World Forum on
Urban Forests

Greener, healthier and happier cities for all: a Call for Action

**World Forum on
Urban Forests**
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Why a call for action?

For the first time in history, over half of the world's population lives in towns and cities, a proportion projected to reach 68 per cent by 2050. Some 378 cities had over a million inhabitants in 2000, a dramatic jump from just 11 such cities a century earlier. That number is likely to reach almost 600 by 2025.

For urban dwellers, our wellbeing and often, our livelihoods, depend on the many services provided by healthy, natural ecosystems in and around our towns and cities. However, as urban areas rapidly expand, land use planning is too often inadequate, failing to take full account of nature's benefits. Population pressures can significantly damage forests, trees and the natural landscapes in and around cities with many consequences:Environmental: surrounding landscape fragmentation and habitat loss; higher frequency and vulnerability to extreme weather events including floods, droughts, landslides and extreme winds; increased vulnerability of soils to erosion and watersheds to degradation; exacerbated *heat island effect* within cities; increasing levels of air pollution.

- **Environmental.** Landscapes are fragmented and habitats lost; communities become more vulnerable to extreme weather with floods, droughts, landslides and powerful winds; soil becomes more susceptible to erosion and watersheds to degradation; air pollution levels rise.

- **Economic.** Urban poverty, economic inequality, and food insecurity increase; resource availability falls, supplies drop and costs rise..

- **Social and cultural.** People disconnect from nature; water access, sanitary and hygienic conditions for the poor diminish; physical activity falls, leading to a rise in   disease such as cancer, cardiovascular diseases, allergies, obesity.

Urban forests and trees can help to address these challenges and help attain many of the Sustainable Development Goals, including SDG 11 on making cities inclusive, safe, resilient and sustainable. The UN's New Urban Agenda further emphasizes the contributions of urban forests and green spaces towards sustainable development. Meanwhile, cities worldwide have shown that investments in urban forestry can contribute greatly to the quality of life. More international organizations, and research and science institutions are examining the part green spaces and trees play in achieving global sustainability goals. What is now needed is an integrated approach that encourages shared action and experiences for greener, healthier and happier cities for all.

This call for action is the first step.

Our vision

Cities are a remarkable creation in which most of us live our lives through networks of relationships with each other and with our physical environment. These relationships help to create the character and identity of the city landscape. Urban trees and green spaces are critically important to that identity. Trees help to mark the passing of time and open a window for us to observe the cycle of nature, which is also the cycle of our daily life. Our vision is of a city where urban and peri-urban forests, trees and other green infrastructure will be:

- used as a tool for achieving the Sustainable Development Goals (SDGs) locally, in cities and urban regions, and globally;

- recognized for the wide range of benefits and services they provide to urban communities, such as:
  - improving environmental quality
  - enhancing food security
  - ensuring sufficient and good quality water
  - conserving urban biodiversity
  - mitigating climate change
  - reducing air pollution
  - stimulating the green economy
  - preserving natural and cultural heritage
  - strengthening social cohesion, and
  - providing environmental education opportunities

- acknowledged as critical infrastructure, similar to utilities or transportation; like other infrastructure, green spaces must be planned, designed, created, managed, maintained and used;

- viewed and managed as a whole; trees in peri-urban forests, parks, streets, private gardens and other public spaces are all part of the urban forest;

- regarded as a strategic component of the landscape, aimed at harmonizing relations between cities and interconnected rural areas;

- valued as an efficient living system capable of improving human health and wellbeing at a reasonable cost;

- considered a strategic element of urban sustainability by enhancing community involvement and promoting environmental justice;

- managed so as to preserve the highest ecosystem complexity and integrity.

