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SPACE-BASED DATA FOR CLIMATE CHANGE ADAPTATION: IDENTIFYING PATHWAYS FOR
ACCESS AND USE IN EARLY AND NON-SPACE-FARING COUNTRIES**Abstract**

As the impacts of climate change become more pressing, governments are increasingly undergoing processes of adaptation for their infrastructure and services. Without such adaptation, livelihoods, and lives, will be lost, especially in the developing world. In recent years, space-based data (SBD), such as imagery and spectral and altimetry data from Earth observation satellites has been recognized as a key requirement for effective adaptation. Despite a lack of direct access, there are cases of SBD being used for adaptation initiatives in early/non-space faring developing countries. These include: satellite imagery for flood risk mapping in Mauritius, visible and near-infrared observations of crop conditions in Indonesia, and altimetry data for water-storage in Ghana. Notwithstanding successful cases, reports from leading international institutions have consistently reiterated three problems. First, knowledge, and acquisition, of data by practitioners in early/non-space faring developing countries does not occur in a timely manner. Second, technical capacity to turn space-based data into useful products for planning and policy making can be limited or lacking. And finally, there is a lack of empirical research on 'lessons learned' from successful access to, and use of, SBD. Via key case studies, the project outlined in this paper will undertake an in-depth international multi-stakeholder analysis to characterize the public, private and civil society networks through which practitioners in early/non-space faring developing countries successfully acquire(d) SBD for adaptation initiatives. The methodology for this analysis will consist of international field work to conduct in-depth qualitative interviews, as well as analysis of key documents from relevant organizations. Through this process, pathways of successful acquisition, and use, of SBD can be identified and understood. Such novel, empirical, qualitative investigation will inform both researchers and governments on the strategies for, and challenges of, acquiring and using SBD for adaptation. The project will answer the following two primary research questions: First, what relationships between adaptation practitioners in early/non-space faring developing countries and actors at UN related programs, space agencies, or private firms, among others, led to effective networks for SBD access? And second, what institutional and technical conditions, relationships, or strategies created, or provided, the expertise to turn the space-based data into effective products for adaptation? Though this information it is also hoped that space-faring governments can better meet their obligations for sharing of space benefits and global climate action under the Outer Space Treaty, Sendai Framework for Disaster Risk Reduction, and the Paris Climate Accord respectively.