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BUILDING UP NATIONAL SPACE CAPABILITIES FOR DISASTER MANAGEMENT: ANALYSIS
OF A TREND IN EMERGING SPACE NATIONS AND DEVELOPING COUNTRIES

Abstract

For the past decades, new space nations have emerged worldwide. Developed as well as developing countries have started to gain national space capabilities and this trend has obviously increased during the last ten years. Space applications are assessed to contribute and foster the achievement of the United Nation's Millennium Development Goals. Civil security, quality of life and disaster management are thus the main rationale presented by countries to develop their own space capabilities, often with the support of space-faring nations through capacity building or technology transfer.

Despite having different political structures and economic background, numbers of these countries acquiring national space-borne technologies follow a similar approach in the development and implementation of these capabilities.

The space-based technologies relevant for disaster management, used for early warning, vulnerability assessment, emergency preparedness, disaster mitigation and adaptive response, are remote sensing, satellite communications, navigation systems and meteorological satellites. This paper will therefore present how political and economic decision makers in countries with recent space capabilities underline the role of these space applications for disaster management, mainly telecommunications and earth observation, and the policies induced by their strategies.

In this approach, countries often emphasise in official public documents the need for them to acquire these technologies in order to independently ensure national civil security. This concept of "self-reliance" will be analysed in this paper.

Nevertheless, space-borne technologies intended for civil use can be of great interest for defence or intelligence applications and some countries can be tempted to follow a second agenda. Despite this risk, in some cases, the rationale of civil security could increase the worldwide acceptance for space technologies development and for capacity building.

To serve efficiently the public needs in disaster management, space-borne applications have to be supported by sectorial policies. This paper aims to analyse political strategies and policies' implementation to develop space technologies for disaster management in emerging space nations. This study, taking into account the historical path and the stakeholders involved, is supported by official documents (i.a. laws and budgets), statistics and relevant academic literature. Some concrete examples, provided as case studies, illustrate the overall process. Thanks to a quantitative and qualitative analysis, the paper distinguishes homogeneous and heterogeneous trends in the development of space technologies for disaster management in emerging space nations.