Forest Research

Understanding the role of i-Tree Eco in protecting and expanding the urban forest: executive summary

Introduction

Urban forests provide a number of ecosystem services (ES) which benefit society. The value of these services to society has been recognised in English, Scottish and Welsh national policies, which promote protection and enhancement of urban forests (Forestry Commission Scotland 2015; Welsh Government 2015; HM Government 2018). Yet dwindling local authority (LA) budgets mean funding for urban forest management is often limited. Reviews of LA urban forest management have identified a lack of long-term planning, including few management plans and incomplete urban forest inventories (Britt & Johnson 2008; van der Jagt & Lawrence 2015; Davies et al. 2017). Greater information on and awareness of the value of urban forests has been recognised as central to supporting management of urban forests (Natural Resource Wales 2016; Scottish Government 2016; HM Government 2018).

One tool to assess an urban forest's state and delivery of ES is i-Tree Eco (https://www.itreetools.org/). This tool has been applied worldwide and as at January 2018 had been used in 22 urban areas in Great Britain (GB). **i-Tree Eco projects aim to provide an evidence base to inform urban tree management, raise awareness of the value of urban trees and justify for investment in their management**. Yet there has been little evaluation of whether i-Tree Eco projects achieve these aims. Only a single evaluation is known to have been completed in GB, that of the Wrexham i-Tree Eco project. The evaluation identified impacts including informing management strategies and raising awareness around the benefits that urban forests provide (Jaluzot & Evision, 2016). These and other impacts, including securing investment in the urban forest, have been reported for international i-Tree Eco projects (Soares et al. 2011; Wells 2012; Ordóñez & Duinker 2013) suggesting that i-Tree Eco projects can meet their aims. Yet barriers have also been reported. Local project factors including project design, senior support and approaches to dissemination can all play an important role in the degree to which different impacts are delivered.

A study was conducted to evaluate the impact of i-Tree Eco surveys in GB. Four outputs were produced:

a   Part 1. Literature review: a review of literature was conducted which explored the i-Tree Eco tool, its application internationally, the potential role for i-Tree Eco within urban forest management and the context to six case studies used in Part 2. The

literature review covered materials available online, including policies, reports, media articles and research articles.

b   Part 2. Impact evaluation: this part of the study focused on six i-Tree Eco projects in GB: Torbay and Sidmouth in England, Edinburgh and Glasgow in Scotland, and Bridgend and Tawe catchment in Wales. To assess impacts, 17 stakeholders were interviewed. This information was supplemented by 40 responses to an online questionnaire. The interviews targeted stakeholders involved in i-Tree Eco projects: either as part of the steering group or commissioners of projects. The questionnaire targeted wider stakeholders, including individuals from local authorities, public bodies, private companies, third sector and research organisations. Questions were designed using an impact evaluation framework that examines impact within four key impact areas (after: Meagher et al. 2008). How and whether impacts were generated was explored, barriers to impact were identified and how these could be overcome was discussed.

c   Part 3. Impact summaries: one page reviews highlight emerging or realised impacts from eight i-Tree Eco projects (including the six case studies), with impacts identified from interview responses and a review of reports and policies.

d   Part 4. Executive summary: this report brings together and summarises the results from Parts 1 and 2.

These reports are accessible at: www.forestry.gov.uk/fr/itree-evaluation.

This represents the first known multi-project impact evaluation of i-Tree Eco. This evaluation will help to improve the impact of future i-Tree Eco surveys through better project planning, delivery and engagement with stakeholders to support understanding of the i-Tree Eco findings and implementation of the recommended actions.

Findings

Impacts

'Conceptual' Impacts: *Changes in understanding, attitudes and ways of thinking about an issue or problem or solution*

Evidence from the literature review suggests that i-Tree Eco is helping to tackle a risk-averse approach to forestry as it focuses on the value of urban trees. It has also helped enable ecosystem service valuation to become an accepted tool in local level decision-making for green infrastructure and urban forestry.

Over 50% of questionnaire respondents said that as a result of experience with i-Tree Eco they had improved knowledge of the urban tree resource and the importance of trees in the urban realm. In particular 50% reported they had a better understanding of species-mix and the role of trees in air pollution removal and climate regulation.

