Introduction

• A roof garden is any garden on the roof of a building.
• Besides the decorative benefit, roof plantings may provide food, temperature control, hydrological benefits, architectural enhancement, habitats or corridors for wildlife, and recreational opportunities.
• Rooftop farming is usually done using green roof, hydroponics, aeroponics or air-dynaponics systems or container gardens.
Environmental impact of Roof Top Gardening

- Roof gardens are the friends of urban environments those assist to reduce the overall heat absorption of the building as well as reducing energy consumption.
- A study was performed by the University of Cardiff which shows that plant surfaces by transpiration process, do not rise more than 4–5 °C above the ambient.
- This then translates into a cooling of the environment between 3.6 and 11.3 degrees Celsius (6.5 and 20.3 °F), depending on the area on earth.
- If widely adopted, rooftop gardens could reduce the urban heat island, which would decrease smog episodes, problems associated with heat stress and further lower energy consumption.
Social and community-based Benefit

- Gardening favors contacts and exchanges and betters the quality of life
- For seniors, gardens stimulate social encounters, physical activity
- It can mean getting back to the earth for some and participating in a lively project that comes with various therapeutic benefits
- The community in contact with the garden will benefit from the feeling that comes from helping others, commitment to a project and socializing with one another.
- Roof top garden came up as a concept of relief to our urban lifestyle that taking place of our exhaustion to concreteness of our cities.
Food security & Urban agriculture

- Gardening will favor the production of food for a meals-on-wheels program or a food bank, or for personal use.
- More or less not a matter it can contribute in producing fresh vegetables and fruits to the city dwellers contributing greatly to our built environment as a great friend.
- In an accessible rooftop garden, space becomes available for localized small-scale urban agriculture, a source of local food production.
- An urban garden can supplement the diets of the community it feeds with fresh produce and provide a tangible tie to food production.
- Available gardening areas in cities are often seriously lacking, which is likely the key impetus for many roof gardens.
- The garden may be on the roof of an autonomous building which takes care of its own water and waste.
Potentials of roof Top Gardening in Urban Bangladesh

- Year round supply of fresh fruits and vegetables
- Reduces expenditure on purchase of fruits and vegetables
- Effective utilization of space available at the roof top
- Supply of toxic free fruits and vegetables
- To grow our own favourite vegetables
- Rare and unavailable vegetables can be grown in roof garden
- Apart from the above, working in a roof garden will relieve stress and strains.
- Maintaining the greenery through roof garden reduces the pollution
- Increases the monetary value of land / apartment
- Avoiding Toxicities of fruits and vegetables
Institutionalization of Urban Greening

- The concept of urban agriculture has spread during 1990s with the pioneer works of Urban Agriculture Network supported by the UNDP.
- The direct or indirect stakeholder departments which are responsible of Urban Greening and Roof Top Gardening are City Corporations (Dhaka North, Dhaka South, Gazipur, Narayangonj) and the Rajdhani Unnayan artripakkha (RAJUK).
- With DCC and RAJUK, a number of state bodies, autonomous bodies, private organizations, NGOs, different societies are involved with greening activities in and around Dhaka city.
- Of them, the key state and autonomous authorities are Department of Environment (DoE), Local Government and Engineering Department (LGED), Bangladesh Forest Department (BFD), Dhaka Urban Transport Project (DUTP), and Dhaka Transport Coordination Board (DTCB), Department of Archeology, etc.
- Apart from these, some NGOs like ASHA, PROSIKA, different financial organization, donor agencies such as ADB, World Bank are also taking part in greening activities in Dhaka city.
- Some social organizations like Society of Arboriculture, Bangladesh National Nursery Consortium (NNC) are also contributing their efforts for promoting greening activities.
 Constraints of RTG to be implemented

- In Dhaka three types of building constructions are noticed as development by Government, private entrepreneurs and private developer companies in the form of joint venture.
- In case of private land owners, it is easily possible for RTG if the owner of the building is intended to do it.
- In case of Public building, it can be facilitated by mandatory policy by the Government as some of the departments or autonomous organizations have the manpower of Gardener in the organogram who can take care of it.
- The most complex situation arises in the buildings developed by the developers where the flat owners have limited access to gardening as the roof is treated as common property.
- This situation can be overcome by anacting policy of necessary airmark on the roof top for gardening and imposition by the flat owners association as joint venture.
• Steps should be taken to formulate proper strategies for protection of existing urban green areas of all the cities
• In case of Public building, it can be facilitated by mandatory policy by the Government as some of the departments or autonomous organizations have the manpower of Gardener in the organogram who can take care of it.
• RTG may be promoted in the buildings constructed by developer companies enacting policy of necessary earmark on the roof top for gardening and imposition by the flat owners association as joint venture.
• RTG induced roof design may be facilitated in cooperation with Real Estate and Housing Association of Bangladesh (REHAB), Institute of Engineers Bangladesh (IEB), Institute of Architects Bangladesh (IAB), Bangladesh Institute of Planners (BIP) with technical cooperation. Legislative framework regarding the prevention of abuse of the urban green spaces is needed
Recommendations

• The authority should develop a routine preventative maintenance program for the green areas
• Citizen involvement is necessary to bring awareness and social motivation
• Legislative reform is needed to allow roof top gardening by the flat owners through a common platform or society on the roof top of buildings constructed on joint venture by the developer company.
• Active government facilitation and NGOs could play vital role to increasing RTG by providing training and motivate people with technical aspects of rooftop gardening.
• Government should appreciate those initiatives and consider proper planning policy to motivate citizen of the urban areas for planting fruit plants and vegetable in their rooftops. It may be a rebate in their holding tax.
• Appropriate technical support and cooperation between different organizations might be explored for promoting and popularize roof gardening
• Unutilized and incidental spaces within all the cities of Bangladesh should be brought under effective use by promoting urban and peri-urban agriculture.
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Thanks