

Probing Scientific Literature Metadata in Search for Climate Services in African Cities

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Abstract : In the current context of climate change, supporting national and local stakeholders to make climate-smart decisions is necessary but still underdeveloped in many countries. To overcome this problem, the Global Frameworks for Climate Services (GFCS), implemented under the aegis of the United Nations in 2012, has initiated many programs in different countries. The GFCS contributes to the development of Climate Services, an instrument based on the production and transfer of scientific climate knowledge for specific users such as citizens, urban planning actors, or agricultural professionals. As cities concentrate on economic, social and environmental issues that make them more vulnerable to climate change, the New Urban Agenda (NUA), adopted at Habitat III in October 2016, highlights the importance of paying particular attention to disaster risk management, climate and environmental sustainability and urban resilience. In order to support the implementation of the NUA, the World Meteorological Organization (WMO) has identified the urban dimension as one of its priorities and has proposed a new tool, the Integrated Urban Services (IUS), for more sustainable and resilient cities. In the southern countries, there's a lack of development of climate services, which can be partially explained by problems related to their economic financing. In addition, it is often difficult to make climate change a priority in urban planning, given the more traditional urban challenges these countries face, such as massive poverty, high population growth, etc. Climate services and Integrated Urban Services, particularly in African cities, are expected to contribute to the sustainable development of cities. These tools will help promoting the acquisition of meteorological and socio-ecological data on their transformations, encouraging coordination between national or local institutions providing various sectoral urban services, and should contribute to the achievement of the objectives defined by the United Nations Framework Convention on Climate Change (UNFCCC) or the Paris Agreement, and the Sustainable Development Goals. To assess the state of the art on these various points, the Web of Science metadatabase is queried. With a query combining the keywords "climate*" and "urban*", more than 24,000 articles are identified, source of more than 40,000 distinct keywords (but including synonyms and acronyms) which finely mesh the conceptual field of research. The occurrence of one or more names of the 514 African cities of more than 100,000 inhabitants or countries, reduces this base to a smaller corpus of about 1410 articles (2990 keywords). 41 countries and 136 African cities are cited. The lexicometric analysis of the metadata of the articles and the analysis of the structural indicators (various centralities) of the networks induced by the co-occurrence of expressions related more specifically to climate services show the development potential of these services, identify the gaps which remain to be filled for their implementation and allow to compare the diversity of national and regional situations with regard to these services.

Keywords : African cities, climate change, climate services, integrated urban services, lexicometry, networks, urban planning, web of science

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