Forests and trees between should also be protected and restored. Rural-urban linkages should be enhanced through landscape planning and design, building interconnected regional eco-corridors, protecting healthy forest ecosystems for urban water supplies, limiting unplanned urban expansion, and introducing a green infrastructure approach.

we should use urban forests and trees to make our cities:

1 / Greener

Cities need forests, people need green spaces. In fact, the colour green is often associated with well-being and positive feelings; it's the color of balance, harmony and growth. Green cities are strategic for urban communities and play a key role in our future. Greening our cities involves all aspects of urban life: not only ecology, but the economy, culture, architecture, psychology, education, health and society. When a city invests in peri-urban forests, city parks, green and blue corridors, trees on streets and public squares, private gardens, courtyards and other green spaces with trees, green roofs, and green buildings, the resulting green infrastructure enhances the quality of places where we live, work and play. Trees and forests are the backbone of this green infrastructure and are key actors in the theater of urban landscape. They are essential elements of the form, dynamics and architecture of cities. To ensure that we can all enjoy the benefits of both existing and new urban green spaces, city planners should pay attention to their equitable distribution and accessibility. The greener the city, the greater its resilience.

we call for:

networks of well-distributed, quality public green spaces with equitable and easy access for all;

- nature-based solutions and a green infrastructure approach to planning, designing and managing cities for maximizing benefits from urban trees and forests;

- expanding canopy cover in cities, using the right tree in the right place;

- appropriate tools for the development of sound urban forestry and green infrastructure policies;

- celebrations of trees and forests to remind us of the value of nature and green spaces.

- In 2015, Vancouver launched its "greenest city 2020 action plan" where: Clean Air, Green Buildings, Access to Nature, Green Economy, Local Food are driving goals for planning the future of the city.
- In 2004, China launched the "National Forest City" programme in order to respond to the increasing environmental problems due to fast and often unplanned urban growth. In 2020, 200 cities are expected to join the programme. The average annual new forest green cover per city amounts to 14,000 hectares.
- Bangui, the capital city of Central African Republic adopted a strategy and an action plan on the development of urban forestry as a tool to alleviate poverty and ameliorate the quality of life in on e of the poorest countries of the World. Morocco built a national strategy on urban forestry and provided guiding documents accordingly.

2 / Healthier

We usually feel good when we are in a green space. Evidence shows that the presence of trees and urban forests have a positive influence on our health and well-being. Think of urban forests and trees as a kind of *green physician*, improving our health directly and indirectly, and at little expense. Well-designed and managed urban forests and green spaces substantially contribute to healthy lives and well-being through disease prevention, therapy and recovery. These forests filter and efficiently remove pollutants and particulates, helping reduce the incidence of non-communicable diseases. The woodlands and other green spaces in and around cities, provide ideal settings for outdoor recreation and relaxation activities which in turn, help to prevent and treat non-communicable diseases while reducing stress and bolstering mental health.

We call for:

- **A 10 percent increase in urban green space in a community can postpone the average onset of health problems by up to five years.**
- **A study in London found that the number of medical prescriptions decreased by 1.18 per 1 000 people for every extra tree per km of street**
- **Children living in areas with good access to green spaces have been shown to spend less time in front of television screens, computers and smart phones and to have an 11–19 percent lower prevalence of obesity compared with children with limited or no access to green spaces**
- **In the United States of America, trees help reduce or prevent more than 670 000 cases of severe respiratory diseases per year and thereby save more than 850 lives annually).**

- national public health-care plans that recognize the positive role that urban forests and trees play in our health and well-being;

- reinvestment of health-care savings from urban forest ecosystem services into creation of new green spaces;

- urban forests, therapeutic gardens and open spaces designed with input from health experts to emphasize their healing potential.

3 / Happier

Most people appreciate trees and are happier when they are in green spaces. We urban dwellers use green spaces for relaxation, alone or in groups, for social events and cultural performances. We use these green spaces to get together, meet friends, enjoy free time with our children, to jog, ride a bike, play with our pets, or simply for a stroll through the great outdoors. Many communities support tree planting as well as conservation of existing trees and forests, in both rich and poor areas of cities. Social, cultural and religious values are often associated with urban forests and trees; old, established trees and ancient forests, in particular, can be linked with efforts to preserve our community's cultural heritage. The longevity of these trees, across decades and centuries, helps to connect older and younger generations and fosters our attachments with our towns and cities. Urban forests and other green spaces also provide natural 'classrooms' for environment-related education.

