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THE ROLE OF CUBESATS PROGRAMS IN WORKFORCE DEVELOPMENT FOR DEVELOPING
COUNTRIES

Abstract

Benefits from the exploration and eventual applications of Space technology are evident in all aspects of our lives on Earth; from earth observation, navigation, communication and innovative spin-offs in all areas of science and technology. Apart from the huge capital investment involved, access to these benefits in part require long term investment in high level education and infrastructural development. In the past, this has been an impediment for developing countries to access space and develop manpower in allied technological areas as expenditures on space programs in such countries may seem inappropriate because of the need for diverting resources from near-term social programs. Recently, this narrative is changing as many developing countries can access space and also develop essential manpower through CubeSat (1U: 10cm cubic, 1kg) programs which offers a cheaper and faster access to space. These programs have shown that long-term economic prosperity of any nation depends in part on investment in human capital development, the advancement of which requires scientific training as well as the use, and eventually the development of new technologies. This paper shall bring to the fore a comparative analysis of several CubeSat projects considering the different models, lessons learned and success stories from Africa, South America and South-East Asia that are providing great scientific impact with near-term benefits through applications such as environmental monitoring, disaster response, and telecommunications to posit a pathway for helping developing and emerging nations to develop their workforce thereby hastening national and regional technology development.