

Japan, Agenda Item 16– “Space and Global Health”

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Mr. Chair, Distinguished Delegates,

Japan has been developing ways and means for space applications to contribute to global health.

For Japan, the use of remote sensing is an efficient way to tackle global health issues. One example is by monitoring air pollution using data from Himawari, the Japanese geostationary meteorological satellite primarily used for weather forecasts. Its observation data also serves to predict yellow dust or aerosols such as PM2.5, which affect the quality of the atmosphere.

Air pollution is closely linked to global health. According to a recent report by WHO, air pollution is regarded as the single biggest environmental risk on human health, causing 7 million premature deaths. Space observations can greatly contribute to better understanding of the emissions, trends, and impacts of air pollutants such as PM2.5 and ozone. This research area needs to be strengthened to reduce this environmental health risk, in particular in developing countries. Japan is planning to launch the “Global Observing Satellite for Greenhouse Gases and Water Cycle (GOSAT-GW)”, which aims to observe nitrogen oxides, a major air pollutant acting as a precursor of ozone. This new satellite is expected to help solve global health issues in collaboration with our international partners.

Mr. Chair,

I would like to share Japan’s research in the field of space and global health.

In collaboration with JAXA, the National Center for Global Health and Medicine has been conducting research on the spatial epidemiology of malaria in Laos using earth observation satellite data. Since the distribution of a vector called *Anopheles* mosquito was reported to be significantly affected by temperature and vegetation, it was expected that malaria epidemics could be triggered by unexpected climate changes. Our research found that the ground surface

temperature increased significantly each year, which was positively correlated with the number of malaria cases. We also found that there was an increase in malaria cases in growing forest plantation areas. Particularly, from 2010 to 2012, in the region where afforestation after land readjustment increased significantly such as in plantations of rubber, sugar cane, and bananas, the number of malaria cases also increased (for example, 650 in 2010, 1,587 in 2011, and 2,457 in 2012). It is important to take cautious measures to understand, prevent, and manage its outbreak by monitoring its spread in plantations through remote sensing technology.

As another activity, the National Institute for Environmental Studies started the “Climate Change and Air Quality Research Program” as one of its strategic research programs. The program aims to provide scientific basis toward global stabilization of climate change and air quality, with its scientific foci including evaluations of greenhouse gas emissions and air pollutants from global to local scale, by using satellite observations of atmospheric compositions.

Earth observation using remote sensing satellites allows controlled real-time data collection from widespread areas where ground investigation is difficult. Japan will continue to use space technology for the benefit of humankind and to contribute to the advancement of global health.

Thank you for your attention.