URBAN AFFORESTATION

Long-term economic returns

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Urban forests provide ecosystem services that ultimately benefit human well-being. However, city planners do not usually account for short-term planting costs, ongoing maintenance, potential positive and negative externalities, and dynamic environmental feedbacks. As a result, the actual long-term return on urban afforestation investments is often unknown.

Benjamin Jones of the University of New Mexico, USA, and Shana McDermott of Trinity University, USA, estimated the returns of tree planting in New York City using an integrated bioeconomic–health model. They found that afforestation can provide positive net benefits to society, even after accounting for the cost and impacts

of tree pollen, but lower than previously estimated (roughly US\$12 instead of US\$172 per planted tree). They also found that the net benefits are maximized for an 8.2% growth in forest canopy, suggesting that afforestation beyond certain thresholds could not be efficient. Finally, using hypothetical air quality scenarios, the researchers show that planting trees can help to address unexpected changes in urban air quality that are likely to affect human health.

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