The interviewees had similar responses, stating they had a better understanding of where to plant trees and knew more about ecosystem service valuation. A number of

interviewees however, were urban forestry professionals and stated that i-Tree Eco had simply corroborated their existing knowledge of the importance and value of urban trees.

'Capacity-building' Impacts: *Increases in capacity, skills, expertise and funding*

The literature review identified a number of external organisations, which were not part of the project steering group, making use of the evidence in i-Tree Eco projects to illustrate the value of urban trees. Both the i-Tree Eco reports and these external reports helped strengthen the case in support of urban forests and improve the capacity for stakeholders to make an informed and more robust case for the urban forest.

From the questionnaire responses, 8 out of 40 respondents stated i-Tree Eco projects had led to themselves or others securing more funding to support the urban forest.

A small number of interviewees said they had received more funding, this included an increase in budget, securing full-time arboricultural officer post and promotion to a more strategic role. Other interviewees felt i-Tree Eco projects had helped to maintain their funding at a time of local council budget cuts. Others, however, stated there had been no increased investment despite the hope that it would. There were limited comments made by interviewees about skills development as a result of involvement in i-Tree Eco.

'Connectivity' Impacts: *Improved links between researchers and stakeholders*

The literature review found i-Tree Eco findings had fed into a range of policies from different council departments including transport, climate change and planning.

More than half of questionnaire respondents said i-Tree Eco had led to new engagement within different parts of their organisation.

The interviews revealed a number of examples of new or increased collaboration within and between organisations as a result of involvement in i-Tree Eco projects. Within local authorities this included collaboration with climate change, transport and sustainability teams. External collaborations included with private companies, Areas of Outstanding Natural Beauty officers, local schools, the health sector, universities, third sector organisations and Forest Research.

'Instrumental' Impacts: *Direct influence on a specific policy or practice*

From the literature review two i-Tree Eco projects were found to have informed new Tree and Woodland strategies. It was clear that these projects, which aligned their i-Tree Eco project with development of new strategies, were able to quickly deliver instrumental impact by applying findings to the new policy. Other projects researched within the literature review had reported little meaningful use of results with respect to informing tree management.

A quarter of the questionnaire respondents noted there had been a lot of change relating to promotion of the existing tree resource as a result of i-Tree Eco. However, only 3% of respondents stated that i-Tree Eco had led to a lot of change in the maintenance or more regular maintenance of trees. A further 10% said there had been 'a little change' in maintenance.

Interviewees reported that the results from the i-Tree Eco surveys had, or were, being used across a range of policies, plans, strategies, landscape design and evidence packs. Stakeholders who were interviewed also reported i-Tree Eco results had been used, for example, to inform assessments of risk from ash dieback, to feed into management and planning strategies, and to build cases for approaches to tree management.

Barriers to impact

Some of the i-Tree Eco projects reviewed had yet to realise any substantial impacts related to funding, increased policy support or change in management practices. Some stakeholders reported low interest in project findings and lack of engagement with other departments. Furthermore, the literature review and interviews found there was limited impact from i-Tree Eco reports at the national policy scale. A number of barriers to impact were identified. These included:

- *Problems with knowledge exchange and dissemination*: issues with communication of results stemmed from a lack of clarity of who the audience was and poor tailoring of report's language, content and message to different groups.

- *Public sector priorities*: stakeholders felt impacts were limited due to local authority having other priorities which the urban forest did not relate to, or that information was not available at a scale which local authorities found useful.

- *People see trees as negative or do not see valuations as robust*: trees can still be viewed as sources of nuisance and liability by some council workers and the public which can limit the uptake of findings into policy and practice.

- *Insufficient resources*: lack of resources, particularly for data analysis and dissemination of findings, limited wider use of and engagement with findings.

- *Organisational restructuring / staff turnover*: these changes often led to lost momentum in projects and took up resources to train new staff.

- *Lack of a 'champion' and senior staff buy-in*: stakeholders felt some projects did not achieve aims due to lack of senior level support and increased the risk of findings only being used symbolically in policies with no practical changes for tree management.

- *Departments not joined up*: not having the organisational structure which facilitated communication and collaboration on i-Tree Eco surveys between local authority departments inhibited broader use of the results.

