Planning for urban green spaces

Underused or nature-rich urban green spaces (left); and 'unofficial' productive urban growing sites (right). Source: Authors 'own.

David Adams, Mike Hardman, Peter Larkham and Rob Lamond look at some of the recent urban green space initiatives designed to address climate change, biodiversity loss and the nature crisis

Nature in crisis

There are repeated and sustained calls for policies, funding initiatives and endeavours to address ongoing concerns regarding the impact of climate change, biodiversity loss and the general depletion of nature.[1] These are globally significant issues; and positive, sustainable planning interventions can play a significant role in creating better places for flora and fauna, people, and the wider environment. Such global ambitions expounded in the UN Sustainability Goals need locally implementable actions, and many policy measures and initiatives have been developed to resolve the 'nature crisis'.[2]

However, in the UK, the Environment Agency,[3] the State of Nature Partnership[4] and other significant bodies recognise that, despite a growing need for action, more concerted effort is needed to halt the decline in quality of natural environments and engender improved nature-friendly decision-making that can provide significant social, environmental and economic benefits. The 2023 *State of Nature* report (produced by a consortium of conservation and research organisations) reveals distressing levels of decline between 1970 and 2019 in plant distribution across England, Scotland, Wales and Northern Ireland.[5] As part of wider sustainability efforts, the report encourages that "the greening of urban spaces" should remain an important policy objective when taking decisions about housing and other infrastructure decisions. Indeed, in the recent General Election all the main political parties emphasised the important of this in their manifestos.

Designing, creating and managing urban green spaces are important in achieving such laudable and much-needed goals. And the recent expansion of urban greening interventions and green space provision is designed to encourage physical activity, leisure, and social exchange for all demographics.[6] Urban green spaces in England can provide an estimated £6.6 of "health, climate change and environmental benefits

every year".[7] Even being close to green space can bring economic benefit, too. Analysis of one million property sales in England and Wales between 2009 and 2016 revealed that living within 100 metres of a park, community garden, playing field and other spaces can boost house prices an average of £2,500.[8]

Despite these and other benefits, there is a turnover of green open sites; some of these, including school playing fields, are sold for development, raising UK government concerns that any loss of such public land should be mitigated by other improvements to sports provision.[9] Many urban green spaces are inadequately funded and susceptible to governmental pecuniary restrictions. For example, the local government bankruptcy situation continues to bite, and many local authorities in England and Wales could struggle to manage and resource green spaces under their jurisdiction. In February 2024, the Local Government Association found that 48% of local authorities say that they plan to significantly reduce the levels of funding devoted to maintaining parks and other green spaces.[10] Ultimately, green space and areas of nature and biodiversity in built-up areas becomes more restricted over time.

Inequality of access to green space remains an issue, too. The Environment, Food and Rural Affairs parliamentary committee noted that the most affluent 20% of urban wards have as much as five times more accessible green space than those in deprived areas.[11] A further example relates to access of green space for children. A recent *Guardian* investigation has found that children at the top 250 English private schools have more than 10 times as much outdoor space as those who go to state schools.[12] Hence difficult questions surround how to plan for equitable, inclusive and sustainable urban green spaces.

Urban green spaces and opportunities for growth

There remains exceptional opportunity to create innovative, scalable planned interventions that deliver more greening across the urban matrix. In the UK, legislation is now in place to encourage the natural habitat of new developments by ensuring that they contribute to a minimum 10% boost in terms of the quality of the local natural habitat.[13] This provides a direct means of conditioning and measuring improvements to biodiversity as part of the development process. Likewise, there are vibrant green networks working across spatial scales and sectors, including Social Farms & Gardens[14], with its support for city farming and community growing at a national level, to Sow the City[15] and Carrot City[16] which involves students, educators, housing providers and others to shape the built form and enable creative greening. At the sub-regional scale, the West Midlands Combined Authority's *Natural Environment Plan* encourages partner organisations to promote urban meadows, and biodiversity on under-used spaces, thereby supporting climate mitigation and adaptation.[17]

Yet, given the ongoing debates surround the provision of green, blue and grey infrastructure in cities, there are other possible options to help create more liveable and equitable cities. First, creating improved policy mechanisms, incentives and support for small domestic gardening, community gardens or other growing spaces as part of new development opportunities. There are many precedents for this, from micro to macro scales. This could include more efficient use of rooftops for planting

and recognising how gardens and the boundaries / corridors between them encourage flourishing flora and fauna. For example, a recent 2020 study in New York provided evidence that city-scale rooftop farming could produce 38% of the city's mixed green needs.[18] Although this does not necessarily account for all of the dietary desires of increasingly-diverse urban populations, this and similar examples (Figure 1) point to the potential growing capacity of intensive roof-top farming to meet food demands.

