STSC Working Group on Space for Global Health

Knowledge management and sharing workshop

Intersessional activity
15 June 2021

Agenda

- Prof Adam Hawkey, PhD, Professor of Sport Science and Human Performance, Solent University
  - UK Space Labs “Why Space?”
- Ximena Porcasi, PhD, Argentina National Space Activities Commission
  - Current activities in environmental, vector borne diseases in Argentina. Identifying strength and weakness
- Prof Nandu Goswami, MD, PhD, Head of Research Unit “Gravitational Physiology Aging and Medicine”, Medical University of Graz
  - Assessing risk of thrombosis in Space and how it helps in assessment of clinical risk of thrombosis on Earth: Perspectives and Update from the ESA Topical Team ”
- Prof Antoine Geissbuhler, MD, Geneva University
  - Designing the Space and Health Globally-Accessible Platform

Draft recommendations
Knowledge management and sharing

- **Recommendation 9**: Establish a dedicated platform for effective coordination among UN entities, other international organizations and relevant actors, on space and global health issues.
- **Recommendation 10**: Monitor and compile all key activities, reference documents and plans relevant to Space for Global Health activities by UN entities, including those of WHO and other international organizations, member States of the Committee as well as, as far as possible, non-governmental organizations and other nongovernmental actors. This annual compilation of activities will serve as a reference to identify and discuss gaps and opportunities and will be shared broadly in an effort to raise awareness and promote cooperation among relevant actors in this domain.
- **Recommendation 11**: Develop an engagement strategy to analyze and assess current actors' roles and interests in the domain of Space and Global Health. This engagement strategy is expected to be used to help to promote synergy, complementarity, cooperation and coordination among all actors.

Space & Health Globally-Accessible Platform

Knowledge management platform

Community management platform

SH-GAP design concepts

- The platform provides both an online knowledge management platform and a hybrid (both presential and online) community management platform, aimed at supporting knowledge sharing, decision making and capacity building.
- The platform leverages on existing open platforms such as WHO's Digital Health Atlas, the openWHO platform, the GEOSS platform, the OOSA platform, the wikiversity platform, etc.
- The knowledge management platform provides the following functionalities: a formal knowledge domain representation, data collection tools, machine-assisted multi-lingual document indexing and annotation, data curation and quality control tools, data analytics and visualization tools.
- The community management platform provides tools, processes and convening capacities for the work of communities of practice, for knowledge dissemination, and for the hosting of hybrid events.
- The community management platform is managed in collaboration with OOSA, WHO, GEO, ITU and WMO.

SH-GAP implementation & sustainability strategies

- Build upon an existing knowledge management platform rather than building a new tool from scratch.
- Team-up with knowledge management experts as well as domain experts to configure the knowledge management platform, and in particular with academic partners.
- Invest most sustainable resources in the collection and timely update of the document base and for the quality assurance of data curation.
- Team-up with existing on-line and presential conveners and organizers for the hosting of community management activities.

SH-GAP use cases

- Finding and accessing actionable knowledge
  - FAIR principles: Findable, Accessible, Interoperable, Reusable
- Mapping and inventoring existing space & health implementations
  - Include humanitarian activities and disaster management
- Advocating collaboration through communities of practices and match-making
- Facilitating policy-making and governance
- Promoting meaningful innovation through industry co-creation partnership
- Exchanging knowledge, challenges and best practices
  - Aim at publishing the resulting work
- Raise awareness in the general population
  - Use illustrative cases to generate interest

Implementation challenges

- Fostering productive discussions on specific topics
- Fostering interdisciplinarity and transdisciplinarity – common language
- Collecting relevant information
  - Literature, grey literature, project reports, regulatory documents, etc.
- Accessing information on failures (publication bias)
- Dealing with meta-data and terminologies to annotate information
  - Is there an equivalent of the MeSH terminology for space & health ?
  - Medical Subject Headings (MeSH) is a comprehensive controlled vocabulary for the purpose of indexing journal articles and books in the life sciences. It serves as a thesaurus that facilitates searching.
    https://en.wikipedia.org/wiki/Medical_Subject_Headings

Metadata in MEDLINE

Developing a representative community health survey sampling frame using open-source remote satellite imagery in Mozambique

Bradley H Wagenaar [1 2], Orvalho Augusto [3 4 5], Kristjana Ásbjörnsdóttir [3 4], Adam Akullian [6], Nelia Manaca [7], Falume Chale [8], Alberto Muanido [7], Alfredo Covele [7], Cathy Michel [7], Sarah Gimbel [7 9], Tyler Radford [10], Blake Girardot [10], Kenneth Sherr [3 4], with input from the INCOMAS Study Team

Collaborators, Affiliations + expand

PMID: 30373621 PMCID: PMC6206736 DOI: 10.1186/s12942-018-0158-4

Free PMC article

Abstract

Background: Lack of accurate data on the distribution of sub-national populations in low- and middle-income countries impairs planning, monitoring, and evaluation of interventions. Novel, low-cost methods to develop unbiased survey sampling frames at sub-national, sub-provincial, and even sub-district levels are urgently needed. This article details our experience using remote satellite imagery to develop a provincial-level representative community survey sampling frame to evaluate the effects of a 7-year health system intervention in Sofala Province, Mozambique.

Methods: Mozambique's most recent census was conducted in 2007, and no data are readily available to generate enumeration areas for representative health survey sampling frames. To remedy this, we partnered with the Humanitarian OpenStreetMap Team to digitize every building in Sofala and Manica provinces (685,189 Sofala; 925,713 Manica) using up-to-date remote satellite imagery, with final results deposited in the open-source OpenStreetMap database. We then created a probability proportional to size sampling frame by overlaying a grid of 2.106 km resolution (0.02 decimal degrees) across each province, and calculating the number of buildings within each grid square. Squares containing buildings were used as our primary sampling unit with replacement. Study teams navigated to the geographic center of each selected square using geographic positioning system coordinates, and then conducted a standard "random walk" procedure to select 20 households for each time a given square was selected. Based on sample size calculations, we targeted a minimum of 1500 households in each province. We selected 88 grids within each province to reach

MeSH terms

- Adolescent
- Adult
- Censuses
- Child
- Family Characteristics*
- Female
- Health Surveys / methods*
- Health Surveys / statistics & numerical data
- Humans
- Male
- Mozambique / epidemiology
- Satellite Imagery / methods*
- Satellite Imagery / statistics & numerical data
- Surveys and Questionnaires* / statistics & numerical data

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