b>FRIM</b>      | Forest Research Institute of Malaysia                                            |
| <b>FRW</b>       | fragmented raméal wood                                                           |
| <b>GIS</b>       | GIS                                                                              |
| <b>GRET</b>      | Groupe de Recherche et d'Etudes Technologiques                                   |
| <b>IDRC</b>      | International Development Research Center                                        |
| <b>IPES</b>      | Promotion for Sustainable Development (Promoción del Desarrollo Sostenible)      |
| <b>ISA</b>       | International Society of Arboriculture                                           |
| <b>IUFRO</b>     | International Union of Forest Research Organizations                             |
| <b>KVL</b>       | University of Copenhagen                                                         |
| <b>LAC</b>       | Latin America and the Caribbean                                                  |
| <b>LACFC</b>     | Latin America and Caribbean Forestry Commission                                  |
| <b>LCA</b>       | life cycle assessment                                                            |
| <b>MDG</b>       | Millennium Development Goal                                                      |
| <b>NFP</b>       | National Forest Programme                                                        |
| <b>NGO</b>       | non-governmental organization                                                    |
| <b>RUAF</b>      | Resource Centre on Urban Agriculture and Food Security                           |
| <b>SBAU</b>      | Brazilian Society of Urban Forestry (Sociedade Brasileira de Arborização Urbana) |
| <b>SWOT</b>      | strengths, weaknesses, opportunities and threats                                 |
| <b>TOF</b>       | trees outside forests                                                            |
| <b>UCLG</b>      | United Cities and Local Governments                                              |
| <b>UNDP</b>      | United Nations Development Programme                                             |
| <b>UNEP</b>      | United Nations Environment Programme                                             |
| <b>UNFF</b>      | United Nations Forum on Forests                                                  |
| <b>UNICENTRO</b> | Central Western Paraná State University                                          |
| <b>UPF</b>       | urban and peri-urban forestry                                                    |
| <b>USDA</b>      | United States Department of Agriculture                                          |
| <b>USFS</b>      | United States Forest Service                                                     |
| <b>WISDOM</b>    | woodfuel integrated supply/demand overview mapping                               |

# Introduction

In national and international forums concerned with decision-making on urban development in developing countries, the main issues addressed tend to be poverty, human settlements, the environment (pollution, water, sanitation), health, land tenure and good governance. Cities are unlikely to develop in a sustainable and healthy manner without the systematic integration of tree-based systems and forests into land use in and around cities, and an understanding of such systems' relationship with demographic and environmental issues. In developing countries and countries in transition, however, trees and forests are rarely taken into account in urban and peri-urban development programmes. They are not given significant attention at policy and decision-making forums at the international, national, municipal and local levels.

The Forestry Department of the Food and Agriculture Organization of the United Nations (FAO) carries out forestry activities and has partnerships with major players in urban forestry and related topics in developing countries and countries in transition. Together, the partners feel that the expertise and knowledge acquired – mainly in Europe, North America and relatively wealthy cities of the developing world – is not generally shared with developing countries and should be widely adapted to the specific and complex situations of cities in these countries. While many international events convene decision-makers to address the agriculture, infrastructure, water, health and poverty issues facing cities and human settlements, forestry and rural-urban linkages have tended to be ignored.

In collaboration with Promotion for Sustainable Development (IPES – Promoción del Desarrollo Sostenible – Peru and Colombia), FAO organized an International Meeting on Urban and Peri-urban Forestry, *Trees Connecting People: In Action Together*, with support from the municipality of Bogotá and its botanical garden. The objective was to establish partnerships and facilitate collaboration in urban forestry, with specific attention to developing countries, in line with FAO's mandate. The meeting aimed to achieve a better understanding of the overall institutional, policy and networking framework; define strategic ways of implementing adapted and efficient urban and peri-urban forestry (UPF), and provide strategic advice on ways of raising the profile of forests and trees on national, regional and global urban agendas.

The meeting was held in the city of Bogotá, Colombia, from 29 July to 1 August 2008 at the José Celestino Mutis Botanical Garden. It was attended by 49 representatives from FAO, other United Nations agencies, government organizations, local authorities and municipalities, non-governmental organizations (NGOs), universities and research centres, the private sector and bilateral agencies from 15 countries, including Brazil, Canada, Colombia, Cuba, Denmark, Spain, France, India, Italy, Malaysia, Mali, Panama, Peru, the United States and Uruguay (see Annex 1 for a list of participants). This report summarizes the discussions held at the meeting and their main outcomes.

This event can be considered the first international meeting on urban forestry to promote worldwide networking and action, with an emphasis on poverty alleviation and food security in developing countries. It extended the network considerably, allowing the sharing of expertise and knowledge, and discussion of actions for raising UPF at the policy level and promoting its participatory implementation at all levels.

This information is also available on the FAO UPF website:  
<http://km.fao.org/urbanforestry/>.



# The meeting



# The meeting

## MEETING OPENING

The meeting started at 8:00 hrs on 29 July in the main auditorium at the José Celestino Mutis Botanical Garden. The participants were welcomed by the FAO Representative in Colombia, Mr Luis Castello, the Botanical Garden Director, Ms Paola Rodriguez, and the Environment Sub-Secretary for Bogotá, Mr Samir Abisambra.

## ADOPTION OF THE AGENDA

After the welcome address, Ms Michelle Gauthier (FAO) presented the objectives and expected results of the workshop, on behalf of the co-organizers. Each participant then introduced him/herself briefly. The agenda was adopted (Annex 2).

## SESSION I URBAN FORESTRY ON THE INTERNATIONAL AGENDA: ELEMENTS OF THE PUZZLE

This session was dedicated to seven keynote presentations on urban forestry at the municipal, national, international and global levels made by important stakeholders in urban forestry from all round the world who provided an insight into needs, constraints and key thematic issues related to urban and peri-urban forestry (UPF).

**Ms Michelle Gauthier** (FAO, Rome) explained FAO's mandate with regard to making information accessible, sharing policy expertise, providing a meeting place for nations, and bringing knowledge to the field. The FAO mandate is For a World without Hunger.

FAO's basic principles for urbanization and forestry include such important issues as watersheds, landscape, ecosystems and biodiversity; cities of today and tomorrow; rural-urban harmony; multipurpose forests and trees; economic valuation; better lives and livelihoods for all; best practices; and multisectorality. Ms Gauthier remarked that participation and decision-making in agriculture, greening and forestry must be an inclusive social commitment.

FAO's UPF current area of activities include for instance urban forestry in Bangui; regional forestry outlook in West and Central Asia; the "Woodfuels Integrated Supply/Demand Overview Mapping (WISDOM) methodology adapted to cities "WISDOM for cities"; assistance for green belt of Nouakchott; tsunami and forests; landscape restoration voluntary guidelines; and mountain partnership and trees outside forests (TOF). WISDOM for Cities is a planning tool for decision-making and monitoring.

In collaboration with Danish Centre for Forest, Landscape and Planning (DCFLP) and the International Union of Forest Research Organizations (IUFRO), FAO has developed case studies in countries such as Afghanistan (Kabul), Armenia (Yerevan), Jordan (Amman), Kazakhstan (Astana), Turkey (Izmir) and the United Arab Emirates (Abu Dhabi) for a forestry outlook study in Eastern and Central Asia (FOWECA) to 2020, in order to identify the role of forestry and urbanization.

FAO guidelines on urban forestry policy should take into account:

- keys to success (understanding benefits, practical implementation, political support, public engagement, advocacy and technical support);



- building awareness against resistance (land competition, cost of implementation, need for long-term management, preferences for top-of-the-range technology, and alienation from the natural world);
- good practices (combating vandalism, criminality, roots and accidents, waste water use, urban arboriculture, community ownership, and innovation);
- Trees and Forests for Cities alliances (city governments, mayors, the public, universities, the private sector, regional and global mayor forums, research and development).

Ms Gauthier talked about the international agenda, highlighting key events: the FAO International Meeting on Urban Forestry (Bogotá, 29 July to 1 August 2008), the FAO Regional Forestry Commission for Latin America and the Caribbean (LAC) (Quito, 29 September to 3 October 2008), the Third Asia European Meeting (ASEM) Symposium on Urban Forestry (Guangzhou, 12 to 13 November 2008), the Fourth World Urban Forum (UN-HABITAT, Nanjing, 3 to 7 November 2008), the Twelfth European Forum on Urban Forestry (IUFRO, Amsterdam, 27 to 30 May 2009), the Nineteenth FAO Committee on Forestry (COFO, Rome, 16 to 20 March 2009), the Thirteenth World Forestry Congress (FAO, Buenos Aires, 18 to 25 October 2009), the Tenth Conference of the Parties (COP-10) of the Convention on Biological Diversity (CBD) (United Nations Environment Programme – UNEP), Nagoya, 19 to 29 October 2010), the United Nations International Year of Forests (2011), and the United Nations Forum on Forests (UNFF) 10 Benefits of Forests and Trees to Urban Communities (2013).

The FAO National Forest Programme (NFP) Facility's mission is to assist countries in developing and implementing national forest programmes that address local needs and national priorities, and reflect internationally agreed principles through the informed participation of all relevant stakeholders. Its purpose is to create an enabling environment for national forest programmes and to play a catalytic role in easing bottlenecks. It focuses on providing information, knowledge and capacity development. Funding averages about US\$300 000 per country, initially for a three-year period and channelled in part to the Governments and mainly to NGOs. It supports workshops and training, policy analysis and specific studies, and knowledge management systems. Member countries can explore the potential of this programme for urban forestry.

**Ms Paola Rodríguez** explained the Bogotá district's programme for urban woodland management, which began in 1998. The programme deals with the environment, landscape and suitable management of urban woodland. The total project area is 38 305.71 ha, or 23.04 percent of the district's total area.

Local government representatives involved in the project include the District Secretariat of Environment, the Botanical Garden of Bogotá, the Institute of Urban Development, the Bogotá Aqueduct and Sewage Company, the Public Services Special Administrative Unit, the Bogotá Energy Commercialization and Distribution Company (CODENSA), and the District Institute of Recreation and Sport.

Through its municipal programme *Bogotá se Viste de Verde* (Bogota Dresses in Green), which ran from 1998 to 2000, the urban woodland management organization set out to plant 120 000 trees. When the programme ended, the district administration continued its urban tree management policies, including the formulation and application of the *Green Manual – Protocol for Managing the District Urban Woodland in the Environmental Management Plan (2001 to 2009)* as a priority

project in the Public Urban Space Environmental Improvement sub-programme. It also established and implemented the plant cover monitoring network, a priority project in the Environmental Quality Monitoring and Control subprogramme, part of the Eco-Urbanization Programme.

In 2005, to collect data for the detailed classification of Bogotá's urban woodlands, to provide a baseline for the urban tree information system and its management, a questionnaire was sent to households in the Bogotá urban area. The results of this census had important implications for three fundamental aspects of urban woodlands: prevention, management and research.

Since 1998, Bogotá's urban woodland management organization has carried out tree felling for renovation, tree pruning, tree blocking and transfer, tree plantation, geo-referenced forest inventory, and two international seminars (2005 and 2007).

