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SPACE INNOVATION POLICY FOR DISASTER MANAGEMENT CAPABILITIES: A CASE STUDY
ON THE NASCENT FILIPINO SPACE PROGRAM**Abstract**

With more than 4.5 billion inhabitants and some of the world's least developed countries, Asia-Pacific is highly vulnerable to disasters of every kind. In its 2015 Asia-Pacific Disaster Report, the United Nations Economic and Social Commission for Asia-Pacific (UNESCAP) noted that between 2005 and 2014, 1,625 incidents had been reported, killing half-a-million people, affecting the life of approximately 1.4 billion and generating economic damages worth \$523 billion. Although most of these deadly disasters can be addressed using a wide range of space technologies (space remote sensing, satellite communication and positioning systems), the access to such technologies is highly unequal. While Japan, China or Korea can boast tremendous capabilities, Asia-Pacific developing nations have basically no access to outer space. It is therefore primordial to promote the spread of critical space technologies and foster regional and international collaboration for disaster management. A prerequisite to the establishment of inclusive and ambitious regional policies is a deep understanding of current international, regional and national frameworks for disaster management. As a first step, we decided to focus on the situation of the Philippines.

The Philippines started in 2015 the National Space Development Program (NSDP), currently consisting of 7 researchers, which recently launched a national space agency. Japanese universities' support to the early stages of the program, especially regarding space technology training (e.g. DIWATA-1 satellite), provides valuable insights on impact and prospects of intra-regional technology and knowledge transfers. Moreover, all of these, together with the willingness of NSDP to develop a local satellite industry sector in the next 10 to 15 years, make the Philippines the perfect ground to try and evaluate the best practices of space innovation policy. The applicability of the NewSpace approach to improving disaster management in developing countries, from a policy-making perspective, is analysed in this paper, with in particular the shift to alternative procurement strategies such as the demand-pull scheme.

Finally, this case study allows us to outline the basic rules of space innovation policy in developing countries as well as to refine the analytical framework used for a broader Asia-Pacific evaluation.

Keywords: innovation policy, disaster management, NewSpace, Philippines, space technologies