We call for:

· **Being happier in the green is a state that can be easily reached by outdoor walks in urban green spaces at the doorstep. It can lead to a reduction in clinical depression of more than 30 percent compared with indoor activities while helping the development of socially equitable relationships.**
· **In Helsinki green spaces with trees are the backbone of the structure of the city and thousands of people spending free time there in a late spring sunny day fully justify this planning and governance decision**
· **In Colombia, greening initiatives offered manifold opportunities to restoring social and ecological resilience in urban areas and thus contribute to a lasting peace after 50 years of conflict.**

- political agendas that promote green spaces and urban forests as key element of the social and ecological resilience of future cities;

- inclusive social design and management programmes that use urban forests to strengthen community identity;

- equitable distribution of benefits from urban forests across socio-economic and cultural groups;

- educational tools and projects promoting the value of urban forests and trees for cultural heritage;

- research into community perceptions of the recreational and socio-cultural value of urban forests and trees; and the links between nature and happiness.

4 / Cooler

On hot summer days, an urban forest is a breath of fresh air. Throughout history, we humans have enjoyed the shade of trees and their natural cooling effect. Trees mitigate the thermal extremes of the built-up urban environment much more effectively than air conditioning. Urban forests could also, potentially, reduce the vulnerability of cities to climate change. That has clear implications for urban planning policies that might otherwise encourage urban infill — that is, high housing densities and the consequent potential reduction or loss of green spaces. As temperatures rise due to climate change, green spaces are likely to become increasingly important, especially for their direct ameliorating effects on urban microclimates and potential to decrease urban energy consumption by shading and cooling. In parallel, urban forest and trees, as the pillars of green infrastructure, substantially contribute to the reduction of the urban 'heat-island' effect.

- · **The net cooling effect of a young, healthy tree is equivalent to ten average sized air-conditioners operating 20 hours per day •**
- · **Shade from trees can reduce utility bills for air-conditioning in residential and commercial buildings by 15–50 percent**
- · **Several countries and cities have established minimum green-cover standards for hospitals and convalescence homes**
- · **Trees, urban forests, green roofs, green buildings and vertical forest and vegetation can help reduce urban heat island effects by shading building surfaces, deflecting radiation from the sun, and releasing moisture into the atmosphere. Shaded surfaces, for example, may be 11–25°C cooler than the peak temperatures of unshaded materials. Evapotranspiration, alone or in combination with shading, can help reduce peak summer temperatures by 1 to 5°C.**

We call for:

- • regular monitoring of the heat-island effect for strategic planning of urban forests to reduce thermal extremes of cities;

- • integrated design and co-management of green and grey infrastructure of cities, maintaining/enhancing tree cover throughout the city for maximum comfort;

- • nature-based solutions for thermal regulation (hot and cold) of cities, to improve quality of life and cut energy consumption;

- • technical guidelines on how to plan, design and manage urban forests and trees to reduce the heat-island effect;

- • financial resources for the creation and sustainable management of urban forests and other green infrastructure for climate-change adaptation and mitigation.

5/Wilder

Biodiversity has an intrinsic value and represents a key element of any landscape, including cities. Habitat fragmentation is the biggest threat to the conservation of wildlife and natural ecosystems in urban areas. Increasing and restoring the functionality and connectivity of urban and peri-urban natural landscapes can be valuable in conserving natural resources and biodiversity. In fact, the more heterogeneous, undisturbed and interconnected our green infrastructure is, the more resilient our ecosystems will be. Although all green space can contribute to biodiversity conservation, it is important to conserve as much as is possible of the original natural vegetation – grasslands, forests, wetlands and riparian corridors (the zone between land and a river or stream.) That's because these are unique habitats for native plants and animals. Diversity also concerns human communities. Urban forest and trees are fundamental for maintaining local identity, providing natural experiences for urban and peri-urban dwellers, creating diverse landscapes, and maintaining cultural traditions. They help create significant landscapes with particular symbolism that preserves a cultural diversity that characterizes most fast-changing cities. Caring for urban forest and trees will help younger generations understand the value of nature, allowing them to enjoy all the social and natural aspects of diversity.