**Mr Antonio J. De Araujo**, Professor and Director of the Forestry Programme of Central Western Paraná State University (UNICENTRO), presented a brief history of forestry activities in Brazil. In 1960 the first forestry school (UFPR) was set up. This started with a FAO/United Nations Development Programme (UNDP)/Brazil project in Curitiba focusing on plantation forestry of fast-growing species. In 1983, Brazil's first course in urban forestry was held at UFPR, focusing on arboriculture and street tree inventories (and generating two M.Sc. theses).

As a first step in networking, the First National Meeting on Urban Forestry (ENAU) was held in 1985 in Porto Alegre, with 40 papers presented. The second ENAU, in 1987, was in Maringá, and the third, in 1990, in Curitiba, which called for the establishment of a formal urban forestry organization.

In 1992 the First Brazilian Congress on Urban Forestry (CBAU) took place in Vitória, where 62 papers were presented, by municipal, utility, professional and consulting arboriculturists and students, and the Brazilian Society of Urban Forestry SBAU – Sociedade Brasileira de Arborização Urbana) was created. SBAU's mission is to promote Brazilian arboriculture through scientific and technological development, professionalism and raising public awareness.

In 1994, at the second CBAU in São Luis, 59 papers were presented and the Brazilian branch of the International Society of Arboriculture (ISA) was established, in the presence of the ISA president-elect. Other events include the seventh ENAU in Belo Horizonte (1997), the fourth CBAU in Porto Alegre (1998), the eleventh CBAU in Vitoria (2007) and the twelfth CBAU in Manaus (2008). In 2006, Brazil's first electronic scientific journal was published: the *Journal of Brazilian Arboriculture*.

The last two decades in Brazil have witnessed capacity building for arboriculturists (improved techniques for inventories, planning and management, and better-quality services), development of terminology (a common language for forestry professionals), exchange of experiences (at the regional, state, national and international levels), building of partnerships (among city, state and national institutions, NGOs, knowledge and research institutions, and the private sector), knowledge building (with about 1 000 papers presented) and help in coping with trends and challenges (globalization, privatization, the role of contractors, biodiversity loss and ecosystem disruption, air pollution, climate change and carbon capture).

Mr Araujo presented recommendations for responding to current and future concerns: institutionalization of urban forest planning and management at the municipal level; elaboration of a urban forestry code (with appropriate regulatory mechanisms) for urban forestry activities; regional meetings to promote dissemination of urban forestry success stories among cities; the establishment of public agencies to

encourage, guide and regulate the production of seedlings for urban plantings; research on native tree species for urban use, and dissemination of such knowledge; use of large and medium-sized native species as street trees; the development of urban forestry master plans for large and medium-sized cities, to be approved by city councils and the executive branch; awareness building in the public and private sectors on invasive tree species; expansion of tree management certification programmes and arboriculture further education programmes; installation and use of protected and isolated power lines by electricity companies, and the gradual replacement of naked lines; promotion of environmental education programmes for all ages to establish co-responsibility for tree care and protection; preparation and distribution of educational materials on the importance of urban forests; and the inclusion of environmental education in all phases of urban tree programmes and projects.

**Mr Thomas B. Randrup** spoke about to the European Forum on Urban Forestry (EFUF), which is meeting place for urban forestry professionals, scientists and policy-makers. Established in 1998, EFUF holds annual meetings on various topics organized by local hosts, in cooperation with IUFRO's urban forestry research group and the European Urban Forestry Research and Information Centre (EUFORIC).

About 50 percent of EFUF's participants are scientists/researchers, and 50 percent practitioners/technicians. Each meeting is attended by between 70 and 100 participants, primarily European, but the number of people from outside Europe increases every year. Participants range from students to senior professionals. EFUF has no financial support from IUFRO, EUFORIC or any other international organization and its costs are fully covered by participants' contributions and local sponsors, with local organizers' time covered by their employers. The forum has at least one excursion per day and low-budget accommodation to enable more people to participate (e.g., students).

EFUF has been very successful in Europe, involving low costs and low workloads, but generating significant impacts with high-level scientific and technical contributions.

**Mr Phillip Rodbell**, from the United States Department of Agriculture (USDA) Forest Service Northeastern Area, recalled the importance of working in inner cities, which are usually the oldest and most densely populated residential sections of a city where low-income and minority groups predominate. He used the city of Philadelphia as an example. Between 1950 and 1990, Philadelphia lost 30 percent of its population, and another 150 000 people left in the 1990s. These 50 years of depopulation and disinvestment have brought new opportunities for open space: more than 30 000 vacant lots, 29 000 vacant residential buildings and vacant property covering a total of 1 300 acres (about 525 ha).

Comprehensive resource management strategies should focus on distressed urban landscapes and urban forest health, and on enhancing the capacity to address emerging issues and respond to local problems. Municipalities can strengthen their programmes by improving communication with and among local partners, building awareness, generating support for urban green initiatives across their regions, and strengthening outreach and environmental equity through new and existing partnerships with distressed communities.

The USDA Forest Service offers such services as tree planting and public safety, vacant land enhancement, park revival, access to greenways and riverways, and forest

health and invasive species control. Vibrant communities require strong partnerships with clear roles and responsibilities. There is nothing more important than maintaining trust and credibility at the local neighbourhood level.

Mr Rodbell mentioned some of the lessons learned on these issues through the years: rather than creating new programmes, build on existing programmes and delivery systems; make programme outcomes consistent with the plans of local authorities; channel available funds carefully to accomplish programme goals in collaboration with states, cities and non-profit groups; only fund projects with clear and measurable objectives that contribute to programme goals; do not overextend by funding too many small projects without staff capacity to support them; fund groups with good track records and credibility; build on and connect with other federal and state agency investments to leverage funding where feasible and appropriate; enter into agreements with local governments and university design centres to support efforts on a local level; think big, start small; keep decision processes simple; maintain the identity each partner, and acknowledge funding agencies' support; and conduct tours for elected officials to build local momentum around investments.

**Ms Sara Hoeflich**, from United Cities and Local Governments (UCLG), talked about the contemporary challenges (democratic, ecological, economic and social) around the world. UCLG was created in 2004. It now has more than 1 000 cities as direct members, with associations and local governments from 136 of the 192 United Nations countries, and eight regional sections: Africa, Latin America, Asia, Europe, Euro-Asia, North America, the Middle East, and the Metropolis.

UCLG's objectives include increasing the role and influence of local governments and their representative organizations in global government; becoming the main source of support for local democratic, efficient and innovative governments that are close to citizens; and guaranteeing democratic and efficient world organization.

Ms Hoeflich mentioned world agenda issues such as the struggle against global warming; the promotion of dense urbanization, better-adapted transportation and construction systems; the promotion of human rights and diversity in peace areas (civilization alliances); and the promotion of more direct access to development funds and other sources for financing urban development.

UCLG has 13 commissions and two working groups headed by local governments, on social inclusion, Mediterranean interregional culture, local finances and development, urban planning, millennium objectives (Millennium Development Goals – MDGs), mobility, the information society, gender equality, institutional strengthening, decentralized cooperation, diplomacy, migration and co-development, decentralization and local autonomy, and periphery cities.

Ongoing activities and programmes include active solidarity in response to tsunami disasters; actions and campaigns for development (the MDGs); the struggle against climate change and for sustainable development; support for peace and dialogue among civilizations; local finance programmes; urban development strategies; management and prevention programmes; and institutional strengthening of local government management.

**Mr Fabio Giraldo**, from UN-HABITAT, explained the importance of achieving the MDGs. There is still a long way to go to reach these goals, especially in the poorer countries. The world is urbanized to an unprecedented extent. Although cities occupy only 2 percent of the planet's territory, they use 75 percent of the natural resources of

surrounding ecosystems. The products and emissions generated have impacts at the local and global levels.

If urbanization is poorly managed, it become a negative process, producing poverty and exclusion. These effects can go beyond the borders of the city, affecting biodiversity on a global scale.

Colombia is also experiencing this urbanizing trend. In 1951, 39 percent of the Colombian population lived in urban areas, and the remaining 61 percent in rural areas. In 2005, the urban population constituted some 75 percent of the total, and the rural population only 25 percent.

In the context of urban predominance, the challenge of accommodating this population and avoiding an increase in urban poverty makes it necessary to frame MDG 7, guaranteeing the sustainability of the environment, and its respective goals:

- Goal 9: To incorporate the principles of sustainable development into national policies and programmes; and to reverse the loss of environmental resources.
- Goal 10: To reduce the percentage of people who lack access to potable water by half.
- Goal 11: To improve quality of life for at least 100 million inhabitants of precarious settlements by 2020.

Despite showing better indicators than the global average, Latin America still has some way to go before achieving several of these goals. Colombia presents better results than the regional averages and Bogotá's indicators are better than Colombia's national averages.

The MDGs must be understood and applied from the “glocal” perspective: although they are world aims, they must be implemented, followed and achieved at a local level. Efforts and policies must be properly articulated, which is only possible on a local level for urbanized societies and societies in the process of urbanization, and must refer particularly to cities, their synergies and interaction.

## **SESSION II AN OVERVIEW OF URBAN FORESTRY BY GEOGRAPHICAL AREA**

These presentations were followed by three regional keynote presentations based on regional studies on UPF in Latin America and the Caribbean, Africa, and Asia and the Pacific. Each presentation included time for discussion and comments.

**Mr Gunther Merzthal**, from IPES, mentioned some UPF contributions to city management and presented an overview of UPF in Latin America and the Caribbean, based on the five case studies contained in the regional study on UPF developed by IPES and FAO.

Interventions for green urban areas are integrated into long-term programmes linked to territorial classification and urban planning, especially in large cities such as Bogotá or Havana. Most of the interventions studied do not promote a multifunctional approach, and the prevailing sectoral approach is linked to specific environmental issues. There is no prior assessment of the environment (economic, social, cultural, etc.) where the intervention is to be implemented, so multifunctional designs do not emerge. These interventions do not include the local population's participation in decision-making; only consultative processes are carried out.

The selection of species is based on collaboration with local academic institutions, especially universities, with relevant research and knowledge. This selection is

coherent with the objectives of the interventions, in terms of the structural and biological characteristics of the species. Native species are valued over introduced ones, and species diversification is emphasized.

There is an absence of design, planning and management tools and mechanisms, such as geographic information systems (GIS), forestry protocols (manuals and local guides) and forest inventories as a planning tool for the management of urban woodlands, etc.

Diverse actors have different roles in and make different contributions to project design, implementation and/or management processes. None of the projects rely on permanent multistakeholder forums that strengthen technical capacities, validate technology to generate new knowledge, or develop long-term plans. Public participation is taken into account when implementing the projects (tree planting campaigns, etc.), but not in their maintenance. There is a lack of knowledge management mechanisms that capitalize on the knowledge produced during the experience.

Most of the projects are implemented with public funding, mainly from the local rather than the national level. There is no diversification of funding sources. There has been important progress in the development of specific local legal frameworks for UPF.

Mr Merzthal outlined some guidelines for promoting UPF in Latin America and the Caribbean: inclusion of UPF in urban planning; design of multifunctional UPF areas; appropriate species selection, planning and management mechanisms and tools; a multistakeholder approach with strengthened citizens' participation; knowledge management for building skills; promotion of investments and financing; and establishment of legal regulatory frameworks.

