

Indonesia Response to Questionnaire of the Working Group on Space and Global Health

- 1. Please describe existing or planned formal cooperative agreements and other institutional arrangements (MoUs, letters of agreement, frameworks of collaboration etc.) between health sector and all sectors directly linked to space activities at the national level:**

Answer:

Indonesia has already adopted the Presidential Instruction Number 4 of 2019 on Capacity Building in Preventing, Detecting and Responding to Disease, Pandemic and Nuclear which aims to set the policy for evaluation, research and coordination in order to strengthen the prevention, detection, and response to the outbreak, global pandemic, as well as nuclear, biology, and chemical emergency, that could have an impact on health security both at national and global level.

Indonesia National Action Plan for Health Security 2020-2024 (NAPHS) has been formulated. This NAPHS aims to strengthen national capacity in preventing, detecting, and responding to public health emergency of international concern (PHEIC), as well as collaborating with international/UN agencies and civil society in dealing with PHEIC.

The Ministry of Health of the Republic of Indonesia and the National Institute of Aeronautics and Space of Indonesia have planned to collaborate with regards to the use of space in global health. This initiative should serve to strengthen and catalyse the SDGs target.

- 2. Please provide recommendations regarding the establishment of a dedicated platform for effective coordination among United Nations entities, other international organizations and relevant actors, on space and global health issues.**

Answer:

Space information for global health is important, particularly in identifying the health risk map. The information served as prevention and protection which obtained potential natural disaster through space imagery, land use maps and risk maps.

In this regard, Indonesia has already established two dedicated forums to monitor achievements, challenges, and coordination between the Government of Indonesia and UN Agencies in Indonesia, namely Bappenas-UN Forum and Indonesia-United Nations Consultative Forum (IUNCF). These forums have provided recommendations both within the general cooperation and the scope of United Nations Sustainable Development Cooperation Framework (UNSDCF), including on global health.

The UN agencies that has already engaged on the global health issues currently are WHO, UNICEF, FAO, OIE, and UNCTAD.

- 3. Please describe existing or planned policy-enabled environment and governance mechanisms, for removing barriers to the effective use of space-based technologies in support of global health.**

Answer:

Indonesia has Government Regulation of Indonesia Number 11 of 2018 on remote sensing regulate remote sensing data procurement to ministries that including ministry of health for utilization of space-based technology for health.

Regarding the data-sharing policies, Indonesia has formulated the Material Transfer Agreement (MTA) and Data Transfer Agreement (DTA) mechanism to provide maximum benefit for the potential to find and use science and technology to combat disease and improve health status, scientific publications, intellectual property and technology transfer in supporting national resilience and global health. It is important to regulate the distribution of the benefits of sharing genetic material or data. Management and regulation systems are needed in policy settings related to Open Data Access Global.

4. Please describe existing or planned open data-sharing policies and participatory approaches to developing and improving access to geospatial information relevant to global health.

Answer:

Indonesia has introduced the Minister of Health Regulation Number 85 of 2020 regarding on Transfer and Use of Materials, Data, and Content Information. It stipulates the mechanism for Material Transfer Agreement (MTA). The implementation of this regulation will be optimized by dividing the utilization of genetic material or data. In addition, the management system and regulation for the adjustment of the Open Data Access Global policy will also be developed.

The Government of Indonesia also has established the One Data Policy, Public Information Transparency and one map policy, which shows that Indonesia has participated in the openness of data sharing. This is stipulated under the Presidential Decree Number 20 of 2018 on Authority of Access to Sharing Geospatial Data and Information through the National Geospatial Information Network; Presidential Regulation Number 39 of 2019 on One Indonesian Data; IT governance (Presidential Regulation No 95/2018 Electronic Based Government System), and Health Information System Governance (Government Regulation No 46/2014 Health Information System).

During the COVID-19 pandemic, the Government of Indonesia through Ministry of Communication and Informatics has accelerated the development of internet connection for more than 3,000 health services throughout Indonesia. This effort aims to optimize the telecommunications between health facilities, improve the quality of data flow for health facilities and the use of digital-based health applications, especially in the frontier, outermost, and disadvantaged areas. Indonesia by National Institute of Aeronautics and Space also has developed space-based innovation on COVID-19 monitoring system. Especially Covid-19, application of One Indonesia Data for Vaccination has been developed.

5. Please describe existing or planned efforts related to the geotagging of all assets relevant to health systems, including health information systems.

Answer:

Indonesia has established and updated the use of geotagging system throughout all health care facilities location (hospital and primary health care). There are two systems that have been developed, namely SIRANAP (Inpatient Information System), and SISRUITE (Integrated Referral System) by utilizing the geotagging system. Furthermore, with regards to health disaster risk management, Indonesia manages the InaRISK-BNPD (a risk assessment portal using arcgis server as data services), real-time information for weather and earthquake (in collaboration with the Meteorology Climatology and Geophysics Agency), and real-time information for volcano activities (in collaboration with the Centre for Volcanology and Geological Disaster Mitigation).

6. **Please describe existing or planned intersectoral coordination and cooperation for effective international, regional, national and subnational capacity-building activities relevant to the application of space science and technology in the field of global health.**

Answers:

Indonesia has been involved in the application of space science and technology for global health with various types, both developed by the government and the private sector which are compiled in one data policy by Ministry of Health of Republic of Indonesia.

