

Are science metrics beneficial to sustainability? A standpoint of disciplines with a societal impact

Alexandru-Ionuț PETRIȘOR; Oana-Ramona ILOVAN

<https://doi.org/10.47743/pesd2023171009>

Abstract

Both sustainability and planning require interdisciplinary approaches. Moreover, an interdisciplinary approach is required to the sciences contributing to planning for sustainable local communities. Nevertheless, current criteria governing science, particularly career promotion and research funding, overemphasize the contribution of research to scientific progress and economic growth, disregarding its societal impact. The new European framework research program and Romanian strategy for research promise a change. In order to meet this need, the current study aims to respond to this challenge by analyzing two examples of disciplines contributing to sustainable local development, yet disadvantaged by the previous strategies. We analyzed qualitatively urban/landscape ecology and humanistic geography based on their presence and representation in data from the Romanian Classification of Occupations, criteria used in academic and research career advancement, and funding programs, and phrased some recommendations for helping the development of similar research areas in the future.

Keywords: *humanistic geography, landscape ecology, local sustainability, research measurement, role of science, urban ecology*

References:

1. Banini, T.; Ilovan, O.R. (2021) Introduction: Dealing with Territorial/Place Identity Representations. In *Representing Place/Territorial Identity in Europe. Discourses, Images, and Practices*; Banini, T.; Ilovan, O.R. Eds.; Cham: Springer, 1-19.
https://doi.org/10.1007/978-3-030-66766-5_1

Present Environment and Sustainable Development

Volume 17 Issue no 1 / 2022 TSSN 1842-5971

2. Breuste, J. (2019) *Ecocities – SMART approaches for a sustainable future? ECOSMART – 2019: International Conference Environment at a Crossroads: SMART approaches for a sustainable future. University of Bucharest: Bucharest, Romania.*
3. Bugge, H.C.; Watters L. (2003) *A Perspective on Sustainable Development after Johannesburg on the Fifteenth Anniversary of Our Common Future: An Interview with Gro Harlem Brundtland. Georgetown International Environmental Law Review, 15, 359-366.*
4. Buttimer, A.; Seamon, D. (1980) *The Human Experience of Space and Place. St Martin's Press: New York.*
5. Clifford, N.; French, S.; Valentine, G. (eds.) (2012) *Key Methods in Geography, second edition. Sage: London.*
6. Delyser, D.; Aitken, S.C.; Herbert, S.; Crang, M.; McDowell, L. (2010) *Introduction: Engaging Qualitative Geography. In The SAGE Handbook of Qualitative Geography; DeLyser, D., Herbert, S., Aitken, S., Crang, M., McDowell, L. Eds.; Sage: London, California, New Delhi, Singapore, 1-18.*
7. Fayomi, O.S.I.; Okokpujie, I.P.; Udo, M. (2018) *The Role of Research in Attaining Sustainable Development Goals. IOP Conference Series: Materials Science and Engineering, 413, 012002. <https://doi.org/10.1088/1757-899X/413/1/012002>*
8. *European Commission (2020) Horizon Europe - Investing to shape our future. Available online: https://research-and-innovation.ec.europa.eu/document/download/9224c3b4-f529-4b48-b21b-879c442002a2_en?filename=ec_rtd_he-investing-to-shape-our-future.pdf (accessed on 03/12/2022).*
9. Entrikin, J.N. (1991) *The Betweenness of Place: Towards a Geography of Modernity. MD: Johns Hopkins University Press: Baltimore,*
10. Entrikin, J.N. (2018) *Geography of Experience: Place and Region. In Handbook on the Geographies of Regions and Territories; Paasi, A., Harrison, J., Jones, M. Eds.; Cheltenham, UK, Northampton, MA, USA: Edward Elgar, 44-56 pp. <https://doi.org/10.4337/9781785365805.00012>*
11. Feller, I.; Stern, P.C. (2007) *A Strategy for Assessing Science: Behavioral and Social Research on Aging. National Academies Press: Washington, DC, US; pp. 67-94.*
12. Hawkes J. (2001) *The fourth pillar of sustainability: Culture's essential role in public planning. Cultural Development Network: Melbourne, Australia.*
13. Husbans Fealing, K.; Lane, J. I.; King, J.L.; Johnson, S.R. (2017) *Measuring the Economic Value of Research. The Case of Food Safety. Cambridge University Press: Cambridge, UK. <https://doi.org/10.1017/9781316671788>*
14. Ilovan, O.R.; Doroftei, I. (eds.) (2017) *Qualitative Research in Regional Geography. A Methodological Approach; Presa Universitară Clujeană: Cluj-Napoca, 249 pp. http://doi.org/10.23740/QUAL_METHODS2017*