Ms Isabel Ruso and Mr Rogerio Pena Siqueira collaborated on this presentation, presenting the UPF experiences Mi Green Programme from Havana City and UPF in Belo Horizonte (Brazil), respectively, to reinforce the main concepts of the regional overview.

**Mr Jean Noël Marien** talked about the importance of UPF in wood energy, recalling that the future of African forests is in cities. He commented on wood energy as a major driver for UPF in Africa (wood resources are social, economic, institutional and environmental drivers).

The diverse situations of UPF and wood energy in the region are illustrated by several projects at different levels (Chaposa, WISDOM), but it is very difficult to get an Africa-wide overview. Fourteen cities were analysed: Rabat, Cape Town, Pointe Noire, Antananarivo, Bamako, Ouagadougou, Pokola, Mahajanga, Ifrane, Abéché, Conakry, Bangui, Abuja and Kinshasa. The report detailed six selected case studies: Bamako, Abuja, Pointe Noire, Cape Town, Mahajanga and Antananarivo

For sustainable UPF management, it is important to understand the flows of products originating from UPF, along with the supply chain to urban markets and consumers.

Natural degraded forests are the main source of wood for urban populations in Africa, and this has put pressure and had negative impacts on the environment. It is therefore important to look at adapted and simple management plans. Management of planted forests has a long and diverse history of large-scale reforestation projects. New focuses for UPF should be on industrial plantations, small-scale private plantations and agroforestry.

New challenges and opportunities for UPF could be related to domestic energy to replace woodfuel; food and/or domestic energy; the carbon economy; and payments for environmental services.

Mr Marien presented some recommendations for UPF in Africa: define favourable criteria and indicators for UPF development; push for the transparent application of regulations; increase knowledge on degraded urban and peri-urban natural forests; promote the involvement of the private/civil society sector (at different scales) in wood energy plantations; reinforce local sustainable resource management strategies and improved wood energy efficiency; perform life cycle assessment (LCA) for various urban domestic energy strategies; develop and adapt the concept of payments for environmental services for UPF; increase knowledge and expertise exchanges; share success stories; and propose appropriate guidelines for decision-makers.

**Mr Devendra Pandey**, Director of the Forest Survey of India, talked about urbanization in Asia. He mentioned some challenges resulting from rapid urbanization: struggles against the deterioration of urban environmental quality and life quality, and against the formation of slums (more than half of global slums are in Asia). These are consequences of rapid increases in the urban population and in the number of vehicles in circulation. He commented on the role of urban trees in improving the environment, and on the social functions of green areas in Asia.

The study, based on seven Asian cities, shows that a well-defined institutional mechanism and a strong legal framework for implementation are crucial to the success of urban forestry. Political commitment and people's involvement seem to be other important factors for the sustained progress of urban forestry in the region. Many NGOs have contributed significantly to protecting trees and promoting urban forests.

Mr Pandey presented three methodologies for assessing urban trees in India, the results of the national inventory of urban trees, and a detailed inventory of a province (Punjab).

The objective of the meeting's first two sessions was to introduce the main elements of the needs and constraints assessment and to report on the institutional expertise acquired in key thematic areas by representatives of different service providers. The sessions also helped the meeting to identify needs, prioritize these needs according to theme and geographical area, and identify the main categories of stakeholders to be involved.

The Mayor of Bogotá, Mr Samuel Moreno, gave a closing speech to end the day.

### **SESSION III DEMAND AND OFFER – KNOWLEDGE, PRACTICES, EXPERIENCES AND EXPERTISE**

The objective of this session was to identify and prioritize the needs, main constraints and major beneficiaries, and to match these elements of “demand” to the “offer” of existing expertise, to build concrete and efficient institutional capacity. The key components for promoting UPF that were identified were:

- environmental and economic assets – goods and services valuation;
- managing lands, forests and trees – good practices and constraints;
- participatory approaches, policy, legal, planning, decision-making and accountability;

- support to capacity building: communication and outreach, networking and funding, research and education.

**Mr Antonio J. De Araujo**, Professor and Director of the Forestry Programme at Central Western Paraná State University (UNICENTRO), spoke about the different definitions of urban forest, distinguishing between arboriculture and urban forestry. Arboriculture is primarily concerned with the planting and care of trees, and more peripherally concerned with shrubs, woody vines and ground-cover plants; it manages individual trees. Urban forestry is the management of groups of trees in urban areas – the management of tree populations.

The benefits and uses of urban vegetation can be classified as: architectural and aesthetic values; recreation and wildlife in urban woodlands; climatic uses (human comfort, buildings' energy budgets and urban mesoclimates); engineering uses (reduction of air pollution, sound control, reduction of glare and reflection, erosion control, and recycling of urban wastewater); social uses (physiological, psychological and as a source of additional income); and economic benefits.

All of these give urban vegetation a value that can be described in both economic and legal terms. Economic and legal values are closely related, and economic methodologies are often used to ascertain legal values. Trees may be appraised individually or collectively in woodlands and forests, on the basis on their products, uses, maintenance costs, preservation costs, replacement cost and contributions to property values.

**Mr Francisco Escobedo** spoke about the environmental and economic assets of UPF. After analysing two case studies on Santiago and Mexico City (two of the most polluted cities in Latin America), he commented on methods for valuing UPF goods and services such as: urban forest structure in terms of area covered by trees and shrubs, grass cover and the leaf area deposition model (tonnes PM<sub>10</sub><sup>1</sup>/m<sup>2</sup>); urban forest economic cost (US\$/m<sup>2</sup>); and maximum PM<sub>10</sub> abatement from urban forest budgets (US\$/m<sup>2</sup>/tonne PM<sub>10</sub>) measured through analysis and testing of cost-effectiveness compared with existing cost thresholds, policies and technology.

Communities may be able to trade trees' capacity to reduce air pollution for additional urban forest resources (payment for environmental services) internally and with other municipalities. Decreasing the effects of tropical storms is another urban ecosystem service of trees in the city. For example, in Florida, the United States communities that increased their tree cover, had less tree debris in the 2004/2005 hurricanes.

Other opportunities include identifying additional economic values (services), mitigating the effects of climate (hurricanes and landslides), reducing allergies, bioenergy from wood waste, and carbon sequestration.

**Mr Thomas B. Randrup** remarked that the main objective of managing urban green areas must be to create room for recreation, physical exercise and food and fodder production. There are three levels of strategic green space management: the policy level, the tactical level (administrative decisions), and the operational level (maintenance decisions). Urban land management requires a plan that promotes activities and community support, and puts parks and green spaces, their features and facilities, at the centre of an urban renaissance and community life.

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<sup>1</sup> PM<sub>10</sub> : Particulate Matter of 10 microns in diameter or smaller



A green space strategy sets out a collective vision for new and improved green spaces. It establishes a baseline for the provision and performance of services. Community meetings and planning are needed to improve the quality of neighbourhoods. The strategy channels political support, safeguards the future of green spaces and provides a reference point for allocating investment resources.

A green space policy is a strategic tool that highlights the importance of communication with users/citizens (visibility) and has clear goals for administrative actions – yearly action plans. It is the basis for municipal, local and sector planning. It makes sense financially and can improve citizens' health and general livelihoods, thereby attracting people and businesses to the city.

**Mr Walter Ubal**, from the International Development Research Center (IDRD), explained the steps for elaborating environmental and natural resource policy guidelines: systematization of the subject matter; diagnosis of the state of knowledge; identification of cases that provide a basis for guidelines; presentation and validation of the guidelines; adaptation of the guidelines; and dissemination of the guidelines.

**Mr Paulson Pierre-Philippe** and **Mr Pierre Bélec**, from the urban agriculture project in Port-au-Prince, referred to the areas of cooperation in the Montreal-Port-au-Prince Cooperation Agreement, focusing on Field of Cooperation 3: Urbanization and Urban Renewal.

The objectives of this field are integrating shanty towns into the urban system through urban agriculture, local economic development and revitalization; experimentation of programmes and tools for this type of urban renewal, adapted to the current population; and integration of these tools into the Port-au-Prince administration to extend their use over the city.

The urban agriculture project at Hotel Simbie is the first stage of another major project (PAGRIPAP) to promote government and institutional capacity building in Port-au-Prince, submitted to the Canadian International Development Agency (CIDA) by Port-au-Prince and Montreal. The project will be conducted by Soverdi, joined by Alternatives and supported by Reso, in close collaboration with the municipalities of Port-au-Prince and Montréal, numerous Haitian NGOs, the borough committee, and Canadian NGOs present in Port-au-Prince and Haiti, which include the Centre Canadien d'Études et de Coopération Internationale (CECI), the Cooperative for Assistance and Relief Everywhere (CARE), OXFAM-Quebec, and the Groupe de Recherche et d'Études Technologiques (GRET).

Specific project targets include a renewed effort to introduce practices and technology in response to high food prices and for basic medicine and, within four years, to establish a fully autonomous cooperative of Hotel Simbie residents, producing essential oils. The project aims to develop similar cooperatives in other districts of Port-au-Prince and, conditions permitting, in Cité de Dieu, Cité de l'Éternel and Éternel Plus, as well as other areas.

Three types of production have been planned: energy from wood, vegetables and fruits, and medicinal plants (for processing into essential oils). Hotel Simbie's project features the use of grey waters, roof and balcony production, fragmented raméal wood (FRW) and ground-level production lots.

Port-au-Prince and Montreal will work together to implement sustainable actions for strengthening Port-au-Prince's governance and administrative capacity (the institutional aspect). Cooperation includes issues such as urban agriculture and

forestry, urban planning and management, and the transfer of expertise from Montreal to Port-au-Prince (the practical aspect).

**Mr Fabio Salbitano** talked about the different programmes, levels and approaches of education. In the academic field there are primary school, high school and university programmes (undergraduate, graduate and post-graduate). In the technical field there are continual professional development, specialization and life-long learning opportunities.

Teaching methods can be live courses (in class and in the field) or distance learning. Learning tools include environmental education approaches, visual aid manuals and the media.

Mr Salbitano used the educational Erasmus Mundus programme as an example. This programme aims to enhance the quality of higher education in Europe, strengthen cooperation among European universities, attract academically outstanding students and scholars, and develop 110 high-quality M.Sc. programmes. It operates through formal and informal programmes and bilateral agreements (city to city, school to school, university to university).

As future research needs, he mentioned ten key challenges for sustainable urban development: clean air, clean water, food, energy, waste disposal/recycling, transport, housing, jobs, land use, and health care.

For the Forest Research Institute of Malaysia (FRIM), priorities are the evaluation of potential forest species in urban environments, improvement of arboricultural management practices, the environmental and socio-economic assessment of urban and recreational forests, and increasing the effectiveness of nature education programmes.

FRIM research projects for 2006 to 2010 are in the aesthetic enhancement of urban landscapes (evaluation of forest species for urban environments, flower induction of urban ornamental plants, and growth of forest species in urban areas), and the improvement of arboricultural management practices (mapping and documentation of urban vegetation, amelioration of compacted urban soils to improve urban tree growth, and risk assessment of heritage trees).

Relevant EU programmes include: the Seventh Framework Programme for research, demonstration and networking; PHARE (the EU enlargement), mainly through implementation of capacity building for institutions; ISPA ("hard" environment projects only); INTAS (former Soviet Union countries and newly independent States) for research and networking; COST for research networking; and programmes for education (SOCRATES), media, youth (through national youth agencies) and town twinning.