Figure 1. Rooftop gardening in action. Source: Wikimedia.

Much promising work exists around the potential of repurposing those underused or "stalled" informal green spaces that exist in many urban contexts.[19] These include sites such as vacant land, disused car parks, along transportation corridors, abandoned development proposals, or under-utilised open spaces, that could be suitable for various forms of productive urban growing. Yet there is also scope to develop stronger legal, economic and policy mechanisms that encourage repurposing of those relatively underexplored sites. There are other options, too. For example, exploring the biodiversity and nature potential within and at the edge of cities, in ways that foster stronger human-nature connections, while providing access to local urban food networks.

Although the spectre of green gentrification looms large in these discussions, bringing nature closer to the sites where most people live, work and socialise can yield positive socio-economic benefits among diverse urban publics. For example, the Wildlife Trust's Wild at Heart programme, designed to connect older people with the natural environment in Sheffield and Rotherham, helped boost physical and mental wellbeing, while also reducing NHS inpatient admissions, accident and emergency attendances and outpatient appointments and hence resulting in significant financial saving.[20] Extending community orchard schemes offer further options to improve human connections with green spaces, particularly in new-build developments at the edge of settlements, while maintaining a productive urban-rural interface.[21] A range of organisations already support these and similar

approaches. These include Incredible Edible, founded in Todmorden, West Yorkshire, helping to stimulate an international network of community gardens, and Manchester's City of Trees, which has planted more than 140 orchards, and supported the extensive planting of street trees and hedgerows.[22] Similarly, in Birmingham, initiatives such as Martineau Gardens, close to the city centre, encourage an appreciation of urban food growing, while enhancing biodiversity and sustainability.[23]

Green and healthy fringe spaces

Delivering more housing remains a pressing national and local issue and was a central theme in the recent UK general Election. The Local Government Association argues that England needs 250,000 more houses a year, nearly double the 130,000 currently being built.[24] A target closer to 300,000 is commonly cited as a more realistic figure; and large-scale strategic growth, through a new generation of New Towns is being mooted as part of the solution.[25] But building more housing alone cannot deliver wider benefits. More new development is also often seen by local communities as a threat to the character and appearance of areas. Although recent legislation should ensure a change in landscaping practices, new-build housing developments in and around urban areas are often characterised by large areas of hard landscaping and impermeable boundary features. While these often provide flexible live-work options and private sanctuaries away from the real and imagined dangers of urban life, such estates are routinely criticised for promoting sedentary, unhealthy lifestyles, and a general underappreciation of possible environmental features.[26] But better design could deal with these problems and reduce NIMBY anti-development responses that stymie housebuilding.[27]

Alongside the need for suitable, well-maintained infrastructure (roads, doctors, schools, shops, and other community facilities), improved landscaping and food growing need to feature strongly in political and public debate around managing the requirements for new development. Emboldened policy initiatives, shifting public attitudes and strong civic leadership are key. Improved building types, estate layouts, densities and locations are all important. Inspiration can be taken from an array of different green champions.

Elsewhere, our recent research[28] points to possible options for change, carrying the potential of scaling up innovative urban greening. Instead of expanses of impervious hard surfaces, vegetation could provide permeable options; a wider roll-out of green roofs could be encouraged on flat-roofed structures, such as garages, parking and / or common areas. Where feasible, timber, concrete and wooden fences could be replaced by hedges using native, fruit-bearing mixed species shrubs and / or trees, encouraging the movement of animals and invertebrates, while improving the nutrient cycle. These healthy hedgerows can provide shelter for wildlife, while protecting the soil and contributing to flood management. This could include productive edible hedges with sloes, elders, damsons, apples and similar species. New hedgerows connect with existing ones, while rear garden hedges combine to create new green networks,
(Figure 2).

