



International Research Journal of Research in Environmental Science and Toxicology Vol. 12(2) pp. 1-2, January, 2023
Available online <https://www.interestjournals.org/research-environmental-science-toxicology/archive.html>
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Short Communication

Role of Rooftop Gardening in Climate Adaptation and Food Security in Nepal

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Received: 08-Jun-2020, Manuscript No. JREST-23-13009; **Editor assigned:** 11-Jun-2020, PreQC No. JREST-23-13009 (PQ); **Reviewed:** 25-Jun-2020, QC No. JREST-23-13009; **Revised:** 31-Jan-2023, Manuscript No JREST-23-13009 (R); **Published:** 28-Feb-2023, DOI: 10.14303/2315-5698.2023.20

Abstract

This paper presents the key issues and roles of rooftop gardening (which is known as Kausi Kheti in Nepalese language) particularly in climate adaptation and food security based on the scoping review. Rooftop gardening is comparatively new farming technique/approach, especially, in urban areas that has gained popularity and increased attention recently. Because of rapid urbanization process and land defragmentation and splitting within the households, the agricultural lands for backyard farming have been drastically reduced, hence, urban people must rely on local and wholesale markets for required vegetables to fulfill the food and nutrition. Shrinkage of agricultural lands for cultivation has direct impact on food security and zero hunger, the targets of global development agenda 2030.

Keywords: Kausi Kheti, Scoping review, Zero hunger, Rooftop gardening

INTRODUCTION

The main issue in the urban areas now is lack of cultivable lands for farming and at the same time lack of interest of youths and women to succeed the farming, which leads to rely on the local and wholesale markets for daily consumable food and vegetables. One of the reasons for this is low and insignificant agricultural growth rates in past 2 decades. Furthermore, mostly aging population are engaged in this sector, thus, it is crucial to attract and engage youths to agriculture with secured future in agriculture for agricultural transformation (Thapa et al., 2020).

For that, agriculture needs to be innovative, attractive and profitable with better income and benefits. Youths have innovative skills, adaptability and high aptitude of taking risks. Moreover, unavailability of inputs and resources at the local markets are additional issues, thus poor and marginalized farmers and small holders are not capable to adopt, implement and scale out innovative practices at the local level.

In the present time, the whole urban population are in the lockdown situation and maintaining social distancing to avoid the outbreak of COVID 19 (Rawal S et al., 2022).

In this situation, rooftop gardening is the alternative form of agriculture to fulfill the required vegetables and recreation for the family (Joshi DR et al., 2021).

DESCRIPTION

Roles of rooftop gardening

FAO (Food and Agriculture Organization) and IFAD (International Fund for Agricultural Development) have jointly declared the decade of family farming (2019-2028) with a global action plan considering the opportunity to achieve the global agendas for sustainable development. It has emphasized on the family based production systems through family farming to end hunger and poverty utilizing the available resources sustainably.

The initiatives and efforts of these organizations in promoting climate smart agricultural policies, plans are promising and motivating for the governments, civil society groups and farmers too. Paudel emphasized on the promotion of sustainable and innovating farming to achieve the global development agenda of food security and climate action (Rijal S et al., 2022).

They further revealed the loss of 0.8% per year of GDP due climate impacts in agriculture, which is severely high among the poor and marginalized households because of the issues of food security and lack of adaptive capacity.

Thus, it is critical to develop and execute the adaptive and effective technologies and practices to improve productivity and adaptive capacity. Rooftop gardening is one of such innovative technologies and climate smart agricultural practices, which has been practiced in Kathmandu valley. The urban residents are attracted towards rooftop gardening due to increased price of vegetables and low taste and quality of vegetables available in the market.

These vegetables provide protective supplementary foods as the sources of protein, vitamins, minerals and amino acids (Bhattarai B et al., 2015). The rooftop gardening provides the spaces to grow fresh and healthy fruits, vegetables, spices, medicinal plants and flowers for food and recreation in the context of COVID 19 and lockdowns.

The study carried out in Spain emphasized on roles of green roofs in minimizing the temperatures especially in urban areas since rapid urbanization and intense anthropogenic activities create heat islands with maximum temperatures ranging from 1.5°C to 6°C in summer. The greeneries in the rooftop reduce the temperatures, regulate the microclimate, manage household wastes, rainwater and maintain the pollution contributing to climate change adaptation and mitigation, which is applicable in Nepal too.

CONCLUSION

Rooftop gardening is new concept to improve the family farming in urban areas. In the present context of COVID-19 pandemic throughout the World, the urban residents are lockdown situation within the household premises. During this time, the supply of food and vegetables has been reduced to some extent to fulfill the family requirements. Moreover, it is also risky for them to go out to purchase the vegetables in the wholesale and local markets. Thus, the rooftop gardening is the alternative source of food and vegetables to fulfill the household requirements of the vegetables. The leisure time while staying in the lockdown could be utilized in the rooftop gardening. It is required to strengthen the skills and capacities of the urban residents including the youths, women/mother's group to produce vegetables required for the family. Even in the lockdown situation, there is possibility to carry out online lectures and one to one interactions, field monitoring and technical backstopping.

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