### **Additional presentations**

**Mr Pierre Bélec** presented Plant Your Own Tree on the Web, a tool for gathering together citizens, city planners and sponsors to enhance Montréal's urban forest.

SOVERDI, a Montréal-based NGO devoted to tree planting, promoted this software tool that helps and encourages citizens to plant trees on their own property; 85 percent of the unappropriated space in Montréal, where more trees could be grown, is on private lots. A Québec City company specializing in three-dimensional animation, Graph Synergie, offered its services, partly free of charge. The result is a user-friendly software tool to be downloaded from the web, offering a range of information on trees suitable for Montréal's growing conditions. Users can start by reading and visualizing material about recommended trees for their available space,

soil type, sunlight and other horticultural considerations. The motto is “The right tree in the right place”.

Having chosen, bought and planted his/her tree, a citizen can return to the website, and insert the coordinates of her/his house, to see the front lawn, backyard or patio, with the exact location of the newly planted tree. Among the tools illustrated on the screen, are “virtual trees”. The citizen can select the virtual tree of the species she/he has planted, and “plant” it on the web, where it is geo-referenced and visible to other users visiting the site. Among other features of the site are tree growth projections over the years, carbon absorption rates, and tips on enhancing biodiversity.

The site provides room for sponsors, is strong enough to create a complete public-private urban forest inventory, and provides a channel of communication between the people in charge of urban forests and private home owners, companies and institutions. Messages can be sent to all registered tree owners in case of an epidemic afflicting trees, and simple advice on tree care is sent periodically. It is also a good tool for the city unit managing the public urban forest. The programme is under construction, and expected to be on-line by early spring 2009 after extensive trials by local tree planting organizations. English, French, Spanish and Portuguese versions will be available.

**Mr Rogério Pena** presented a video of the DRENURBS municipality programme, implemented by Belo Horizonte (Brazil) municipality. The DRENURBS programme promotes the integrated responses to sanitary, environmental and social problems in river basins whose waterways are degraded by pollution and erosion of their banks, but that still conserve their natural beds or are not channelled. The main strategy is to establish linear urban parks to improve the management of river basins. The parks have been designed with the participation of local people and are intended for multifunctional use (recreation, urban agriculture, etc.).

#### **SESSION IV IDENTIFICATION OF ACTIONS AND INITIATIVES**

In Session IV, working groups were formed around the four keynote presentations from Session III. The specific objective was to identify UPF actions and initiatives and make recommendations for implementing these. Each working group elected its own moderator and reporter.

Afterwards, a plenary discussion was held to present results and receive comments.

#### **SESSION V FIELD VISIT ON COMMUNITY DEVELOPMENT AND URBAN FORESTRY IN BOGOTÁ**

The morning of the third day was spent visiting sites in Bogotá to view different mechanisms of community participation in UPF activities.

Participants saw an example of reforestation along 94th Street and El Virrey Park. They then visited the Torremolinos Neighbourhood Park, in the south of the city, and the Simon Bolivar Metropolitan Park, in the zone adjacent to the Virgilio Barco Library. Recovery and reforestation processes were visited along the principal routes, including Circunvalar Avenue, 26th Street, and 6th and 68th Avenues.

#### **SESSION VI WORKING GROUPS**

In the afternoon, the working groups finished the discussions and work they had started the previous day. Needs, constraints and related institutional expertise were identified, and a strengths, weaknesses, opportunities and threats (SWOT) analysis

was performed to prioritize areas for UPF and identify appropriate stakeholders, time tables (short-, medium- or long-term), budgets (small, medium or large), primary threats/demands, and feasibility factors.

#### **SESSION VII THE WAY FORWARD, TREES CONNECTING PEOPLE: TOGETHER IN ACTION**

Writing teams were established in the morning of the fourth day, and organized themselves around the 15 keynote presentations, to produce reports emphasizing points requiring immediate action after the meeting. In the afternoon, the writing teams presented their results and the priority actions to be taken. Priority areas were identified as: strategic processes and tools for UPF, innovative research in UPF, knowledge transfer and information flows for UPF, people's involvement and empowerment in UPF, and the creation of a design, planning and management continuum for UPF. Main objectives were listed for each priority area, along with the respective stakeholders, a time table (short-, medium- or long-term), a budget (small, medium or large), primary threats/demands and feasibility factors.

Recommendations were presented on how to promote urban forestry in Latin America and the Caribbean. In conclusion, the Declaration of Bogotá was presented with the conclusions and recommendations from the meeting (Session VIII).

#### **MEETING CLOSURE**

The co-organizers and the chairpersons closed the meeting on Friday 1 August at 17:00 hrs.



# Main outcomes and Recommendations



## Main outcomes

The meeting stimulated exchange among international and local stakeholders involved in decision-making processes, best practices, new expertise, lessons learned and opportunities for action. One objective was to assist FAO in setting priority actions for its UPF work programme; the meeting also presented recommendations for participating institutions. Participants explored and defined institutional means of collaboration and partnership to implement coherent and good practices for healthy urban development. The meeting gave strategic advice on how to raise the profile of forests and trees on national, regional and world urban agendas. The main theme was UPF's contribution to human settlements and cities that are in harmony with their environments, and improved livelihoods for all. Discussions were focused on thematic and regional issues, based on the background material prepared for the meeting and the papers voluntarily shared by participants.

The outcomes of the meeting were as follows:

- The Declaration of Bogotá, with recommendations for FAO, participating institutions, networks and governments, as well as general recommendations (thematic, regional and global) for integrating UPF into city planning, through the interaction of different stakeholders, including private and public institutions.
- Specific recommendations for promoting UPF at the national and city levels in Latin America and the Caribbean.
- Partnerships, initiatives and project proposals identifying the priority areas, the scale of interventions (global or local), major organizational players (national ministries, local governments, NGOs, municipal associations, academic institutions, the private sector, etc.), time frames, and priority threats or demands for UPF issues.
- Initiatives and project proposals for implementation in the short term, based on the potential human, institutional and financial resources.





# Recommendations

## GENERAL RECOMMENDATIONS

Two major decisions of the meeting deserve to be highlighted:

- Holding a second international meeting on UPF in 2009: It was agreed that with the support of FAO, the meeting could be hosted and co-organized by FRIM in parallel with the next National Malaysian Conference on Urban Forestry (Kuala Lumpur, tentatively December 2009).
- Holding a collaborative partnership meeting at FAO Headquarters (Rome, late 2008 or early 2009) to: 1) define ways and means of supporting the development of international guidelines for municipal policy- and decision-making promoting UPF, based on a participatory and partnership process; and 2) follow up on the outcomes of the FAO UPF Bogotá meeting. The proposed meeting would be hosted by FAO's Forest Conservation Service, with the voluntary participation of interested national and international institutions and experts.

A complete list of general recommendations is provided in Annex 6. The main recommendations addressed to meeting participants and all concerned stakeholders can be summarized as follows :

- Disseminate the results of the meeting at international events:
  - FAO Latin America and Caribbean Forestry Commission (LACFC) (Quito, 29 September to 3 October 2008);
  - IUFRO Parallel Symposium on Urban Forestry for Developing Countries (Chengdu, China, 18 to 22 September 2008);
  - UN-HABITAT Fourth World Urban Forum (Nanjing, China, 3 to 6 November 2008);
  - Asia European Meeting (ASEM), Third Symposium on Urban Forestry (Guangzhou, China, 12 to 13 November 2008);
  - FAO Committee on Forestry (COFO) (Rome, 16 to 20 March 2009);
- Promote UPF at the XIII World Forestry Congress (Buenos Aires, 18 to 25 October 2009) and participate in the organization of side-events.
- Provide inputs for major magazines, including international journals such as the *Urban Agriculture Magazine* (ETC Foundation, the Netherlands), *Urban Forestry and Urban Greening* (Elsevier, Denmark) and *Unasylva* (FAO, Rome).
- Support the development of international guidelines for UPF through a collaborative and participatory process with international and national stakeholders.
- Continue to formulate the project proposals initiated during the meeting, such as: on land management and wood energy in peri-urban areas in Mali (and possibly other West African countries), initiated by CIRAD (France) and AMADER (Mali); and on the development and validation of methodologies for forestry inventory in urban and peri-urban areas, initiated by the Forest Survey of India and the University of Copenhagen (Denmark).
- Support the achievement of optimum benefits from the sustainable management of trees and forests for healthy urban and peri-urban environments and citizens, with attention to poor and vulnerable populations, focusing on the following priority areas and respective actions:
  - strategic processes and tools for UPF;

- innovative research in UPF;
- knowledge transfer and information flows for UPF;
- people's involvement and empowerment in UPF;
- creation of a design, planning and management continuum for UPF.

### **RECOMMENDATIONS FOR LATIN AMERICA AND THE CARIBBEAN**

General recommendations for the Latin America and the Caribbean (LAC) region are summarized as follows (a complete list is given in Annex 7):

- FAO should promote and assist the development of UPF processes by supporting a worldwide network, with regional and national levels as necessary.
- A regional meeting on UPF for LAC should be held to build a network that brings together all categories of stakeholders to share knowledge and expertise and to promote UPF through priority strategic actions at the local, national and regional levels (a full list of priority actions is presented in Annex 7).
- Institutions and experts from the LAC region should participate in the development of international guidelines for municipal policy- and decision-making promoting UPF; the region should therefore consider participating in the proposed two-day meeting to be hosted by FAO at its Headquarters, in late 2008 or early 2009, where participants will agree the ways and means of developing such guidelines.
- The countries of the LAC region should carry out national conferences and other events to analyse and propose improvements for the promotion and implementation of UPF adapted to the social, cultural, environmental and economic context. For example, Colombia, which hosted the FAO UPF Bogotá Meeting, is considering a national event in 2009.
- LAC countries that have entered into partnership with the NFP Facility have an opportunity to obtain small grant funding. It is therefore recommended that the NFP focal points and national multistakeholder committees in those countries be approached to raise awareness of UPF and help make it a priority in national processes. The NFP Facility can provide support with such issues as policy development, planning, participatory processes, knowledge exchange and capacity building.

