The societal benefits of urban and peri-urban forestry in Europe

Amy Stewart  
(Forest Research, UK)

Simon Bell  
(Edinburgh College of Art, UK; Estonian University of Life Sciences)

Giovanni Sanesi  
(University of Bari, Italy)

Rik de Vreese  
(Vrije Universiteit Brussel, Belgium)

Arne Arnberger  
(University of Boku, Austria)
Two important themes:

1. Sustainable forestry resources and management
2. Urbanisation

Result = If trees and woodlands are to provide the maximum benefit to society then we must consider their role in a (peri-)urban context where most people live
1. Environmental Benefits
2. Social Benefits
3. Economic Benefits
4. Gaps in Evidence
5. Things to Think About
Improving Air Quality
Trees help improve air quality (and human health) by interception of particulates and gases through surface effects and absorption into the leaves

Key Considerations:
• Locate trees near to pollution source
• Trees with most foliage best
• Conifers more efficient but more susceptible to damage
• Rough leaf broadleaved trees better than smooth leaf varieties
• Some trees emit VOCs which can worsen downwind air quality
Moderating Urban Climates

Trees help to lessen the impacts of the ‘Urban Heat Island Effect’ through lowering temperatures by a process of evaporation and transpiration.

Groups of trees can also help reduce the turbulence of winds and increase the shelter effects in streets and public spaces.
Moderating Urban Climates

Key Considerations:

- Different species have different cooling capabilities
- Location is important
- Trees can increase heating needs in winter so deciduous trees may be better than conifers
- Effectiveness of windbreaks depends on placement in relation to spaces and buildings, tree height, width, length and permeability
Reducing Rainfall Runoff Intensity and Flooding and Improving Water Quality

- Trees help reduce storm water runoff and flooding by intercepting and re-evaporating water from their canopies and by allowing water to percolate into the soil beneath their canopies.

- Trees can also help to improve water quality through their ability to capture atmospheric pollution and affect the chemical composition of the water that runs off them or into the ground.
Reducing Noise Levels

Bands of trees can act as barriers to help reduce noise levels, reduce perceptions of noise and generate more pleasant noises.

Key Considerations:

- Plant close to noise source rather than receptor area.
- Wide belts of tall, dense trees combined with soft ground surfaces work best.
- However, some studies have found that visual screening of noise sources using trees can actually enhance sensitivity to noise.
Supporting Biodiversity

Tree cover has been demonstrated to be important for biodiversity in urban areas and trees can play a significant part in enhancing connectivity by providing networks and corridors between habitats.
Education and Learning
UPF resources valuable assets for education and learning, enhancing skills and competencies and ‘re-connecting’ people with nature

Aesthetics and Quality of Place
Trees play an important role in creating more aesthetically pleasing landscapes in peri-urban and urban areas
Recreation, Physical Health and Mental Well-being

Not clear whether access to green spaces encourages greater levels of physical exercise but strong evidence to support restorative, stress and mental fatigue alleviating potential of UPF
Social Interaction, Inclusion and Cohesion

Green spaces can encourage people from different backgrounds to interact and can act as a platform to bring communities together.
Key Considerations

- Proximity
- Accessibility
- Environmental quality (litter, vandalism, dog mess)
- Poor condition of facilities
- Social/environmental justice
- Perceptions of UPF as unsafe or dangerous

Need to engage with people if you are to overcome barriers to use
Valuation of Social and Environmental Benefits

UPF interventions can have positive impact on job creation, new business start-ups and private investment leverage.

Recent study in Los Angeles of an urban forestry intervention valued the benefits at $38-$56 per tree planted.
Economic

Willingness to Pay

More roadside vegetation not only increases amenity value but is also positively associated with a greater willingness to pay for goods and services.
Property Values

Proximity of houses to and views of well-managed, aesthetically pleasing green spaces, woodland and parks increases property values.

Key Considerations

• Types of trees in view of, or close by to properties may impact upon the potential positive effect they can have on property prices.
• Quality of UPF and green spaces intimately linked to property value.
Gaps in Evidence

• Lots of studies from North America – need to replicate and advance in Europe

• Need to develop common approaches to the identification and valuation of the products, services and benefits provided by UPF

• Lack of studies and guidance focusing on how exactly UPF should be designed and maintained to ensure maximisation of the potential benefits to society

• We don’t know enough about the different benefits provided by different types and elements of UPF

• More needs to be understood about how the attainment of certain benefits impacts upon the realisation of other benefits (‘trade offs’)

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Things to Think About

1. How does the improved governance of UPF help to promote benefit realisation and through what mechanisms/forms? For example,
   - the integration of UPF into spatial planning
   - participation and engagement with stakeholders, including the general public

2. What can we learn from today’s presentations about ways to enhance benefit realisation through improvements/changes to the physical UPF resource? For example,
   - species choice?
   - infrastructure developments
   - proximity to where people live