Solutions to overcoming barriers

Future i-Tree Eco projects should undertake greater project planning at the onset of the work to identify key objectives for the project, key audiences and plan report dissemination to meet these two points. Aims concerning how the data will be used

should be discussed early-on, to allow projects to meet these aspirations. For example, use of the project findings to inform new tree and woodland strategies.

Stakeholders said there was a need for greater translation of the technical results of i-Tree Eco projects, including tailoring size and language of documents to different audiences and 'teasing out' information of relevance to specific groups in order to complement dissemination of the findings. In particular, summary reports and infographics were identified as critical to achieving wider engagement with individuals with less direct connection to urban forestry. Some projects achieved wider engagement with their project through workshops at the beginning and end of the project.

There were suggestions from interview and questionnaire respondents that the information i-Tree Eco provides could be expanded to widen the utility of projects. The most commonly called-for new information that could be included in future projects was health and social values for trees, but other measures were also suggested, including noise abatement value and the costs of tree management. Engagement with the public in the reviewed projects was generally low, but greater engagement with local communities could help raise understanding of urban trees and awareness of the benefits they provide. Other key factors that could create greater impact were having a high-level champion and ensuring project continuity through periods of organisation and staff change.

Conclusion

This multi-project impact evaluation of i-Tree Eco in GB aimed to help improve the impact from future i-Tree Eco projects. We explored what role i-Tree Eco has had in protecting and expanding the urban forest, what challenges it has faced and what opportunities are present for greater impact.

From our review of the reports, policies, and stakeholder opinions, we find that some i-Tree Eco projects have secured greater investment for management and support in local Tree and Woodland policies. Though only a few of the case study projects reviewed here have generated these impacts to date, many projects have realised wider impacts which have improved the capacity of stakeholders, both within and outside of local authorities, to make the case for investment and support for urban forests.

In future, engaging a wider range of stakeholders in project planning would help identify desired outcomes from i-Tree Eco projects and help overcome many of the challenges identified. Importantly projects should place greater consideration on actions needed after the reports have been produced to direct further engagement with key audiences. Opportunities to expand the use of i-Tree Eco with repeated surveys, improved translation of reports and dissemination could realise greater and broader impacts from i-Tree Eco projects.

References

Britt, C. & Johnston, M. (2008). Trees in Towns II. A new survey of urban trees in England and their condition and management. DCLG, London.

Davies, H. J., Doick, K. J., Hudson, M. D. & Schreckenberg, K. (2017). Challenges for tree officers to enhance the provision of regulating ecosystem services from urban forests. Environmental Research, 156(March), 97–107.

FC Scotland. (2015). WIAT Programme. Available online at: www.forestry.gov.uk/forestry/infd-5w2nfz

HM Government. (2018). A Green Future: Our 25 year plan to improve the environment. Defra, London.

Jaluzot, A. & Evison, S. (2016). i-Tree Eco Wrexham impact assessment 2013-2016. Resources for Change, Powys.

Meagher, L.R., Lyall, C. & Nutley, S. (2008). Flows of knowledge, expertise and influence: a method for assessing policy and practice impacts from social science research. Research Evaluation 17: 163-173.

NRW. (2016a). The state of natural resources report (SoNaRR): assessment of the sustainable management of natural resources. Natural Resources Wales, Aberystwyth.

Ordóñez, C. & Duinker, P. N. (2013). An analysis of urban forest management plans in Canada: Implications for urban forest management. Landscape and Urban Planning, 116: 36–47.

Scottish Government. (2016). Getting the best from our land: a land use strategy for scotland 2016 - 2021. Scottish Government, Edinburgh.

Soares, A. L., Rego, F. C., McPherson, E. G., Simpson, J. R., Peper, P. J. & Xiao, Q. (2011). Benefits and costs of street trees in Lisbon, Portugal. Urban Forestry and Urban Greening, 10(2), 69–78.

van der Jagt, A. P. N. & Lawrence, A. (2015). Trees and woods in Scottish towns: the role of local authorities. Forest Research, Farnham.

Wells, M.P. (2012). Using urban forest research in New York city. In: Johnston M, Percival G (eds) Trees, people and the built environment. Forestry Commission Research Report. Forestry Commission, Edinburgh.

Welsh Government (2015a). Woodlands for Wales action plan (2015-2020). Welsh Government, Cardiff.