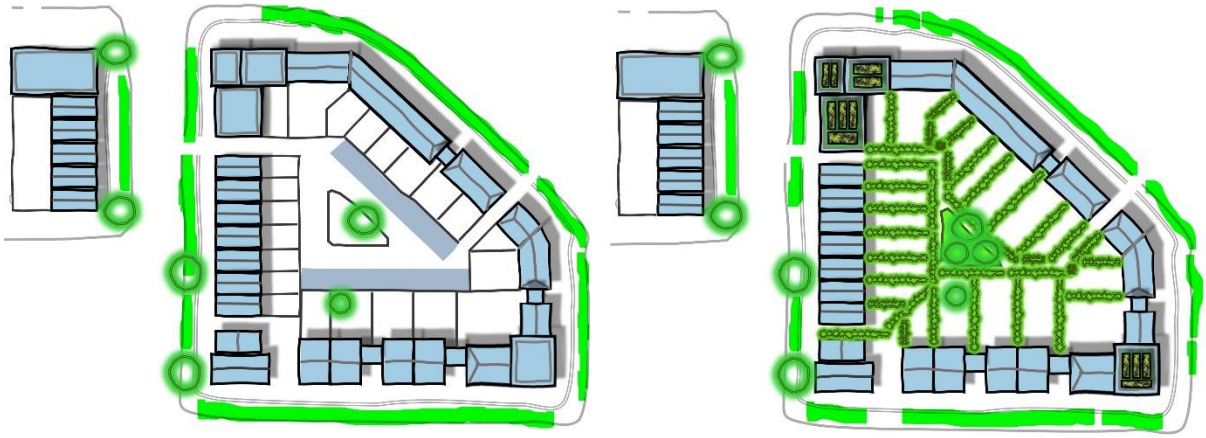

Figure 2. A 'typical' residential plot and boundary layout (left). Hedges, shrubs, trees and rooftop growing spaces to help structure residential schemes (right). Source: Authors' own.

More ambitiously, new developments might centre around working farms and/or inclusive local growing spaces. There is precedent here, too. These ambitions resonate with earlier suburban ideals developed by British architects, consultant planners and professional officers for housing to be arranged around communal productive green spaces.[29] Recognising the significance of the countryside spaces and natural systems is important here, rather than focusing on the layout of buildings, roads, and infrastructure, and the displacement or management of protected/marketable species. Such thinking would help to build sustainable and resilient food networks across productive residential schemes, embedding food systems planning into new and existing (sub)urban landscapes.

New layouts could centre on farm production and/or gardening activity, with varied land uses, including fields and infrastructure set aside for growing. Early responsibility for designs could form part of the landscape plan and contract of works agreed by the developer, landowner, local authority and relevant contractors. Other options could include developer contributions and / or service charges for planting, installation and aftercare arrangements. Service charges could be paid by residents to those property management companies that often maintain communal areas and shared services on new properties. There is also an opportunity here to partner with organisations, such as community interest companies and social enterprises (see, for example, Manchester Urban Diggers[30]), who could coordinate the day-to-day operations of such spaces.

This holds the obvious potential for the creation of sustainably designed buildings, fostering a sense of ownership and empowerment among residents in maintaining these green spaces. Underpinned by effective planning frameworks, political will and public support, these productive schemes would be capable of delivering environmental public goods, these approaches hold the potential to serve local and wider markets. In so doing, this would reduce reliance on global supply chains, while boosting resilience to unexpected events, food price shocks and socio-economic / political disruptions (Figure 3). They would become embedded in wider initiatives to identify suitable official and unsanctioned growing spaces. This could involve an analysis of existing urban sites capable of supporting agricultural production (1). The building of new edge-of-settlement sites (2); these should have the capacity to grow food and support the main settlement, while foodstuffs could be 'exported' to nearby

urban areas and beyond; and this could result in a network of inter-connected food-growing urban areas (3).

