Goals, barriers and enablers to realising biodiversity delivery through new development

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Introduction

- There has been a 19% decrease in species abundance in the UK since 1970.
- Urban biodiversity is increasingly recognised as critical in new development for its social, health and environmental benefits.
- England has strengthened policy beyond the mitigation hierarchy to require that all new development achieves a 10% increase in biodiversity, or Biodiversity Net Gain (BNG).
- However, the sector has struggled to deliver biodiverse developments in the past.
- This study aimed to identify the perceived barriers and enablers of delivering biodiversity in urban development and redevelopment and asked: What do these stakeholders feel is preventing effective delivery and what could potentially enable greater biodiversity delivery in these schemes?

Examples of biodiverse new development in a) Millennium Promenade, Bristol, b) Wapping Wharf, Bristol, c) Applewood, Stroud and d) Barking Riverside.

Methods

- Delphi analysis with stakeholders from planning and development policy and practice, including planners, ecologists, developers, landscape architects and green infrastructure experts from local and national government, private sector, housing associations and non-government organisations.
- Systematic search and umbrella literature review of 44 academic articles and 15 grey literature reports to identify the goals, barriers and enablers, supplemented with a workshop of partitioners.
- These were developed into a series of statements, presented via an online Delphi survey for participants to rate using the Likert scale: 'not important at all' to 'very important' and add explanatory comments and suggestions.
- Data were analysed based on the importance rating (median ≥ 5 indicates an important rating) and consensus (inter-quartile range ≤ 1.75 indicates consensus) and initial findings were presented to participants in an online workshop, followed by a discussion of areas of consensus and disagreement.
- Second round of the Delphi survey included the results from the first round and participants were invited to complete it again and the data reanalysed.
- Results were organised thematically and into quadrants (see below), those presented here are based on ratings from the second round of the Delphi, and focus on those perceived to be of high importance with a high degree of consensus.

High importance (median ≥ 5) and high consensus (inter-quartile range ≤ 1.75)	**High importance (median ≥ 5) and low consensus (inter-quartile range ≥ 1.75)**
Low importance (median ≤ 5) and high consensus (inter-quartile range ≤ 1.75)	**Low importance (median ≤ 5) and low consensus (inter-quartile range ≥ 1.75)**

Statements organised into a quadrant based on their importance and degree of consensus.

Results: Goals for biodiverse new developments

High importance and high consensus
- Comply with biodiversity net gain legislation
- Comply with planning policy
- Create a new habitat
- Enhance the biodiversity of the local area
- Maximise benefits from green infrastructure
- Reduce habitat loss

Results: Barriers (-) and enablers (+)

High importance and high consensus

Governance
- Lack of policy/regulatory enforcement
- Weak policy and/or regulation
- Lack of coordination between multiple governance bodies related to biodiversity delivery
+ Biodiversity targets mandated through legislation
+ Legislation and regulations that enforce biodiversity standards
+ Effective collaboration between governance bodies

Economic and financial
- The current model of development does not adequately incentivise biodiversity
+ Long-term funding model for maintenance agreed
+ Subsidies and financial incentives for biodiversity interventions
+ Where client or funder requires delivery of biodiversity and/or green building
+ Tools that calculate economic benefits of biodiversity for the area
+ Biodiversity interventions lead to higher property values

Knowledge, skills, information
- Lack of relevant knowledge and skills among other built environment professionals
- Difficult to change entrenched ways of working
- Uncertainty about specific requirements for delivering biodiversity
- Lack of access to ecological expertise
+ Access to ecological training for planning officers and developers
+ Where there is knowledge and experience of successful biodiversity interventions on other developments
+ Access to qualified ecologists
+ Having confidence in the quality of contractors delivering biodiversity enhancements
+ Sharing lessons learned from existing schemes to improve practice

Public perception and communication
+ Having local political support for biodiversity
+ Having strong support for biodiversity among the local population
+ Having a strong local champion for biodiversity in the local authority

Procedures and management
- Inappropriate maintenance or management of green infrastructure
- Planning tools and systems are not designed to prioritise biodiversity
+ Having consistency in the staff involved in, and championing biodiversity, through the development process
+ Having strategic leadership and management of biodiversity

Planning considerations
- Lack of awareness of the opportunities for co-benefits with other priorities (e.g. sustainable drainage, health and wellbeing)
- Requirements for access and use of space conflicts with biodiversity aims
- Need to deliver other planning objectives
+ Where co-benefits from biodiversity can be well integrated throughout the development through effective design
+ Opportunity to provide ecological connectivity

Conclusions

- Legislation emerged as the most important enabler. Stakeholders were cautiously optimistic about the impacts of biodiversity legislation.
- The lack of knowledge and skills emerged as the most important barrier. There is real concern within the sector about the lack of expertise available across the development stages, from assessment of ecological factors on site and design of schemes, to planning enforcement, to the delivery on the ground by construction and maintenance workers.
- There are important economic and financial enablers, but these are unlikely to be sufficient without stronger policy, enforcement and investment in skills and knowledge.
- There was disagreement among stakeholders as to the cost implications for developers, and the extent to which these are barriers.
- Ultimately, individual enablers are unlikely to facilitate biodiverse new development, but can act together to create the right conditions across the development process.

Further information on Biurbs: valuing biodiversity in multi-functional urban development and environment: https://www.biurbs.org. Research financially supported by the Natural and Environmental Research Council (grant number: NE/X002349/1).