

This is a repository copy of *The urban bioeconomy: extracting value from the ecological and biophysical*.

White Rose Research Online URL for this paper: https://eprints.whiterose.ac.uk/163782/

Version: Supplemental Material

Article:

Taylor Buck, N. and While, A. (2020) The urban bioeconomy: extracting value from the ecological and biophysical. Journal of Environmental Planning and Management, 64 (2). pp. 182-201. ISSN 0964-0568

https://doi.org/10.1080/09640568.2020.1763931

This is an Accepted Manuscript of an article published by Taylor & Francis in Journal of Environmental Planning and Management on 13 July 2020, available online: http://www.tandfonline.com/10.1080/09640568.2020.1763931

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk https://eprints.whiterose.ac.uk/

	Туре	Description	Consequence for Urban Environment
(i). Value from waste	Bioprospecting	Extracting resources from waste	Shift towards circular economies with associated decrease in resource use/increase in resilience
	Biological processes	Degradation of plastic wastes	Reduction in landfill, increased amenity benefits, improved health of green and blue infrastructure
(ii). Harnessing biological assets for economic value	Sequestration	Absorbing carbon dioxide from the atmosphere	Increased role for urban soil cover with concomitant increase in capacity for food production
	Biomimicry	Taking design principles from nature for improved efficiency and resilience	Design and management of urban infrastructure and environmentally sustainable buildings. Influence on governance structures and other social innovations
	Health & Ecological value	Improving air quality, air temperatures, and reducing flooding impacts	Reduced healthcare costs; reduced hard infrastructure costs for flood protection; improved quality of life for citizens
	Biological processes	 i. Growing biomass for food and energy ii. Extracting resources from waste iii. Bioremediation of contaminated land 	 i. Increased energy and food resilience ii. Shift towards circular economies with associated decrease in resource use/increase in resilience iii. Increased flexibility of land use for e.g. food production
(iii). Controlled / Artificial Environments	Urban agriculture	Creation of biophysical and ecological assets	Increased food resilience

 Table 2. Three example spheres of latent potential for bioeconomic exploitation in the urban bioeconomy