# The Bogotá Declaration

1 August 2008

*We,*

representatives of national and local governments, research and academic institutions, non-governmental organizations (NGOs), national and international development cooperation organizations, professors, engineers, researchers, forest and tree specialists, from all over the world and assembled in Bogotá for the International Meeting on Trees Connecting People: In Action Together, organized by the Food and Agriculture Organization of the United Nations (FAO) with the support of Promocion del Desarrollo Sostenible (IPES) and the municipality of Bogota,

*wish to send to*

national and local governments, technical and financial support organizations, civil society organizations, academic and research institutions, the private sector and citizens, international agencies and other urban specialists who today shape the future of cities around the world

*a message expressing our concerns, and solutions that we believe will alleviate poverty and improve livelihoods through health green cities.*

*Given that:*

- the United Nations has adopted the Millennium Development Goals, whereby the nations of the world and a large number of cities have committed themselves to eradicate extreme poverty;
- the United Nations has also proposed recognition of the right to food, and advocates its implementation;
- more than 50 percent of the world's population now live in cities;
- over the centuries, cities have become environments that are increasingly separated from nature, despite the vital need of women and men to have regular contact with nature, because they are part of it;
- this separation has also deprived most urban dwellers of benefits from the vital contribution of trees and forests to daily human life, such as through providing clean air, clean water, protection from excessive heat or cold, and the soothing presence of native birds and all other natural forms, shapes and colours;
- separation has also increased the distance between food producers and consumers, increasing the distance food travels throughout the world, and further enlarging the environmental footprint of the human race;
- the soaring prices of heated food, due to the rising cost of energy, are making it ever more difficult for the poor to feed themselves appropriately;
- the separation of urban areas from nature has created more difficulties for poor people who use wood as cooking fuel;
- most cities in the world are now considered by their own inhabitants as plagued by transportation pollution, dust and other industry-produced particles in the air, and absence of sufficient shade and wind barriers, all of which are a menace to public health;

## Trees Connecting People: In Action Together

- a number of cities are developing in an unplanned manner, amid increasingly unstable and insecure landownership, while their populations grow rapidly with the arrival of economic refugees and people displaced by wars, who rarely find answers to their needs in cities;
- climate changes increase management risks, especially for watersheds, and accelerate desertification processes;
- cities create serious problems for the sustainable management of natural resources in and around them, because of the lack of prevention and conservation strategies for decreasing the impact of the urbanization process and improving waste and wastewater management to avoid pollution;

### ***and also considering:***

- the immense differences among the cities of the world and their various stages of development;
- the economic situation of nations and the world, which is threatened by the drastic ruptures caused by climatic change, mostly generated by cities as the main sources of greenhouse gases (GHGs), with poor performance in carbon entrapment;
- that existing mechanisms (local, national, regional and international) for answering the needs of cities often lack harmony or coherence;

### ***and adding to the balance:***

- the higher economic value of developing urban greenery (trees, shrubs, gardens and productive urban and peri-urban agriculture) as part of integrated green urban infrastructure, compared with the value of other responses to urban problems;
- the quality and relevance of knowledge and innovative solutions acquired and studied by institutions, NGOs, municipalities and government agencies throughout the world;

***we submit for consideration the following recommendations, expressing our willingness to cooperate with other developers and regulators of urban life:***

### **Recommendation 1**

Renew and expand the visibility of urban forests and associated greenery by integrating their various and inseparable components into one strong and permanent green urban infrastructure that includes private and public urban ecosystems, forests, parks, shrubs, gardens, urban and peri-urban land and any space – however small – devoted to agriculture. We should all make use of this vision to promote improved, healthy, stable and inclusive living conditions in greener cities.

### **Recommendation 2**

Use all available means to bring together the energy and resources of all stakeholders – non-governmental and academic institutions, governments and private corporations – to implement this new vision.

### **Recommendation 3**

Prioritize the exchange of knowledge, technologies, tools and experience among all stakeholders, by developing information, communication and exchange mechanisms

for different types of stakeholder. As first steps, present the results of the Bogotá workshop to decision-makers and strengthen the UPF FAO website.

**Recommendation 4**

Hold annual meetings to stimulate the development and implementation of this new vision of green urban infrastructure and its integration into the other dimensions of city enhancement, and establish and foster mutual help networks, especially among cities.

**Recommendation 5**

Experiment with and establish new ways of funding green urban infrastructure projects, raising money for investments locally and through international mutual aid.

**Recommendation 6**

Develop capacity building programmes, action-research activities and technology innovation processes to strengthen the design and implementation of urban and peri-urban forestry experiences, projects and programmes.

**Recommendation 7**

Develop management tools for multistakeholder and participatory decision-making and action (planning, public and community participation and involvement, implementation, monitoring, evaluation and accountability) by all stakeholders, and support their implementation.

**Recommendation 8**

Support the participatory formulation and implementation of integrated public policies to promote urban and peri-urban forestry at the national and local levels, and promote their links to other urban policies, to maximize their impact and benefits on livelihoods.

*We firmly believe that the implementation of these recommendations can make a significant contribution to the eradication of extreme poverty, the availability of food and employment in urban areas, the stability of nations and cities, and international peace and social justice.*



# Annexes





# Annex 1. List of participants

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## Annex 2. Agenda

### 28 JULY 2008 (MONDAY)

#### Arrival of participants

17:00 Registration (for participants located in Hotel Belvedere)

18:00 Informal get-together at Hotel Belvedere

### DAY 1 – 29 JULY 2008 (TUESDAY)

#### Welcome and introduction

07:30 Registration

08:00 Opening session

Welcome by the FAO Representative in Colombia (*Mr Luis Castello*)

Welcome by the Director of the José Celestino Mutis Botanical Garden (*Ms Paola Rodriguez*)

Welcome by the Environment Sub-Secretary of Bogotá (*Mr Samir Abisambra*)

08:45 Introductory session

Introductory remarks Trees Connecting People: In Action Together (*co-organizers: FAO and IPES*)

Self-presentations by participants (*each participant*)

Election of the Chairperson and the General Rapporteur by the Plenary (*FAO and IPES*)

Adoption of the agenda (*FAO and Chairperson*)

09:30 *Coffee break*

#### Session I, Urban Forestry on the International Agenda: Elements of the Puzzle

10:00 Keynote 1: FAO and urban issues: promoting the role of trees and forests for food security and improved livelihoods (*Ms Michelle Gauthier, FAO; Mr Ignacio Bustos, FAO*)

10:20 Keynote 2: Trees and parks for the citizen of Bogotá (*Ms Paola Rodriguez, Jose Celestino Mutis Botanical Garden*)

10:40 Keynote 3: Two decades of networking and capacity building in urban forestry in Brazil (*Antonio J. De Araujo, Brazil*)

11:00 Keynote 4: The European Forum on Urban Forestry (*Mr Thomas Barfoed Randrup, University of Copenhagen, Denmark; Mr Fabio Salbitano, University of Florence, Italy*)

11:20 Keynote 5: Urban environment, vulnerability and poverty alleviation: Reporting to the World Urban Forums (*Mr Thomas Barfoed Randrup*)

11:40 Keynote 6: The voice of local governments at the international level (*Ms Sara Hoeflich, United Cities and Local Governments, UCLG*)

11:50 Keynote 7: Challenges for urban development and poverty alleviation: the Millennium Development Goals (MDGs) 2015 (*Mr Fabio Giraldo, UN-HABITAT*)

12:00 Plenary discussion (*Chairperson*)

12:50 Logistics matters (*Organizers*)

13:00 *Lunch*



## **Session II, An overview of urban forestry by geographical area**

- 14:30 Keynote on Latin America: Urban and peri-urban forestry in Latin America and the Caribbean: Overview and guidelines for its promotion (*Gunther Merzthal, Regional Study Coordinator, IPES, Peru; in collaboration with Isabel Russo, National Forestry Service, Cuba; and Rogerio Pena Siqueira, Brazil*)
- 15:00 Keynote on Africa: Peri-urban forests as a major source of domestic energy supply for African cities: New perspectives for sustainable forest management (*J.-N. Marien, Regional Study Coordinator, CIRAD, France; in collaboration with Michael Idowu, Nigeria; Amadou Kassambara, Mali; and Fabio Salbitano, Italy*)
- 15:30 Keynote on Asia and Pacific: Urban trees and forests for healthy living in Asia-Pacific region (*Devendra Pandey, Regional Study Coordinator, Forest Survey of India, India*).
- 16:00 Discussion in plenary.
- 16:45 Preparation of working groups I to VI
- 17:00 Welcome by the Mayor of Bogotá (*Mr Samuel Moreno*)
- 17:35 Closure of the day
- 18:30 Welcoming cocktail (Botanical Garden)
- 20:00 Return to Hotel Belvedere

## **DAY 2 – 30 JULY 2008 (WEDNESDAY)**

### **Session III, Demand and offer: knowledge, practices, experiences, expertise**

- 09:00 Opening of the day – general remarks (*Chairperson*)
- 09:10 Keynote I: Environmental and economic assets – goods and services valuation (*Coordinated by Antonio de Araujo, Brazil; in collaboration with Francisco Escobedo, USA*)
- 09:30 Keynote II: Managing lands, forests and trees – good practices and constraints (*Coordinated by Thomas Barfoed Randrup, Denmark*)
- 09:50 Keynote III: Participatory approaches, policy, legal, planning, decision-making and accountability (*Coordinated by Walter Ubal, IDRC; in collaboration with Thomas Barfoed Randrup*)
- 10:10 Keynote IV: Support to capacity building: Communication and outreach, networking and funding, research and education (*Coordinated by Paulson Pierre-Philippe, Haiti/Canada and Fabio Salbitano, Italy*)
- 10:30 Organization of working groups (*TORs, Members, Chairperson and Rapporteur*)
- 10:45 *Coffee break*
- 11:45 Parallel session A: Working groups on Demand and Offer: Knowledge, Practices, Experiences, Expertise
- a) Working Group I: Environmental and economic assets – goods and services valuation
  - b) Working Group II: Land and natural resource management practices
  - c) Working Group III: Participatory approaches, policy, planning, decision-making and accountability
  - d) Working Group IV: Support to capacity building: communication and outreach, networking and funding, research and education
- 13:00 *Lunch*

**Session IV, Working groups' reports and identification of action and initiatives**

14:00 Continuation of working groups

**Working groups' reports in plenary**

16:00 WG I reporting on environmental and economic assets – good and services valuation (*WG I Rapporteur*)

16:20 WG II reporting on land and natural resources management practices (*WG II Rapporteur*)

16:40 WG III reporting on participatory approaches, policy, planning, decision-making and accountability (*WG III Rapporteur*)

17:00 WG IV reporting on support to capacity building: communication and outreach, networking and funding, research and education (*WG IV Rapporteur*)

17:20 Discussion in plenary

18:00 Closure of day (return to hotels)

**DAY 3 – 31 JULY 2008 (THURSDAY)****Session V, Field visit**

08:00 Departure for field visit on community development and urban forestry in Bogotá

13:00 *Lunch (in Botanical Garden)*

**Session VI, Together in action – writing proposals and concept notes**

14:00 Opening of the day – general remarks (*Chairperson*)

14:10 Organization of the writing teams for writing proposals and recommendations

14:30 Writing teams develop proposals and concept notes

Example on Clusters of Action for writing teams developing proposals and concept notes:

- i) Propose a participatory process for developing guidelines on urban and peri-urban forestry for municipal policy- and decision-making
- ii) Engage in networking (e.g., FAO website Forests and Trees for Healthy Cities – Improving Livelihoods and Environment for All)
- iii) Seek strategic funding, partnerships and collaborative opportunities
- iv) Design specific regional initiatives
- v) Design specific national and sub-national initiatives
- vi) Draft meeting recommendations
- vii) Draft the Declaration of Bogotá

17:00 Closure of day (return to hotels)

**DAY 4 – 1 AUGUST 2008 (FRIDAY)****Session VII, The way forward: Trees Connecting People – Together in Action**

09:00 Opening of the day – general remarks (*Chairperson*)

09:10 Reports of main findings from writing teams in Session VI

10:30 *Coffee break*

11:00 Plenary discussion

12:00 Drafting committees for meeting conclusions and recommendations

13:00 *Lunch*

**Session VIII, Conclusions and recommendations**

- 14:00 Presentation of meeting conclusions and recommendations (*Rapporteur General*)
- 14:30 Presentation of meeting recommendations for Latin America and the Caribbean (*Rapporteur General*)
- 15:30 Plenary discussion and adoption of the meeting recommendations
- 17:00 Closure of meeting

