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Technology Options for Agriculture in the Rural-Urban Continuum: The Sustainability of three Good Practices

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Abstract

Sustainability is back on the world development agenda since the United Nations discuss the adoption of Sustainable Development Goals for the post-2015 era. Indicators to monitor development for sustainability at the global or national level have already been developed in the past. But little research has been conducted to develop indicators at the innovation level that help decide which agricultural innovation would be the more sustainable to promote or adopt in a developing country context. To address this question, this study presents a way to assess the sustainability of three agricultural innovations that are suitable specifically for poor and vulnerable people in urban and rural areas, respectively. In particular, the study examined ecological sanitation in rural areas of North Bihar, India, riverbed farming in the Terai region of Nepal, and vegetable production in sacks that is suitable in urban areas. The underlying data was collected from experts of the respective innovations based on a questionnaire that was sent out by email. More than 300 experts were contacted in three “calls for application” of the SATNET Asia project. Experts were asked to provide information on selected criteria determining the environmental sustainability, economic development, social inclusion, as well as technical sustainability of an innovation. Overall, thirty one innovations were described by experts of which three were selected for this study because of their relevance for rural and urban settings. Field visits were conducted to comprehensively validate the information provided by experts for two of the three innovations. Composite sustainability indicators were calculated based on the SATNET Asia analytical framework. Results are presented graphically and compared with reference technologies. The analytical framework is discussed in terms of its applicability to agricultural innovations with a data scarce background. Possibilities to accommodate other criteria like impacts on migration, health, and nutrition are suggested.

Keywords: Adoption, composite sustainability indicator, decision making, sustainable development, technology