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Is Space R&D Truly Fostering A Better World For Our Future? (2)

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FRAMEWORK FOR REGIONAL COOPERATION, CAPACITY-BUILDING, AND COMPETITIVENESS IN SPACE MEDICINE AND BIOLOGY RESEARCH IN ASIA-PACIFIC

Abstract

Over the last few decades, technological and economical advancements have enabled some Asian countries to become contenders in the ongoing race to explore and establish settlements in space. Of the six major space powers in the world that have full launch capabilities, three are from Asia-Pacific (China, India, and Japan) and several more are emerging in the NewSpace era. Among the apparent developments, Asia-Pacific (AP) has several promising characteristics to enable advancements in space medicine and biology (SMB) research. However, the implementation and conduct of SMB research has thus far been limited due to the lack of a regional framework that will organize resources and establish due process to conduct and utilize SMB.

This paper proposes the establishment of a Space Medicine and Biology Working Group in the Asia-Pacific Regional Space Agency Forum (APRSAF), the largest space-related gathering of AP space agencies, companies, and organizations. Some of the space powers in AP are not high-income nations, hence it would be useful to assess the short and long-term trends, weaknesses, and strengths of the regional space economy and its implications to SMB. Drawing from current models of international space medicine organizations (e.g. United Nations Committee on the Peaceful Uses of Outer Space's Working Group on Space and Global Health) and collaborative research projects in AP and beyond (e.g. Space Seeds for Asian Future and Tumors in Space), we outline a policy framework for which SMB will be used to nurture regional cooperation and capacity-building within AP, and improve its competitiveness to perform quality research and development. To demonstrate the utility of such a regional framework, we will review the strengths and weaknesses of past projects and present recommendations and ideas for more collaborative Asia-Pacific SMB projects.

Aside from advancing technologies in space, the proposed SMB Working Group will promote adoption,

application, and commercialization of SMB research around AP, especially for low-resource settings to improve healthcare and develop sustainable local bioeconomies. The establishment of such a regional framework will enable easier and smoother adoption of such technologies by taking into account the specific constraints and challenges of a low-resource setting. Moreover, the SMB Working Group will advance information sharing, mutual learning, and leapfrog development of SMB technologies and projects in space and on Earth.