## **ANNEX 3. Power point presentations for keynotes**

- a. Gauthier, Michelle: Promoting trees and forests for healthy cities: improving livelihoods and environment for all
- b. Rodriguez, Paola Liliana: Trees and parks for the citizen of Bogotá
- c. Araujo, Antonio de: Two decades of networking and capacity building in urban forestry in Brazil
- d. Salbitano, Fabio and Randrup, Thomas Barfoed: The European Forum on Urban Forestry
- e. Rodbell, Phillip: Lesson's learned in the inner city
- f. Hoeflich, Sara: The voice of local governments at the international level
- g. Giraldo, Fabio: Fulfilment of the Millennium Development Goals (MDGs) 2015 from the city
- h. Merzthal, Gunther: Urban and peri-urban forestry in Latin America and the Caribbean: Overview and guidelines for its promotion
- i. Ruso, Isabel: Mi Programa Verde. Ciudad de La Habana
- j. Pena Siqueira, Rogério: Fundação de Parques Municipais Prefeitura de Belo Horizonte
- k. Marien, Jean-Noël: Urban and peri-urban forestry in Africa. What perspectives for wood energy?
- l. Pandey, Devendra: Urban trees and forests for healthy living in Asia
- m. Araujo, Antonio de: Environmental and economic assets – goods and services valuation of the urban forest
- n. Escobedo, Francisco: Environmental and economic assets – the value of UPF goods and services
- o. Randrup, Thomas Barfoed: Managing urban land, forests and trees – good practices and constraints
- p. Ubal, Walter: Participatory approaches, policy, legal, planning, decision-making and accountability
- q. Pierre-Philippe, Paulson and Bélec, Pierre: Support to capacity building: communication and Outreach, networking and funding: Urban Agriculture Project in Port-au-Prince
- r. Salbitano, Fabio: Research and education, communication and capacity building, networking and funding



## ANNEX 4. Abstracts

### **URBAN GREENING AND CLIMATE COOLING: KNOWLEDGE TO PRACTICE**

By Noor Azlin Yahya and Elizabeth Philip  
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In Malaysia, although policies and guidelines are formulated at the federal level, the urban and peri-urban areas are governed and managed by local authority councils. In its introduction, this paper provides an overview of forestry practices and problems. Good examples from other tropical countries are mentioned. Being a research institute, FRIM is sometimes consulted for technical advices in urban greening, and examples of projects undertaken are described. Areas of emerging needs are discussed, as these are indications of trends that need improved knowledge. One emerging research need is in climate amelioration through urban greening. Local authorities, including major city councils and private developers involved in extensive housing developments, are among the agencies working with FRIM to address climate problems. Studies on trees' capability in pollution abatement have been proposed. FRIM would like to impart this and other knowledge to guide implementation, and to provide advice on the design of plantings. The paper concludes that there is much room for improvement in the use of scientific information to convince managers and developers about the practicality of urban greening. This paper hopes to stimulate discussion on how to enhance the application of technical knowledge, especially to help improve the world's climate.

### **URBAN AND PERI-URBAN FORESTRY IN AFRICA: WHAT PERSPECTIVES FOR WOOD ENERGY?**

By Jean Noël Marien *et al.*  
CIRAD Département Environnements et Sociétés

In Africa, wood provides more than 80 percent of total domestic energy in urban areas. Most of these resources come from peri-urban forests, which often suffer severe degradation.

The global situation is worrying, but some countries are developing strong national policies for alternative energies, and these benefit peri-urban forestry. Unfortunately, most countries still rely on wood for domestic energy, and this has considerable impacts at all levels of sustainability, particularly for poor and fragile populations. These impacts can be more or less problematic, depending on the quality of governance and resources management.

This study sampled 14 cities as examples of the relationships between peri-urban forests and wood energy supply. It aims to identify appropriate criteria and indicators and to categorize these cities according to global indicators.

Existing technical solutions are based on past and ongoing field experiences and projects, such as planting forests near cities, improving the management of natural degraded forests, and improving energy efficiency. However, these solutions will not have long-term impacts unless national governance is good and existing laws and regulations are respected.

New opportunities for the development of peri-urban forestry also depend on the capacity to obtain benefits through payments for environmental services (e.g., the

carbon market). The capacity to build global solutions is key to the long-term sustainability of peri-urban forests and their benefits for urban populations.

## **LAND AND NATURAL RESOURCES MANAGEMENT PRACTICES**

By Thomas B. Randrup

University of Copenhagen, Centre for Forest, Landscape and Planning

This paper sets out the need for a strategic management approach for urban land and natural resources. Most planning and management of urban green spaces (urban green resources) take place at the local community level. A strategy should be developed to place urban green resources on the political map, and thus to integrate green areas into overall local community agendas. A strategic land-use approach includes three levels of action: 1) political; 2) tactical; and 3) operational. On the political level, a green space strategy could be based on a mission for all green spaces, and specific visions with related objectives stating where, when and how they should be implemented. On the tactical level, green structure plans may be developed to ensure that public as well as private green areas are mapped and structured for future planning and management purposes. At the operational level, maintenance planning approaches may include quality descriptions of each element in the green spaces. The pros and cons of each approach are discussed in relation to the new public management regime.

## **LAND TENURE AND PEOPLE-LED INITIATIVES IN URBAN AND PERI-URBAN FORESTRY AND AGRICULTURE: REFLECTIONS AND EXAMPLES ON ISSUES RELATING TO LEGISLATION IN ZAMBIA**

By Elizabeth Ann Hannah

University of Florence

Good practices for UPF frequently run into difficulties at the implementation and maintenance stages, where a number of conflicting interests encroach on the benefits that any piece of land has the potential to generate, primarily in order to meet more pressing or urgent needs.

As a result, the struggle for land becomes a source of conflict. Security of land tenure is a recurrent issue in studies on urbanization in developing countries, in both traditional urban areas and new urban developments.

From a legislative perspective, actions to cope with the precarious status of access to land and exploitation rights can be foreseen in relation to the following:

- The status of the property: Who owns the land and what laws regulate tenure rights?
- The status of tenure: Is the land encumbered with medium- or long-term concessions/leasehold interests granted to third parties? Do traditional rights conflict with new/commercial needs?
- The geographical context: In some urban, peri-urban and rural areas, urban societies are an important source of income for the production of food, wood, non-wood products and other purposes such as ecotourism.
- Issues of social cohesion and organization: Which ethnic groups are involved? Are organizations, associations or informal groups present, or would it be relatively easy to encourage their formation?

In considering a possible methodological framework of action and support from a legislative point of view, the case of Zambia was analysed through a review of literature

that is available to participants, and interviews with key informants, carried out via a questionnaire distributed by e-mail.

### **LESSONS LEARNED IN NORTH AMERICAN CITIES**

Phillip Rodbell

United States Forest Service

Urban areas in North America and globally share many common traits, including high population densities and low percentage tree cover. Studies show that improving the quality of community trees, forests and parks in these areas can have a significant impact on metropolitan air and water resources, associated public health, and quality of city life overall. Experience has proved that few inner city communities see trees and tree care as urgent priorities compared with crime, education, food and jobs. Time spent in those communities, however, often yields consensus that tree planting and maintenance activities represent quick and winnable projects that can test the fabric of the community and encourage leaders to attempt more quality-of-life projects. This presentation reviews the history of inner city funding through the United States Forest Service, defines the opportunities, and offers guiding principles gathered from experience. A recent publication will be distributed describing the results of a 2004 Forum on Lessons Learned in the Inner City, with contributions from 28 NGOs.





## ANNEX 5. Summaries of regional studies

### URBAN AND PERI-URBAN FORESTRY IN AFRICA: WHAT PERSPECTIVES FOR WOOD ENERGY?

By Jean Noël Marien

At the beginning of the twenty-first century, relations between cities and forests are one of the major challenges of territorial and landscape management in many countries, especially for tropical forests.

This report was requested by FAO in preparation for the International FAO Conference on Trees Connecting People: In Action Together, held in Bogotá from 28 July to 1 August 2008. The report focuses on Africa and is one of three regional reports, the others being on Latin America and Asia.

With its ecological, social and economic diversity, Africa is likely to continue using woodfuel as a major source of domestic energy for the coming decades. In such an environment, it appears logical to focus this African regional report on the complex relationships that link cities and UPF with wood as energy.

#### A worrying situation

In Africa, wood energy provides more than 80 percent of total domestic energy consumption, in all countries. It is also responsible for more than 90 percent of total wood removal from forests. In most African countries, expanding population and accelerated urbanization are not leading to poverty alleviation and changes in energy sources and utilization (except for the switch from woodfuel to charcoal for those who can afford it). For example, Africa is the only continent where woodfuel use for domestic energy is expected to increase in the coming decades.

If not counterbalanced by alternative strategies and management plans, this situation will lead to the degradation of natural woodland ecosystems, forests, agroforests and woody savannahs. Such degradation is clearly visible in the supply areas around big cities and can progress to deforestation, with very negative ecological, economic and social consequences.

Issues related to the growing dynamics, availability and management of wood are often unknown, because peri-urban areas are often not included in forest management issues and do not have management plans, even hastily designed ones. This resource is part of a global landscape in which other players and stakeholders often disturb woodfuel dynamics. Demography and urbanization are drastically modifying the social benchmarks of urban populations, but consumption patterns are not changing as rapidly. Woodfuel, linked to increasing urban poverty, is still the most important way of cooking food (and/or heating) in a large number of African cities. In this context, it is difficult to pursue the MDGs. The predominance of woodfuel in cities is also related to a mainly informal and deeply rooted economic situation. Supply chains, often very fragmented, develop according to needs. They are an important source of employment and a way of redistributing incomes from forests to urban markets. Wood energy supply chains are developing in very heterogeneous institutional environments. Some countries have adopted dynamic energy and tax policies, leading to radical changes in consumer habits and a move from wood to alternative energies, but often fossil fuels. Other countries – often the producers and exporters of fossil energies – show very poor levels of governance. Lack of proper management by public entities allows the private sector

(voluntarily or not) to take the lead and adapt to local conditions, often without anticipating future issues, however easily these are to predict. At the least, uncontrolled logging often exceeds the biological restoration potential of forests, and can have more even serious and wide-ranging impacts, depending on the distance between forests and urban markets. Environmental impacts related to forest degradation occur at all levels, from the micro-local to the global, and include climate change, biodiversity loss, desertification and carbon issues.