Present Environment and Sustainable Development

Volume 17 Issue no 1 / 2022 TCSN 1842-5971

15. Ilovan, O.R.; Markuszewska, I. (2022) *Introduction: Place Attachment – Theory and Practice*. In *Preserving and Constructing Place Attachment in Europe*; O.-R. Ilovan, I. Markuszewska Eds.; *GeoJournal Library* 131. Cham: Springer.
https://doi.org/10.1007/978-3-031-09775-1_1
16. Ilovan, O.R.; Muntean, A.D. (eds.) (2021) *Geografia Dezvoltării. Abordări centrate pe om în contextul românesc [Geography of Development. Human-centred Approaches in the Romanian Context]*; *Presa Universitară Clujeană: Cluj-Napoca*, 9-14 pp.
<https://doi.org/10.52257/9786063712050>
17. Ionașcu, G.; Sârbu, C. N.; Manea, G.; Petrișor, A.I. (2019) *From ecology & spatial planning to urban & territorial ecology*. *Oltenia. Studii și comunicări. Științele Naturii*, 35(2), 214-220.
18. Lawrence, P.A. (2007) *The Mismeasurement of Science*. *Current Biology*, 17(15), R583-R585. <https://doi.org/10.1016/j.cub.2007.06.014>
19. Lukkarinen, M. (2005) *Community development, local economic development and the social economy*. *Community Development Journal*, 40(4), 419-424.
<https://doi.org/10.1093/cdi/bsi086>
20. Markuszewska, I.; Ilovan, O.R. (2022) *Conclusions: Reshaping place attachment research*. In *Preserving and Constructing Place Attachment in Europe*; Ilovan, O.R., Markuszewska, I. Eds.; Springer: *GeoJournal Library*, vol. 131, pp. 345-366.
https://doi.org/10.1007/978-3-031-09775-1_20
21. Milán-García, J.; Uribe-Toril, J.; Ruiz-Real, J.L.; de Pablo Valenciano, J. (2019) *Sustainable Local Development: An Overview of the State of Knowledge*. *Resources*, 8, 31. <https://doi.org/10.3390/resources8010031>
22. *Ministry of Research, Innovation and Digitalization of Romania - MRID* (2021) *Framework document on the National Strategy for Research, Innovation and Smart Specialization 2022-2027 (in Romanian)*. Available online:
<https://www.research.gov.ro/uploads/comunicate/2022/strategia-na-ional-de-cercetare-inovare-i-specializare-inteligent-2022-2027.pdf> (accessed on 03/12/2022).
23. Nowak, M.J.; Petrișor, A.I.; Mitrea A; Filepné Kovács, K.; Lukstina, G.; Jürgenson, E.; Ladzińska, Z.; Simeonova, V.; Lozyskyy, R.; Rezac, V.; Pantyley, V.; Praneviciene, B.; Fakeyeva, L.; Mickiewicz, B.; Blaszkę, M. (2022) *The Role of Spatial Plans Adopted at the Local Level in the Spatial Planning Systems of Central and Eastern European Countries*. *Land*, 11(9), 1599. <https://doi.org/10.3390/land11091599>
24. Okokpuije, I.P.; Fayomi, O.S.I.; Leramo, R.O. (2018) *The Role of Research in Economic Development*. *IOP Conference Series: Materials Science and Engineering*, 413, 012060. <https://doi.org/10.1088/1757-899X/413/1/012060>
25. Petrișor, A.I. (2010) *The Theory and Practice of Urban and Spatial Planning in Romania: Education, Laws, Actors, Procedures, Documents, Plans, and Spatial Organization. A Multiscale Analysis*. *Serbian Architectural Journal*, 2(2), 139-154.
<https://doi.org/10.5937/SAJ1002139P>

