

Air Pollution in Ger Districts of Mongolia: Analysis of Gaps between Policy and Practice based on an Awareness and Risk Perception Survey

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Developing countries suffer the greatest impact from air pollution in terms of life, economic loss, and environmental degradation. Around 50% of people, almost all in developing countries, rely on coal and biomass in the form of wood, dung and crop residues for domestic energy use. Indoor air pollution is a major global public health threat requiring increased efforts in the areas of research and policy-making. Therefore, a more systematic approach to the development and evaluation of interventions is desirable, with clearer recognition of the interrelationships between poverty and dependence on polluting fuels.

According to a WHO report, the capital city of Mongolia, Ulaanbaatar, is one of the top five most air polluted cities in the world in 2013. Annual average concentrations of atmospheric particulate matters including PM₁₀ and PM_{2.5} levels are over both national and global air quality standards by 7 to 17 times. Especially, during the winter season, when temperatures are -20°C or less, the use of coal and wood fuels for heating increases rapidly and the air pollution is aggravated, especially in Ger districts of Ulaanbaatar. Households in Ger districts – named for the traditional felt tents many live in, known elsewhere as yurts – account for a considerable proportion of air pollution emissions of the whole city due to coal usage for heating.

Research regarding the seriousness of the air pollution on citizens' health in Ulaanbaatar has been published actively. However, research regarding integrated air pollution disaster risk management is

lacking. In order to develop disaster prevention guidelines for air pollution emergencies, and propose countermeasures including policies and/or regulations for air pollution reduction, it is necessary to form a social consensus based on stakeholder engagement. The Government of Mongolia is implementing several policies to reduce the severe air pollution in Ulaanbaatar. However, the residents in Ger districts are not able to take advantage of some of the policies introduced by the government due to various factors including their economic condition. Thus, there is a need to find ways to reduce low-grade fuel use and reduce the air pollution through more realistic policies that consider the needs and capacities of Ger district residents.

This study investigated residents' awareness and risk perception regarding air pollution and other problems in Ger districts of Ulaanbaatar, Mongolia, and identified perceived or real barriers for change that can lead to lower coal usage in households. Moreover, a participatory workshop method was applied for a community to identify current issues regarding air pollution problems and to develop a collaborative action plan to tackle air pollution in the households. Through the survey and workshop results in a Ger district, we analyzed gaps between existing and planned policies and regulations, and assessed the current and desired situation of community members. Furthermore, the following hypothesis were clarified:

- The use of coal is related to household income or economic condition;
- The young generation has higher risk awareness

level due to access to more information and educations;

- The higher the education level, the better the understanding of the main causes of air pollution;

- Family with children or women have strong will to improve the air pollution environment in their houses and their communities.

This presentation will present the results of the first phase of the study which included interviews of various stakeholders in Mongolia and a household

survey in Ger districts conducted in January and March 2017. The results showed that the risk perception of the air pollution at the local level is high. Moreover, a pilot test of the participatory workshop method for local residents demonstrated the possibility that the community-based disaster risk management research could be applied in Mongolia as well, with promising results. Preliminary conclusions of the first phase and future work will also be presented.