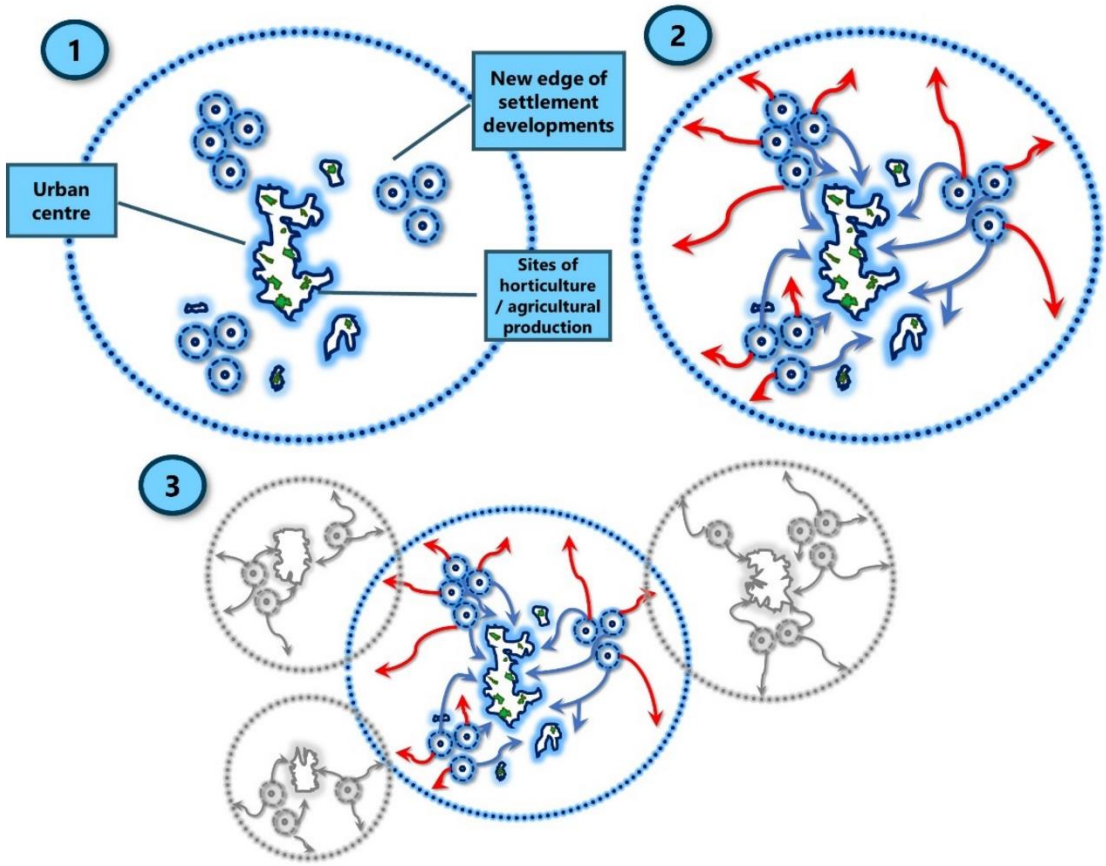

Figure 3. The possible scaling "up" and "out" of agriculture-focused residential developments. Source: Authors' own.

Conclusions

The kind of model discussed here may not necessarily result in the efficient delivery of housing to satisfy the needs of politicians, investors, developers and some potential occupiers. Some residents may not wish to be associated with food production and the potentially unsettling sights, smells and sounds of agriculture. Potential investors may also be discouraged by the lifestyles promoted in such models; and some developers would be reluctant because it diverges too far from established modes of practice and may therefore risk profitability. Inventive, cooperative ownership models may also be needed that help maintain the ecologically-minded ethos.

Arguably the most politically palatable and expedient model could involve the use of stronger planning instruments that built around a stronger community buy-in, and the design and application of criteria can be created relating to scale, contribution to housing need, local support, commitment to quality, and consideration of infrastructure. Examples of such developments do exist elsewhere in parts of the US, northern Europe and elsewhere. There is still much to learn from urban food-growing schemes and green spaces embedded into residential designs.

There are wider messages here. Planning has a vital role to address the challenges stemming from shifting climates, and the loss of nature. The initiatives outlined in this paper should give hope. Building sustainable homes, bringing together commercial property, the public realm and community assets that build and sustain authentic places. In particular, the final option discussed here presents another opportunity. The design briefly outlined here and discussed at length elsewhere would maintain and protect biodiversity, establish a deeper human connection with local history, culture and ecology, and encourage forms of residential development centred around existing and/or improved agricultural initiatives.

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