- · **An estimated 20 percent of the world's bird species and 5 percent of the vascular plant species occur in cities (Aronson et al., 2014).**
- · **There are approximately 200 000 trees in Amsterdam's open spaces, and the mosaic of interconnected landscapes provides homes for 140 bird species, 34 mammal species, 60 fish species and six frog and salamander species.**
- · **• On average, 70 percent of the plant species and 94 percent of the bird species found in urban areas are native to the surrounding region.**

We call for:

- • conserving and creating an heterogeneous system of natural green spaces within and around urban areas

- • developing strategies and guidelines for urban biodiversity conservation and management

- • promoting initiatives and schemes to harmonize national/local policies addressed to better interconnect natural landscapes in and around urban areas

- • implementing school educational programmes addressed to make students discover, experience and value local biodiversity

6 / Cleaner

Well-managed and healthy urban forests can help to maintain and improve air and water quality in and around cities. Trees in cities can improve air quality through a variety of chemical reactions and by capturing and holding air pollutants. By decreasing air temperature, trees also help us reduce our use of air conditioners which, in turn, saves in energy use and polluting emissions. Urban and peri-urban forests can also contribute greatly to the sustainable management of water and water resources. By protecting soils, reducing erosion, mitigating climate extremes and supporting natural ecosystem processes, trees are often crucial in protecting and conserving watersheds that serve urban communities. By intercepting air pollutants, reducing sediment and filtering rainwater, they can also play key roles in increasing not only availability but also quality of water.

- Urban trees in the conterminous United States of America remove some 784 000 tons of air pollution annually, at a value of US$3.8 billion.
- Trees within cities can remove fine particles from the atmosphere and consequently improve air quality and human health. In a comparative study conducted on 10 American cities, the total amount of PM2.5 removed annually by trees varied from 4.7 tonnes in Syracuse to 64.5 tonnes in Atlanta, with annual values varying from $1.1 million in Syracuse to $60.1 million in New York City. Most of these values were from the effects of reducing human mortality.
- Ninety percent of sediments and nutrients can be prevented from entering waterways by maintaining strips of riparian vegetation.
- In 50 years, one tree can recycle water to the value of US$35 000.

We call for:

- air quality strategies and agendas that recognize and include urban forests and trees to better reduce and remove air pollutants;

- larger urban forests and green belts for greater air pollution filtering;

- sustainably managed peri-urban forests to preserve peri-urban watersheds, particularly those on which the quality of water supply depends;

- regional databases for tree/shrub species selection, including issues related to air pollution.

7/ Wealthier

Investing in urban forests can be a promising strategy to sustainably create jobs, increase income and boost local green economies. In fact, the planning, design, management and use of urban forests can generate employment and business opportunities in: nurseries; gardening; production of food and non-timber forest products such as fuelwood and medicines. It can encourage timber and bamboo industries; tree-care services; tourism; landscaping; and forest management. The shading and windscreen effects of urban forests can help decrease energy consumption by cutting our need for artificial cooling and heating. The positive effects of green spaces on our mental and physical health can generate further public savings; reducing hospital stays and speeding recovery times which generates savings in public health costs. Urban forests and trees can boost property and land values, while also attracting investment, businesses and tourism. Finally, nature-based solutions founded on implementation of urban forests and green infrastructure are often more affordable than traditional/grey approaches to urban development, thus representing an effective and convenient option in addressing urban challenges.