### **A complex panorama**

The interactions between cities and forests are complex and directly related to the local context. This report presents 13 examples from throughout Africa. Some cities (Rabat, Cape Town) are progressively moving to non-wood energy sources, thanks to proactive and voluntary national policies. Others (Pointe Noire, Antananarivo) are in a relatively good situation, as significant quantities of wood and charcoal are produced from peri-urban forest plantations (industrial or private). Some cities (Bamako, Ouagadougou), although in dry conditions, have developed domestic energy strategies and woodfuel markets. They have partly formalized the supply chains, but do not address the sustainability of the raw material. In Mahajanga, the transfer of peri-urban forest management to local communities is being proposed, in general with positive results. In cities still in transition (Bangui, Conakry), supply problems can be resolved as resources are still available, but the situation may change very rapidly if nothing is done. Medium-sized cities have specific issues to deal with. Ifrane, for example, benefits from an important local supply of wood, and changing domestic energy practices. Abeche, on the other hand, is near an area of armed conflict where wood is scarce, and the city's energy supply balance is disturbed by the massive flow of war refugees. Pokola shows the important and as yet under-appreciated energy potential of logging residues from forest concessions using various technologies. Very large cities such as Kinshasa or Abuja are in a very difficult position, with rapid urban population increases due to conflict or rural poverty migration. They are suffering rapid degradation of peri-urban forest ecosystems in all their supply areas. Among these examples, six are provided as more detailed case studies in Annex 2 of the paper.

### **Sustainable management of peri-urban forests and wood**

This clearly shows the specificity and complexity of the relations between UPF and wood energy in Africa. The report provides a tentative list of criteria and indicators for peri-urban forest management and wood energy supply issues. Based on these criteria, the case studies can be categorized, and for each category priority issues to be addressed should be identified, to improve the sustainability of peri-urban forestry in Africa.

Sustainable management of degraded natural peri-urban forests should be a major issue for national forest policies. There is insufficient knowledge about the forest and social dynamics of these landscapes, and only a better understanding of these questions will allow natural forest ecosystems to become more sustainable. Peri-urban planted forests for wood energy are already being used as an effective solution across the continent. It is now necessary to use the lessons – good and bad – from past experiences and projects to improve the success rate. This requires better coherence of institutional regulations and the development of private forestry that is reactive and adapted to the specific needs of urban markets.

### **New challenges and opportunities**

The question now is whether or not new challenges and opportunities can modify present trends. While some of these are threatening, others may alleviate degradation. New opportunities are not a substitute for changing governance and establishing coherent management of landscapes and territories, particularly in the socio-economic and institutional areas.

Among other risks, the availability and cost of alternative energies are major issues. Fossil fuels are often used to replace wood energy, but their negative consequences and environmental costs are greater than those of sustainably managed traditional wood energy resources. In some countries, alternative energies are not available. Another risk is the competition between energy and food.

This competition is still more theoretical than real, but could become a major issue if agricultural economies continue to change according to the logic of the stock exchange. At the peri-urban forestry level, competition between food and energy could lead to changed consumption patterns for poor people, and radical land-use changes in peri-urban areas, with associated ecological impacts such as the loss of forests and forest ecosystems.

Among the opportunities for positive impacts, the carbon market may become prominent. Wood energy is responsible for more than 80 percent of forest-originated carbon emissions in Africa, even without taking into account the supply chains and life cycle analysis. International processes (such as the Clean Development Mechanism [CDM] and Reducing Emissions from Deforestation and Forest Degradation [REDD]) take into account the modification of carbon stocks (fluxes), at both the raw material and the supply chain levels. Payments for environmental services could reinforce the financial attractiveness of UPF, by recognizing its global environmental value.

UPF in Africa is at the heart of major development challenges. Responses to these challenges must lead to integrated landscape and territorial management that includes all urban, rural and forestry stakeholders. Such processes would allow good utilization of the resource by all interested parties and would consider urban and peri-urban forests a common shared heritage for the future, and not just an element to be unsustainably operated and extracted from.

## **URBAN AND PERI-URBAN FORESTRY IN LATIN AMERICA AND THE CARIBBEAN: OVERVIEW AND GUIDELINES FOR ITS PROMOTION**

by Gunther Merzthal

Latin America and the Caribbean are the most urbanized regions of the so-called developing world, and expansive and unplanned urban growth constitutes a serious threat to the environment. The urban population of this region rose from 66 percent in 1987 to 77 percent in 2005. This intense growth also moved poverty from the countryside to cities, which are home to 39 percent and 54 percent of the region's poor and extremely poor families, respectively

The progress experienced by cities has ambivalent features: urban development is largely chaotic. The ecological balance, both in cities and outside them, is generally very unstable and often collapses, making the concept of urban ecology almost meaningless. The population lives in an environment of (partly toxic) air and water pollution, noise, extremely stressful traffic, overstimulation of the senses, dense and high buildings, overcrowding, narrow streets, and in places depressing visual panoramas. The suburbs of cities unravel into a mixture of slums, industrial parks and landfills, so they cannot be conceived of as recreation zones.

The form and direction of future city growth, and the ways in which space is distributed, used and organized, are crucial issues for economic growth and poverty reduction. Planners and policy-makers must adopt proactive approaches, based on a broader, longer-term vision, to guarantee rights to the rapidly growing numbers of poor people in cities

Although cities have enormous potential to improve people's quality of life, deficient urban management can have negative effects. There is great concern about this, and efforts are being made to encourage the sustainable development of cities worldwide, especially in developing countries.

The MDGs are a global initiative created in 2000 through the Millennium Declaration of the United Nations, which was signed by countries from all over the world, seeking to reduce world poverty by half by 2015. The Millennium Declaration identifies concerns, values and principles related to development. After studying different factors that can impoverish people and prevent them from overcoming poverty, development experts proposed eight goals intended to satisfy the basic needs of the majority of people. These goals are the MDGs, which are quantifiable through internationally agreed numerical indicators that can be used to evaluate general progress.

This regional study of Latin America and the Caribbean is directed to decision-makers in national and local governments, civil society institutions and organizations, and cooperation agencies in Latin America and the Caribbean that are developing or planning local or national interventions to promote sustainable development. The study seeks to generate knowledge about the role of UPF in strategies for urban planning and sustainable management, and to offer guidelines for promoting and developing related practices.

The study is divided into three chapters. The first describes the benefits that urban forestry provides in terms of resolving or mitigating some of the main problems facing Latin American and Caribbean cities. These benefits include improvements in air quality and positive effects on the microclimate, poverty relief and job creation, physical and mental health, natural resources conservation, and comprehensive solid and liquid waste management.

The second chapter presents a summary of five experiences in cities of the region: Moreno, Argentina; Tacna, Peru; Monterrey, Mexico; Havana, Cuba; and Bogotá, Colombia. These case studies provide territorial, geographical, demographic and economic information about each of the experiences, along with local characteristics, the time period during which the experience took place, the stakeholders involved, a description of the experience, the legal and regulatory framework, financing, community participation and the results obtained. The chapter finishes with an analysis of the experiences, identifying the most significant strengths and weaknesses of urban forestry in the region.

The third chapter presents guidelines for formulating urban forestry policies and programmes in Latin American and Caribbean cities, designed to take advantage of the strengths and overcome the weaknesses identified in Chapter 2. Seven recommendations are made: 1) incorporation of UPF into urban planning; 2) promotion of a multistakeholder approach and strengthened citizen participation; 3) design of multifunctional UPF areas; 4) selection of suitable forest species; 5) promotion of investment and financing; 6) creation of appropriate legal-regulatory frameworks; and 7) last, but certainly not least, knowledge management and capacity building.

## URBAN TREES AND FORESTS FOR HEALTHY LIVING IN ASIA

By Devendra Pandey

The urban population in the Asian region is increasing at a rapid rate. Urbanization increased from 32 percent in 1990 to about 40 percent in 2005. Of the world's 25 most densely populated cities, 17 are located in this region, as are 12 of the world's 25 most populated cities. Rapid growth in population is often not matched by increased services and facilities, leading to deterioration of urban environments. Air, noise and water pollution, inadequate sanitation, problems with waste disposal, choking of drains and formation of slums are common. According to the *State of the World's Cities Report 2006/2007*, Asia is home to more than half of global slum dwellers (581 million people). In such a situation, the multifunctional roles of trees, forests and green zones in urban areas become extremely important as they reduce air and noise pollution, improve the aesthetics of the surroundings, provide shade and shelter, especially to poor people, improve the urban environment for healthy living, and alleviate poverty. Studies in India and China reveal that trees planted in urban areas have reduced pollutants and abated noise pollution. In Beijing, 2.4 million trees planted in the city centre removed 1 261.4 tonnes of pollutants from the air in 2002. In Hyderabad, green belts reduced noise levels, by 7.4 db from 82.9 db during the day, and by 8.5 db from 69.1 db during the night. The carbon locked in the woody biomass (above ground) of India's urban trees was estimated to be 21.2 million tonnes in 2007.

There is a lack of information and documentation on the situation of urban trees and forest resources and their management in the region, except for in a few big cities, where awareness has grown mainly on account of environmental problems. Case studies of seven cities from the region (Chandigarh, Delhi, Hyderabad, Shimla, Dhaka, Kathmandu and Jakarta), where information could be collected quickly, give a brief account of past developments, growth in population and vehicles etc., status of trees, forests and other green areas, agencies responsible for the promotion and management of green areas, and constraints. Rapid increases in the population, especially in capital cities, are due to migration. The increase in vehicles over the last decade and a half is phenomenal in these cities. The area of urban forests in Delhi has improved in the last decade because of coordination by the Forest Department and strict enforcement of laws. However, there are declines in the green areas of cities that had good urban forest resources in the past. In Jakarta, green areas have declined from 35 percent in 1965 to 9.3 percent today, and in Kathmandu urban forests have degraded. Institutional mechanisms for managing urban forests vary among and within countries. In some cities, urban forest management is an internal affair of municipal authorities, and others have departments dedicated to this work. In India, management of urban forests is generally divided among several authorities. A well-defined institutional mechanism and strong legal framework for implementing urban forestry are crucial for success. In addition, political commitment and people's involvement are important for the sustained progress of urban forestry in the region. NGOs have contributed significantly to protecting trees and promoting urban forests.

Inventories and valuations of urban trees help build understanding of their role objectively, but few such studies have been done. In India, an inventory of urban trees at the national level has been included in the regular programme of the Forest Survey of India (FSI) since 2002, and forms part of the National Forest Inventory. FSI has presented methodologies for estimating the trees outside forests (TOF) using a combination of remote sensing and field inventory of both rural and urban areas, at the national level. Urban tree resources are estimated through field-based inventories only,

because the boundaries of urban areas are often not marked on Survey of India maps. Towns and cities are classified into five classes according to their populations. Urban areas are divided into Urban Frame Survey (UFS) blocks, which have well-defined natural boundaries and each include a population of 600 to 800 people, or 120 to 160 households. All standing trees of more than 10 cm in diameter in randomly selected UFS blocks are measured and enumerated. Based on inventories of 689 urban areas in India, carried out from 2002 to 2006, a total of 221 million trees, with a wood volume of 80.4 million m<sup>3</sup>, are estimated, along with species details. Results of an inventory of all urban areas in Punjab (India) have also been presented. A strategy and guidelines for promoting urban forestry, including management mechanisms, citizens' participation, a legal framework and sustained financial support, have been discussed.

## ANNEX 6. Priority areas and objectives for urban and peri-urban forestry

The objective of this list of priority areas is to recognize UPF as a significant contributor to better urban and peri-urban forests for vulnerable populations, particularly in developing countries and countries with economies in transition. The list is based on 15 keynote presentations and related discussions in four working groups. Needs, constraints and related institutional expertise have been identified, and a SWOT analysis performed to put the priority areas into order of importance.

Main objectives are listed for each priority area, along with major stakeholders, time tables (short-, medium- and long-term), budgets (small, medium or large), primary threats/demands, and feasibility factors.

