

EXECUTIVE SUMMARY

Final Report of “Green Lung” Project

Ulaanbaatar, Mongolia | 2017-2019

Author: M. Khishigjargal (Ph.D), B. Shurentsetseg (MSc.), & G.Munkhbat (MSc.) of Mongolian University of Life Sciences. 2019
Executive Summary Prepared by M. Sun & Y. Chang of ICLEI East Asia Secretariat

Ulaanbaatar, capital of Mongolia, is one of the most polluted cities in the world, with its annual average PM₁₀ concentration and PM_{2.5} being 7-8 times higher than the World Health Organization standards, exposing a population around 1.37 million in the city to severe air pollution and its related health risks.



Urban green spaces are increasingly recognized as bio-filters that can significantly help to mitigate noise and air pollution in cities. To improve air quality in Ulaanbaatar, the Mongolian Ministry of Environment and Innovation and the Business Development Center of the Mongolian University of Life Sciences jointly conducted the Green Lung Project in 2017-2019, with seed funding from the ICLEI East Asia Secretariat, under its East Asia Clean Air Cities program.



The project supported 100 households in the two selected ger districts of Songino-Khairhan District (SHD) and Khan-Uul District (HUD) – with special attention given to the engagement of senior citizens – to plant tree seedlings cultivated in soil-block with biochar additive for amenity purposes. A total of 1000 tree saplings were planted in households' fenced area in the districts, with survival rates of 57.2% and 31% in HUD and SHD respectively. The project, therefore, nominated *Elm*, *Caragana Arborensescens* and *Larch* as the most suitable tree species for greening the districts.

Pre- and post-project surveys were also conducted among residents of the districts to compare their understanding of air quality and health issues before and after the implementation, and to collect their opinions on the proposed solution of improving living conditions via urban greening. Survey results indicated an increasing number of householders planting trees in their fenced areas, with respondents revealing stronger preferences for *conifer*, *poplar* and *berry trees* in the 2019 survey. The result suggests that residents in the two districts have broadened their knowledge on tree types suitable for reducing noise and dust particulates since 2017.

In addition, the 2019 survey showed that over 90% of respondents from the two districts are aware of the risks of air pollution, which is a significant increase compared to that of 2017. In particular, 54% of respondents from HUD and 48% from SHD reported having family member(s) falling sick due to poor air. However, despite being aware of the negative impacts of air pollution, less than 50% of respondents from the two districts have shown a positive willingness to taking further action on air pollution.

Recommendations discussed include:

- Residents of the targeted districts and surrounding areas are increasingly aware the importance of greening. Further capacity building activities and professional support on urban green spaces and planting and caring for trees should be provided to citizens for up-scaling the project.
- Biochar is a useful source for future urban greening.
- Use superior quality seedlings and saplings which can withstand the harsh environment to increase the survival rate. Suitable tree species include *Elm*, *Caragana Arborensescens*, and *Larch*.