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ICSU promotes a systems approach to urban health and wellbeing

Cities are now the predominant habitat for humans and therefore our health and wellbeing needs to be provided for and maintained within urban areas. The infrastructure of cities fulfills many functions in delivering the goods and services people need to live healthy lives. The food and water we consume, the products and technology we use, the places in which we work, live and socialize, the opportunities for education, innovation and employment – all aspects of human life are catered for by the provisioning, regulation, habitat, and cultural services of the city, within the context of the global ecosystem^{1,2,3}.

At this time, urban sustainability is challenging because of the difficulty people have in adapting to changing environments. Urban systems play a significant role in achieving the Sustainable Development Goals (SDG) set out by the United Nations' 2030 Agenda for Sustainable Development, which include such aims as clean water and sanitation and responsible production and consumption. Some difficulties confronting city planners, officials and residents include; increasing risks of communicable and non-communicable diseases, pollution, migration, safety and security and making adjustments for ageing urban societies^{4,5}. Although improved healthcare and sanitation have generally reduced mortality rates and poverty⁶, health

and income inequalities have increased. Health concerns in high and low-income countries alike have shifted towards so-called lifestyle diseases, caused by changing eating habits and a lack of physical activity, leading to hypertension and obesity, heart diseases, stroke, certain cancers and diabetes⁷.

Positive health effects are brought by access to urban green space and biodiversity^{8,9}. Apart from providing space for physical and mental recreation and socialization, a lack of green space means an absence of certain microbiota (such as bacteria, fungi, protozoa, and helminths, commonly found on animals, plants, soil and air). A lack of these weakens the immune system and increases susceptibility to chronic inflammatory and cardiovascular diseases^{10,11}.

The connection to and reliance of people upon ecosystems is particularly clear in urban areas. Ecosystem health disorders, such as biorhythm disorders, disturbance of the immune system, allergies, antibiotic resistance, stress, depression, and socially determined health disorders are occurring as a result of being systemically disconnected from ecosystems^{12,13}.

Development leading to environmental destruction or the erosion of human health should not be an option. Therefore, the "Urban Health and Wellbeing: a Systems Approach"

programme of the International Council of Science (ICSU), co-sponsored by the United Nations University (UNU) and the Interacademy Medical Panel (IAMP), was established to promote a new system of managing urban health and wellbeing. The programme is a 10-year, interdisciplinary research initiative which promotes the science of urban systems for optimizing health and wellbeing. It will foster dialogue and discourse with stakeholders and across scientific disciplines for the collective improvement of knowledge on urban health and wellbeing for sustainable development.

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REFERENCES

1. McPhearson, T., et al. *AMBIO* 43(4), 502–515 (2014). doi.org/10.1007/s13280-014-0509-8
2. Gómez-Baggethun, E., et al. In *Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities*, ed. Elmqvist, T., et al., 175–251 (2013). Dordrecht: Springer Netherlands. doi:10.1007/978-94-007-7088-1
3. TEEB — The Economics of Ecosystems and Biodiversity (2011). TEEB Manual for Cities: Ecosystem Services in Urban Management. UNEP and the European Union.
4. Leon, D. *Int. J. Epidemiology* 37(2), 255–259 (2008).
5. ICSU (2011) Report of the ICSU Planning Group on Health and Wellbeing in the Changing Urban Environment: a Systems Analysis Approach. International Council for Science, Paris.
6. WHO (2015) Health in 2015: from MDGs, Millennium Development Goals to SDGs, Sustainable Development Goals. World Health Organization, Switzerland.
7. Mendez, M. A., et al. *J. Agric. Dev. Econ.* 1(2), 220–241 (2004).
8. Vollmer, D., et al. *Global Environmental Change* 23(6), 1542–1555 (2013). doi:10.1016/j.gloenvcha.2013.10.001
9. Shackleton, S., et al. *Landscape Urban Plan.* 136, 76–86 (2015). doi:10.1016/j.landurbplan.2014.12.004
10. Rook, G. A. W., et al. *Evol. Med. Public Health* 2013(1), 46–64 (2013).
11. Rook, G. A. W., et al. *Clin. Exp. Immunol.* 177(1), 1–12 (2014).
12. Wahlqvist, M. L., et al. *J. Med. Sci.* 5, 157–164 (2006).
13. Wahlqvist, M. L. *Asia Pac. J. Clin. Nutr.* 23(1), 1–15 (2014).

