

# Cities CHALLENGE



## 2030 Agenda meets Urban Climate Action!

### Urban Micro-Lungs (Amman, Jordan): Fast-growing Forests for Climate-resilient, Clean and Quiet Neighbourhoods in East Amman

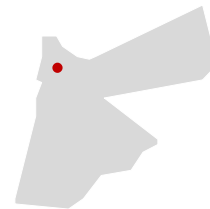
#### Background

Largely due to migration from conflict-prone neighbouring countries, the population of Jordan's capital Amman has doubled from 1.9 million in 2004 to over 4 million in 2015. Most new dwellers settle in the dense and poorer eastern parts of the city, overstressing the capacity of an already insufficient infrastructure. This rapid urbanisation has brought with it the challenges of high density, concrete-dominance and little to no access to public and green spaces. Covering only around 2.5 percent, the low proportion of urban green spaces places additional pressure on the remaining biodiversity, contributes to poor air quality, noise pollution, higher risk of flooding through a lack of soil water retention and an increase in the urban heat-island-effect. These conditions are set to increase in severity, as Amman faces the impact of a changing climate with rising temperatures and an increase in extreme weather events such as heat waves, droughts, and heavy rains that flood parts of the city. Inhabitants of East Amman are among the most vulnerable to the adverse impacts of climate change as these disproportionately affect the poor.

#### Project Intervention

The project aims to improve the quality of life in dense, disadvantaged urban areas through the creation of urban green spaces. Due to Amman's water-scarcity, greening the city is a challenge. To secure the contribution of urban green spaces and to enhance greening strategies, innovative small-scale solutions are required. Urban in-fills, such as roundabouts or small leftover spaces present a unique untapped opportunity for innovative environmental recovery activities. The measure adapts the Miyawaki method for the restoration and reconstruction of natural ecosystems to create ultra-dense, highly biodiverse and multi-layered urban forests. These natural forests grow 10

times faster, are 30 times denser and store 40 times more carbon than conventional plantations.



Amman,  
Jordan

#### Urban Forests and the Miyawaki Method

The Miyawaki method starts with soil engineering; building soil life, fungal networks and biomass. Based on careful selection of native and drought-resilient primary and secondary species, it works towards accelerating natural growth processes of self-sustaining, maintenance-free native forests. While the method has been successfully tested in dryland areas and deserts in the Mediterranean, it will be applied to an urban area in the Middle East for the first time. The Municipality of Amman and the Ministry of Environment are aware of the need for more green spaces in the city, The Tayyun Research Studio, which introduced the method to Jordan, implements the design, supervises the planting and monitors the growth and survival rate of the plants for two years. After these two years and the consolidation of the forest, the forest will be self-sustaining and self-maintaining.

Parallel to the implementation, capacity development for municipal staff enables them to take over the care of the forest and to include the sites into their irrigation and maintenance schedule. Walks and site activation workshops with residents at the project sites aim to raise awareness for the importance of green infrastructure and identification with the created spaces. Capacity building, further supports partners such as the Ministry of Environment and the

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Municipality of Amman in developing similar urban greening projects and in integrating them within the urban design and plan of Amman.

### Expected Results

The Miyawaki method enables environmental restorations of the strongly degraded areas in East Amman. The measure thereby contributes to SDG 15 (Life on Land) through urban greening efforts, which contribute to recreate ecological balance and combating biodiversity loss and deforestation through the re-establishment of native plant communities. These forests retain water run-off, stabilise the soil, regulate air temperature, decrease noise levels and increase carbon sequestration. They thereby not only contribute to SDG 3 (Good Health and Wellbeing) but also SDG 13 (Climate Action) and SDG 11 (Sustainable Cities and Communities), through the improvement of the living conditions and climate-resilience in the dense, disadvantaged urban areas. The project furthermore, generates awareness among both the population and the municipality for the importance of green infrastructure and provides the municipality of Amman with a replicable measure for the increase of urban green spaces, in the water scarce country.

### Implementation Partners

The Greater Amman Municipality (GAM) and the Ministry of Environment assist in providing and identifying a suitable publicly owned plot (street islands, leftover spaces etc.). The Tayyun Research Studio is responsible for implementing the Miyawaki method, monitoring the plot for two years, and providing capacity trainings for municipal staff to maintain the plot. The GIZ project, Improvement of Living Conditions in Disadvantaged Areas of Amman (ILCA) will coordinate the overall project together with local communities and the municipality.

### Funding

The project implementation takes place from July 2019 to February 2021. BMZ is funding the model measure through the Sector Project *CityRegions2030* with EUR 101,000.

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Project:  
Integrated Implementation of  
the 2030 Agenda in Cities and  
City Regions

On behalf of



Federal Ministry  
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