Regarding to effectiveness coordination and cooperation, Indonesia has Presidential Instruction Number 4 of 2019 on Enhancement of Ability in Preventing, Detecting, and Response to Disease, Global Pandemic and Nuclear, Biological and Chemical Emergencies.

7. **Please describe existing or planned mechanisms to engage educational institutions and other capacity-building mechanisms in motivating young health professionals to acquire skills and abilities required to efficiently use advantages provided by space technology, science and applications at an early stage in their careers.**

Answers:

In this regards, Ministry of Health of Republic of Indonesia has training for young health professionals to tackle the lack of human resources in input data of COVID-19 issues. The Ministry also has developing Indonesia Healthy Programme since 2015; Geospatial Training collaborate ASEAN Project in 2016/2017; Annually training of mapping risk disaster at district/city and province health offices; Training elaboration of Covid-19 countermeasures which using digital technology for medical laboratory technologists, doctors, midwives, and nurses.

8. **Please describe existing or planned mechanisms to better integrate space-derived data and information into decision-making processes related to global health, and to harmonize and share such data.**

Answers:

Information System of Covid-19 Logistic which facilitates demand and availability of logistic for Covid-19 countermeasures at Puskesmas, Hospitals, and Ministry of Health).

Relates Covid-19, data were integrated by All Record Applications, such as SIRS Online (information system of patients in hospital), SILACAK (data of contact tracing which inputted by tracking officers), and e-HAC (electronic Health Alert Card that travelers must be filled in by travelers). The result will become an analysis that can be used for policy makers to make decision.

9. **Please describe how space technology and application are integrated into health-related emergency planning and management and disaster management plans.**

Answers:

Indonesia has utilized the *space technology* satellite to develop information system for Health Crisis Prevention by integrating a remote sensing application to build a mitigation and disaster preparedness system.

- a) In the area of Space Life Science, no research has yet been conducted by the Agency of Health Research and Development regarding the Space Life Science project.
- b) Under ASEAN (Associations of Southeast Asian Nations), Indonesia is planning to collaborate with Blue DOT, which provides medical assistance regarding the information on outbreaks in the ASEAN Region. The focal point on this matter is the Indonesia's Public Health Emergency Operations Centre (P2P).
- c) On the national level, the Agency of Health Development and Research Activities, in collaboration with the Directorate of Health Surveillance and Quarantine as the focal agency, utilizes the Geospatial Information System (GIS) to map the EWORS (Early Warning Outbreak Responds System).
- d) The Government of Indonesia is also conducting a research project on Anti-Microbial Resistance (which creates a "superbug", making the treatment of a basic infections difficult (sometimes impossible) and increases surgery risk) using *One Health Programme* approach by conducting GIS.
- e) In the aspect of digital gaps, Indonesia is developing the access of Internet service network to cover and accommodate the entire nation. Indonesia is also considering the regulations regarding data openness to ensure that it will not negatively impact the country.

10. Please describe the key activities, reference documents and plans relevant to the topic "Space for global health"

Answers:

Indonesia has One Health information sharing platform called SIZE 2.0 (Zoonosis and Re-emerging Infectious Diseases Information System version 2.0). SIZE 2.0 is a health surveillance information system that connects three other systems: 1) Ministry of Health's Early Warning, Alert, and Response System – EWARS (SKDR/Sistem Kewaspadaan Dini dan Respon); 2) National Animal Health Information System (ISIKHNAS) by Ministry of Agriculture; and 3) Wildlife Health Information System (SEHAT SATLI) by Ministry of Environment and Forestry. SIZE 2.0 is coordinated by the Coordinating Ministry for Human Development and Cultural Affairs of Republic of Indonesia.

PeduliLindungi as an application using Bluetooth technology to track Covid-19 spread and alerts its users if they are entering an area with a high number of people infected by Covid-19.

11. Please Provide an overview of existing and planned practices and initiatives in the current uses of space (technology, applications, practices and initiatives) in support of global health identify gaps, if any, in the following areas;

- a. Telemedicine and tele-health;
- b. Tele-epidemiology and environmental;
- c. Space life Sciences
- d. Disaster and health emergency management;
- e. Other

Answer:

- a) Telemedicine and tele-health;

Regarding on the geographical condition of Indonesia which is in the form of an archipelago and the distribution of health human resources that is not evenly distributed, in Indonesia telemedicine has been developed with the aim and aim of expanding access to health services to reach people to rural / remote areas. In

Indonesia, various telemedicine development platforms have emerged, for example: SehatPedia, an application that focuses on community-based health promotion and prevention efforts (from health facilities to the community); Besides that, there is TEMENIN, an application that focuses on curative and rehabilitative efforts by hospital-based telemedicine (from health facilities to health facilities).

b) Tele-epidemiology and environmental;

In this regard, Indonesia has developed an information system called the SIZE 2.0 platform developed since 2018. (also referred to answer number 10)

d) Disaster and health emergency management;

In the area of disaster management, Indonesia uses geographical information system and satellite imagery. (EOC/Emergency Operation Center)

Indonesia uses *space technology* satellite to develop health crisis prevention information system (SIPKK/Sistem Informasi Penanggulangan Krisis Kesehatan) by integrating remote sensing applications to build mitigation and disaster preparedness system in national, province, and district level.