UPF is a general term covering individual trees, tree stands, forests and green spaces (e.g., parks and recreational areas) in or near urban areas.

Strategic processes and tools for UPF should:

- promote the inclusion of urban forestry and green infrastructure in urban planning;
- promote and consolidate UPF strategies at the local level, through the development of guidelines and practical implementation;
- assess the legal and administrative status of urban and peri-urban areas in supporting planning and decision-making;
- promote and support a network of green cities, such as through a network of mayors, and tools such as accreditation and certification;
- favour the branding and marketing of UPF's multifunctionality;
- communicate the definition, concepts and potentials of UPF;
- enhance institutional capacity, while promoting UPF strategies and actions.

Innovative research in UPF is needed to:

- explore methods, actions, processes and technologies that highlight the social aspects of UPF;
- develop global criteria, indicators and standards for UPF;
- develop and adapt methods for assessing and quantifying environmental goods and services;
- develop and adapt economic valuation methods;
- promote research networks for specific areas;
- focus climate change issues on UPF for both adaptation and mitigation;
- explore methods and procedures for addressing socio-environmental vulnerability through UPF.

Knowledge transfer and information flows for UPF should:

- facilitate, review and organize existing knowledge, to identify the level of knowledge and the gaps;
- develop and promote strategies and appropriate tools (e.g., databases and networking) for the transfer of knowledge and technologies to interested institutions;
- promote and support global information networks (including interactive databases) on the web, and link these to regional, national and local networks;



- enhance collaboration, coordination and technology transfer among cities, to share expertise and knowledge.

People's involvement and empowerment in UPF should be based on:

- promoting the active engagement of stakeholders and local communities in decision-making;
- promoting a permanent stakeholders' forum on UPF policy and legislative initiatives;
- defining effective procedures for evaluating the goods UPF provides for poverty alleviation;
- supporting networks of producers/consumers;
- increasing and consolidating awareness of conflict resolution tools;
- promoting UPF as a tool for population shift planning;
- promoting cross-sectoral dialogue.

The UPF design, planning and management continuum should:

- harmonize management styles and activities in UPF, urban agriculture and urban planning/development;
- support multifunctional UPF management plans;
- promote and facilitate UPF inventories;
- strengthen the key issues of soils, species and water in the design and management of UPF plans.
- enhance technical capacity for management, design and planning.

## **Annex 7. Recommendations for Latin America and the Caribbean**

### **INTRODUCTION**

In Latin America and the Caribbean (LAC), care of the environment is becoming increasingly necessary, including promotion of UPF as fundamental to city ecosystems through supplying environmental goods and services such as good-quality air and water, improving physical and emotional public health, capturing CO<sub>2</sub>, preventing natural disasters, generating employment and income, and helping to increase food security. UPF is also an important source of fuel, energy and raw materials for small industries.

These are reasons for greening cities and increasing UPF to improve the quality of life of the population.

The LAC region has the necessary technical knowledge and research to improve and increase UPF. It also provides examples of successful institutional arrangements and valuable experiences in the planning and execution of UPF programmes, which are a basis for developing similar activities in other countries and regions.

Nevertheless, the actions carried out are still too few, and do not always have the needed continuity.

Sound evaluations of several UPF interventions have been carried out in countries such as Argentina, Brazil, Colombia, Cuba and Peru. They identify constraints, advantages, and technical and socio-economic opportunities for developing UPF in these and other countries of the region with similar conditions.

The following recommendations recognize the importance of UPF, the demonstrated feasibility of its development and the present deficiencies in consolidating it.

### **ENVIRONMENTAL AND ECONOMIC ASSETS**

- The state of knowledge about cities' forest assets is poor, not only in terms of amount but also because it has not been collected, qualified and disseminated in ways that promote its use. Review and dissemination of the existing knowledge are recommended.
- Economic valuation of the goods and services supplied by urban forest resources is necessary. This requires the compilation, adaptation and dissemination of methodologies. Where such methodologies do not exist, it is recommended they be developed in ways that are suitable to local conditions. The preparation and distribution of guides and manuals is also recommended.

### **MANAGING LANDS, FORESTS AND TREES: GOOD PRACTICES AND CONSTRAINTS**

- UPF can be integrated into urban agriculture (UA) and peri-urban agroforestry (PUAF). Such integration, where appropriate, makes UPF more feasible, and increases the benefits, especially for food security, thereby improving the quality of life of vulnerable communities. UPF and its integration with UA and PUAF should be better researched and disseminated among communities.
- Cities, especially larger ones with natural protected areas, need to enforce legislation for UPF and its management, by accompanying the efforts of local authorities with neighbourhood watch mechanisms.

- As demonstrated in several LAC cities, inventories of urban trees, forests and their main attributes can be made through the use of modern technologies and appropriate methodologies with a common conceptual framework. Such inventories must be implemented as a basis for planning UPF as a fundamental contributor to integrated city development. UPF planning must be part of cities' master plans. Technical advice from experienced institutions is available and should be organized through a specialized regional or subregional network.
- Green infrastructure must be included in urban expansion and recovery plans. Validated methodologies for such planning, including participatory processes, are available. It is recommended that these methodologies be disseminated, and that authorities and communities be encouraged to learn about them and put them into practice.
- Water supply of sufficient quantity and quality is a serious and increasing problem for cities. Authorities and other stakeholders should therefore focus on UPF, with regard to the sustainable management of watersheds and wastewater.
- New efforts are needed to produce and disseminate general information, guidelines, manuals and similar materials regarding good practices for UPF.

#### **PARTICIPATORY APPROACHES, POLICY, LEGAL, PLANNING, DECISION-MAKING AND ACCOUNTABILITY**

- Sustainable UPF depends on having the direct participation of stakeholders in its planning and implementation. Interest and decisions from the authorities, actions by specialized institutions and support from scientists and practitioners cannot achieve the objectives of UPF without local communities' ownership of UPF programmes. Methodologies and interventions for improving participation in planning and implementation are available from several institutions, and should be put into practice in every UPF process. It is also necessary to develop general guidelines for ensuring the active participation of local communities and other stakeholders in UPF decision-making and implementation.
- Land-use plans are a fundamental tool for sustainable forestry, agriculture and watershed management, including for UPF. Unfortunately, very few cities have designed such plans, and even fewer are implementing them. City authorities are specially requested to formulate or update such plans.
- Forests and their resources (water, soils, wildlife) should be managed through multisectoral approaches and multi-institutional implementation. If UPF is to be sustainable, it must be integrated into diverse institutional agendas.
- Forums where strategic stakeholders (public, private, NGO, academic, etc.) can discuss UPF policy and legislative initiatives should be created, along with platforms for consensual planning and coordinated implementation of activities, including the monitoring of progress, costs and impacts. These should be established as permanent mechanisms for dialogue, to avoid the disruption of policies and programmes when public administrations change.
- The multisectoral nature of UPF and its important influence on national and local development processes should be recognized through short- and long-term support from the State. National and, in federal countries, state governments should be encouraged to promote policies and laws in this area, and where such laws already exist, local authorities should be encouraged to formulate appropriate regulations. FAO's assistance in this is requested.

- Special attention must be paid to the creation/updating of legal and regulatory frameworks that promote the creation and preservation of woodlands in urban and peri-urban areas (e.g., fiscal incentives), regulate the design and management of these areas and promote the development of favourable mechanisms for investment in UPF projects.
- The formulation of favourable legal and policy frameworks must be accompanied by suitable institutional mechanisms for human and financial resources, operational capacities, and other elements that make it possible to fulfil the laws and policies.
- UPF can help generate participatory processes for local development, especially in vulnerable settlements, and can be a planning tool for managing the migration dynamics that affect urban and peri-urban natural resources.

## **SUPPORT TO CAPACITY BUILDING: COMMUNICATION AND OUTREACH, NETWORKING AND FUNDING, RESEARCH AND EDUCATION**

### **Capacity building**

- Municipal authorities' capacities for developing UPF can be strengthened through the establishment of green city networks, for example networks of mayors, for exchanging knowledge, experience and tools at the national and subnational levels.
- Institutions responsible for UPF management should participate in the multisectoral councils or other mechanisms that regulate municipal development, to promote and coordinate comprehensive strategies and actions for forest management.
- UPF does not receive sufficient consideration in national forest programmes. It is recommended that forest authorities and stakeholders incorporate UPF into these programmes.

### **Funding**

- Funding of UPF is a major problem, especially in small cities. Strategies for seeking funding sources outside municipalities and local financial mechanisms should be analysed and put into practice. National authorities, international organizations and private sector companies committed to corporate social responsibility all have roles to play in breaking the financial vicious circle that impedes UPF development.
- Owing to its important social effects, UPF should be linked to social subsidy programmes and participatory budgeting.
- The National Forest Programme (NFP) Facility has expressed an interest in supporting the development of better UPF policies, planning, participatory processes, knowledge management and information. National Forest Programme national focal points and steering committees should take advantage of this opportunity by emphasizing UPF activities. Countries that are not currently associated to the NFP Facility can obtain information about the procedures for entering its partnership agreements.

### **Research and communication**

- It is recommended that research networks be established for UPF-related themes (which include more than forest issues), to promote research and share knowledge and expertise for improving UPF programmes and projects. These networks should document and systematize experiences, allowing the improvement of methods, techniques and actions.

- Networks of cities that share similar situations could also share their UPF experience and knowledge.
- The public and private sectors' awareness of UPF must be increased through campaigns supported by national and local authorities and other stakeholders, such as through disseminating information on the benefits of greening cities, outlining development issues and successful initiatives, and supplying materials for the media.

### **Education**

- Sustainable improvements of UPF and more efficient UPF programmes depend on including UPF issues in undergraduate forest sciences curricula and creating UPF post-graduate courses for professionals from various backgrounds. Training on UPF planning, design and management should update the knowledge of professionals already dealing with UPF.
- Environmental education programmes for all age and social groups must include UPF issues, to increase their effectiveness.

### **Networking and institutional coordination**

- A worldwide network with regional and national sub-networks is needed for promoting and assisting UPF processes. It is suggested that FAO organize this network.
- To make UPF processes more efficient, it is recommended that mechanisms be established for the coordination and sharing of experiences and knowledge among cities.
- It is recommended that FAO's Latin America and Caribbean Forestry Commission (COFLAC) include – in its regional and subregional work programmes for the 2008 to 2010 biennium – goals, activities and indicators aimed at expanding UPF in the region.
- The LAC countries should hold national conferences and other events to assess, and propose improvements to, the development of UPF. Colombia is proposing such as conference for 2009.
- A LAC conference should be held to promote the development of UPF in the region.

FAO organized an international meeting on urban and peri-urban forestry (UPF) in Bogotá, Colombia, from 29 July to 1 August 2008. The theme was Trees Connecting People: In Action Together. The event convened more than 50 experts and local authority representatives from institutions around the world specialized in related disciplines, such as forestry, agriculture, urban planning, bioenergy, disaster risk management and community development. The main objective was to build institutional collaboration and initiate a programme of work in line with FAO's mandate, paving the way towards durable and informed contributions to the concept of Forests and Trees for Healthy Cities: Improving Livelihoods and Environment for All.



**Forests and Trees for Healthy cities**  
Improving Livelihoods and Environment for All

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