- **UPF supports an estimated 15 500 jobs (1.2 percent of total employment) in Manchester City, in areas such as the processing of forest products, tree-related tourism, and professional forestry-related services.**
- **In New York City, every dollar spent on tree-planting and care provides up to 5.6 dollars in benefits.**
- **The establishment of 100 million mature trees around residences in the United States of America is said to save about US$2 billion annually in reduced energy costs.**
- **In the United States of America, the appraised values of homes adjacent to naturalistic parks and open spaces are typically 8–20% higher than comparable properties without such amenities.**
- **One study found that, on average, prices for goods purchased in Seattle (United States of America) were 11 percent higher in landscaped areas than in areas with no trees.**

We call for:

- cost-benefit analysis of services derived from urban forests, trees, and green spaces;

- increased use of green, as opposed to grey, infrastructure in urban development strategies;

- agreements, policies and regulations to promote green and circular economy models based on sustainable management of urban forest and trees;

- promotion and creation of green jobs and economic opportunities in urban forests and green spaces.

8 / Safer

Climate change, rapid urbanization, high-density and growing urban populations are together increasing the vulnerability of our cities. Many of us living in urban and peri-urban areas face potential risks to our health, well-being and livelihoods.

Yet well-managed urban forests offer opportunities to restore degraded, neglected and abandoned lands and remediate degraded soils. Sustainable management of urban forests and trees reduces risks from wildfires, which are increasing near built-up areas. Urban forests and trees can help minimize damaging runoff during periods of intense rainfall and reduce the severity of flooding. Urban trees and green spaces have positive social effects and increase safety by attracting people to meet and socialize, play sports, and relax.
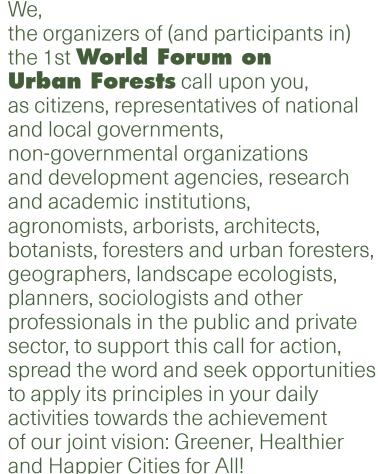
Mismanaged trees could pose a safety hazard if, during storms, they drop limbs. However, the knowledge and solutions exist to minimize these risks.

- After the failure of structural flood defences in New Orleans after Hurricane Katrina in 2005, the city has taken steps to increase the resilience of the city to sea level rise, hurricanes and flooding. There has been a clear shift from structural defences to more natural solutions utilising green and blue infrastructure based on Dutch experiences.
- In Northumberland, woodlands have been shown to provide £1,200 per hectare in flood alleviation savings versus the cost of engineering a solution.
- The Mt. Tabor sustainable drainage system installed in Portland, Oregon uses terraces for stormwater processing with the lower areas processing the water for human consumption while the whole area is surrounded with walkways and promenades. The system effectively copes with storm events whilst using nature to clean road run-off and overflows into local rivers have been cut by 35%.
- A study conducted in Baltimore, United States of America, showed that a 10 percent increase in canopy cover was linked to a 12 percent decrease in crime (Troy, Grove and O'Neil-Dunne, 2012)

We call for:

- nature-based solutions to increase urban communities' resilience to extreme weather events, floods, storm-water runoff, landslides;

- management of urban forests and tree to reduce public health risks associated with their presence in the urban environment;

- urban green space plans aimed at increasing social cohesion and reducing crime.

Call for action!

It's time now for efficient governance of urban forests and trees: harmonizing proactive policies, strategic planning and legislation that makes the most of our urban forests and trees. International, regional, national and local policies must integrate urban forestry into urban planning. This could also reduce land-use conflicts and minimize tradeoff between urban green and grey infrastructures.

Increased advocacy, communication and public education is needed to raise awareness and encourage urban forestry investment. Education and research activities should be strengthened through networking and knowledge-exchange events.

We,
the organizers of (and participants in) the 1st **World Forum on Urban Forests** call upon you, as citizens, representatives of national and local governments, non-governmental organizations and development agencies, research and academic institutions, agronomists, arborists, architects, botanists, foresters and urban foresters, geographers, landscape ecologists, planners, sociologists and other professionals in the public and private sector, to support this call for action, spread the word and seek opportunities to apply its principles in your daily activities towards the achievement of our joint vision: Greener, Healthier and Happier Cities for All!

Organizers

Food and Agriculture Organization of the United Nations

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