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1) Reference of your publication: Artmann, M.; Kohler, M.; Meinel, G.; Gan, J.;

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2) Hyperlink to the publication:

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3) Abstract:

In contrast to the ongoing worldwide uncontrolled expansion of urban development resulting in sprawled cities, compact cities have been argued by planners and researchers to be the more sustainable urban form. However, in compact cities, it has been shown that a low proportion of green spaces jeopardizes the sufficient supply of urban ecosystem services. This suggests that there remains a deficiency in clear visions for operationalizing compact and green cities. To remediate this, this paper introduces a systemic conceptual framework for compact and green cities by combining the concepts of smart growth and green infrastructure. The indicator-based, smart-compact-green city framework includes two aspects: 1) smart compact cities (considering the need to limit urban sprawl through smart growth) and 2) smart green cities (reflecting the preservation and (re-)development of urban green infrastructure). The paper suggests that there is the need to balance these two aspects to develop a systemic approach towards smart-compact-green cities. A hierarchical target system grounded on four characters for smart compact and smart green cities is developed. Smart-compact-green cities can be characterized through a 1) smart environment of compact and green cities, 2) smart multifunctionality of compact and green cities (economic, social, environmental), 3) smart government for compact and green cities and 4) smart governance for compact and green cities. The characters comprise twelve factors defined by 39 indicators for smart compact cities and 44 indicators for smart green cities, respectively. The systemic framework can support researchers and practitioners to develop visions of how existing or future cities can approach smart-compact-green cities in mainstreaming the ecology of and for cities by



better understanding the complexity of urban systems and providing a basis for a systematic spatial monitoring.

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