Present Environment and Sustainable Development

Volume 17 Issue no 1 / 2022 TSSN 1842-5971

26. Petrișor, A.I. (2013) Multi-, trans- and inter-disciplinarity, essential conditions for the sustainable development of human habitat. *Urbanism Architecture Constructions*, 4(2), 43-50.
27. Petrișor, A.I. (2017) Joint ecological, geographical and planning vision of the components of urban socio-ecological complexes. *Lucrările seminarului geografic Dimitrie Cantemir*, 45, 179-190. <https://doi.org/10.15551%2F1sgdc.v45i2.1162>
28. Petrișor, A.I.; Petrișor, L.E. (2013) The shifting relationship between urban and spatial planning and the protection of the environment: Romania as a case study. *Present Environment and Sustainable Development*, 7(1), 268-276.
29. Petrișor, A.I.; Petrișor, L.E. (2014) 25 years of sustainability. A critical analysis. *Present Environment and Sustainable Development*, 8(1), 175-190. <https://doi.org/10.2478/pesd-2014-0016>
30. Pickett, S.T.A.; Cadenasso, M.L.; Childers, D.L.; McDonnell, M.J.; Zhou W. (2016) Evolution and future of urban ecological science: ecology in, of, and for the city. *Ecosystem Health and Sustainability*, 2(7), e01229. <https://doi.org/10.1002/ehs2.1229>
31. Relph, E. (1976) *Place and Placelessness*. Pion: London.
32. Sandu, S. (2012) Smart specialization concept and the status of its implementation in Romania. *Procedia Economics and Finance*, 3, 236-242. [https://doi.org/10.1016/S2212-5671\(12\)00146-3](https://doi.org/10.1016/S2212-5671(12)00146-3)
33. Shrivastava, P.; Stafford Smith, M.; O'Brien, K.; Zsolnai, L. (2020) Transforming Sustainability Science to Generate Positive Social and Environmental Change Globally. *One Earth*, 2(4), 329-340. <https://doi.org/10.1016/j.oneear.2020.04.010>
34. Tansley, A.G. (1935) The use and abuse of vegetational concepts and terms. *Ecology*, 16(2), 284-307. <https://doi.org/10.2307/1930070>
35. Torres-Pruñonosa, J.; Raya, J. M.; Dopeso-Fernández, R. (2020) The Economic and Social Value of Science and Technology Parks. The Case of Tecnocampus. *Frontiers in Psychology*, 11, 632600. <https://doi.org/10.3389/fpsyg.2020.632600>
36. Tuan, Y.F. (1974) *Topophilia: A Study of Environmental Perception, Attitudes and Values*. Prentice Hall: Englewood Cliffs, NJ.
37. Tuan, Y.F. (1977) *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press.
38. United Nations Environment Programme – UNEP (2012) *Rio Declaration on Environment and Development*, Available online: <http://www.unep.org/Documents.Multilingual/Default.asp?documentID=78&articleID=1163> (accessed on 03/12/2022).
39. Walbridge, M.R. (1997) *Urban Ecosystems*. *Urban Ecosystems*, 1(1), 1-2. <https://doi.org/10.1023/A:1014307007437>

Present Environment and Sustainable Development

Volume 17 Issue no 1 / 2022 TSSN 1842-5971

40. Wu, J. (2008) *Making the Case for Landscape Ecology. An Effective Approach to Urban Sustainability*. *Landscape Journal*, 27, 41-50.
<https://doi.org/10.3368/lj.27.1.41>
41. Wu, J. (2014) *Urban ecology and sustainability: The state-of-the-science and future directions*. *Landscape and Urban Planning*, 125, 209-221.
<https://doi.org/10.1016/j.landurbplan.2014.01.018>
42. Wu, J.; He, C.; Huang G.; Yu D. (2013) *Urban Landscape Ecology: Past, Present, and Future*. In *Landscape Ecology for Sustainable Environment and Culture*; Fu B., Jones K. B. Eds.; Springer: Dordrecht, Germany, pp. 37-53. https://doi.org/10.1007/978-94-007-6530-6_3
43. Zabalawi, I.; Kordahji, H.; Khanafer, K. (2022) *Research, Development, and Local Impact: A Case Study of the Australian College of Kuwait*. In *Higher Education in the Arab World: Research and Development*; Badran, A.; Baydoun, E.; Hillman, J. R. Eds.; Springer: Cham, Switzerland, pp. 215-235. https://doi.org/10.1007/978-3-030-80122-9_13