

**Sustainability Performance of Urban Rooftop Agriculture:  
A Comparative Analysis of South and South East Asia**

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Humanity in the 21st century deliberately evolves as urban species with pressing issue of food security during a time where available fertile land is minimal. Rooftop gardens referring to the cultivation to obtain fresh produce on the top of buildings within the major cities, and are gaining popularity at such pace as they have the potential to meet the growing demand of nutritional needs in cities and to enhance the ecosystem services along with the social capital. Yet, there is no adequate literature available to elaborate how cities can achieve sustainability via urban rooftop agriculture. The primary objective of this study was to conduct an in-depth analysis on how South Asian and South East Asian countries have achieved urban sustainability through rooftop farming interventions. Therefore, three dimensions of sustainability were assessed under thirteen parameters through a systematic review of thirty selected articles from Science direct, Elsevier and Academia Education digital databases. Selected literature comprised of studies from Bangladesh, India and Nepal representing South Asia, and Malaysia, Singapore and Vietnam representing South East Asia. Regardless of the region or the country, findings supports that urban rooftop gardens promotes more environmentalism aspects signifying the reduction of carbon foot print followed by food security cum self-reliance and climate change adaptation. Overall sustainability was best achieved by India showing the highest achievement in all three dimensions. Environmentalism accounted for 43% of overall rooftop sustainability providing a strong sense of environmental security for both human and natural environment. The way forward promoting rooftop farming in cities need outreach programs, capacity development and policy interventions, and nations must foster research partnerships, collaborations and investments. Moreover, it is essential to have a productive mechanism to disseminate the regional success stories and best practices among local urban community to transform their rooftops to more conducive communal spaces.

**Keywords:** Sustainability performance, Urban rooftop agriculture, Comparative study, South Asia, South East Asia