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Climate Change Adaptation and Vulnerability Assessment at the Urban Level – A Case Study of Tianjin, China

With the increasing level of GHG emissions, the world is influenced by the increasing serious climate change. In China, Tianjin, as one northern coastal city and economic center, with the mainstream of Haihe River Basin flowing through. Because of the geographical location and seasonality, Tianjin has been affected by extreme weather fairly considerably. The previous studies have shown that the urban area could be higher vulnerable to climate change compared with the rural, and need different CCA plans to cope with the adverse impacts. Also, in the context of tackling climate change, many research has demonstrated its effectiveness has a significant relevance with public participation, and due to China's demographic characteristics and based on several youth perspective literatures, the response of the young generation is rather important. Because there is no holistic climate change adaptation plan for Tianjin so far, this study is aimed to find out the causes, identify the key vulnerabilities and propose possible adaptation options for Tianjin for further consideration. A mixed method used in the study includes document analysis and questionnaire survey. Based on IPCC climate change projections and Chinese government documents, the key vulnerabilities in Tianjin are heavy precipitation, water scarcity and extreme heat, and their frequency will be increasing in the future. Other findings from the documents indicate that while Tianjin's adaptive ability is overall high as the city is well-developed, there are still many issues for Tianjin and also for China to improve. In order to validate these problems found, a questionnaire targeted at Tianjin's younger generation about their perspectives on four topics, including public climate awareness, willingness to support climate policies, perception on climate change impacts and resident's adaptive ability. A comparison was made by setting two age groups, 18-36 and 37-55, and their responses are different due to life experience, climate change awareness and political influence. Therefore, the reasons why climate change adaptation has been neglected in Tianjin and reflections for China includes low level of public climate awareness, China's Non-Participatory Polity, the conflict between economic growth and sustainable development, and a lack of external supervision outside of government. Apart from CCA options are proposed, an advantageous approach for China to consider is independent CCA law legislation at city level, and the detailed issues within the law and other research directions could be further discovered.