Meeting of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space:

Tele-epidemiology and tele-health

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eHealth and other terminology

- eHealth as the cost-effective and secure use of information and communication technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education.

- **Tele-health** is the use of information and communication technology (ICT) to deliver health services, expertise and information over distance.

- **Tele-epidemiology** is a methodological and application area of epidemiology concerned with the application of space-based systems.

- **E-epidemiology** is the science underlying the acquisition, maintenance and application of epidemiological knowledge and information using digital media such as the internet, mobile phones, digital paper, digital TV.

- **Telemedicine** is the use of telecommunication and information technologies in order to provide clinical health care at a distance.

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Scope of eHealth applications and services

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Satellite potential benefits to public health

- Final report of the Action Team on Public Health: the use of space technology to improve public health of the Committee on the Peaceful Uses of Outer Space Scientific and Technical Subcommittee Forty-eighth session, Vienna, 7-18 February 2011

- Satellite communication,

- Global positioning systems and

- Remote sensing space technologies

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Satellite utilization by WHO

- Public health mapping
    - Disease surveillance (eSurveillance)
    - Epidemiology (eEpidemiology or Tele-Epidemiology)
    - Water supply and delivery
    - Poverty mapping
    - Emergency and disasters
- Data and voice communication
- Enabling access to health information and learning materials
- Partnerships and technical advice
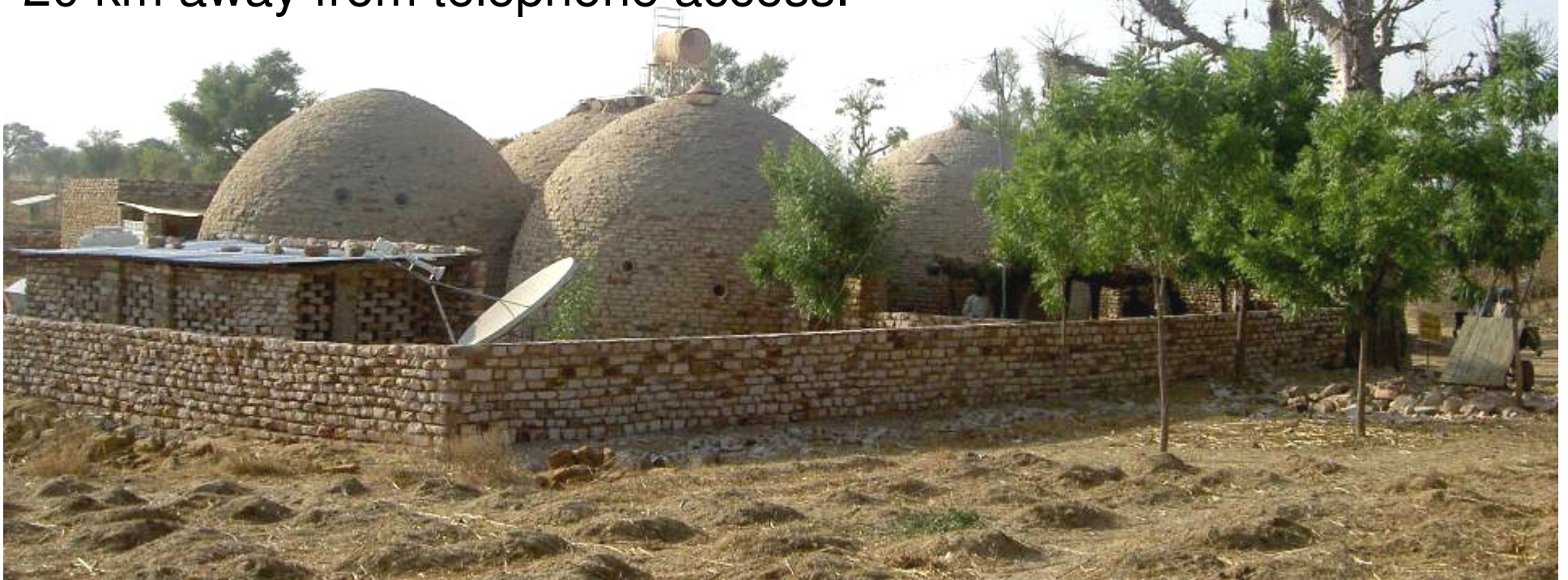
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De-isolating care professionals

Dr Diakaridia Traoré continued to serve
his community in Rural hospital in
Dimmbal, Mali.
800 km away from the capital.
120 km away from the first Internet access.
20 km away from telephone access.

HINARI reaches the most remote areas through a satellite connection

- Three other factors helped significantly in making this a successful workshop. The Internet access probably was the best from all the workshops I have conducted in HINARI eligible institutions (the satellite dish was right outside the window of the computer lab) and the IT staff were very helpful.

- http://www.mlanet.org/resources/global/lwb_elibr arytraining_workshops.html

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IHR implementation requires stable connectivity

- Under the International Health Regulations, (IHR), WHO has a commitment to countries to have a team on the ground within 24 hours and they need to be able to hit the ground running. Critical to disease outbreak response is having teams in the field that are able to communicate with each other as well as to WHO country and regional offices and headquarters. But in remote areas and inhospitable environments, telephone connections, data transmission and access to the Internet are often limited and unreliable

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Pilot in Nigeria and Pakistan Demonstrated the Utility of GIS in SIA Operation
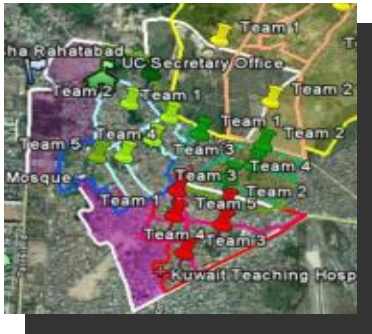
- **Digitize UC, area and team boundaries**
  - Clarify the exact team/area responsibilities
  - Identify gaps and ensure all areas are accounted for

- **Digitize team's movement**
  - Specify "ideal" movement of each day
  - Reduce risk of missing areas and enable better supervision

- **Identify the missed area during implementation**
  - Visualize the geographic gap of team's activity
  - Enables effective supervision and revisits

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Setting up a satellite for voice, data and internet

Afghanistan*1:

- Setting-up of satellite and its related hardware is relatively easy since 2001.

- Data transmission through satellite has been used in a sustainable manner since 2001.

- In addition to fixed satellite stations in multiple location, mobile unit (RBGAN) were used and satellite phones for health professionals use.

- Voice, data and internet access.

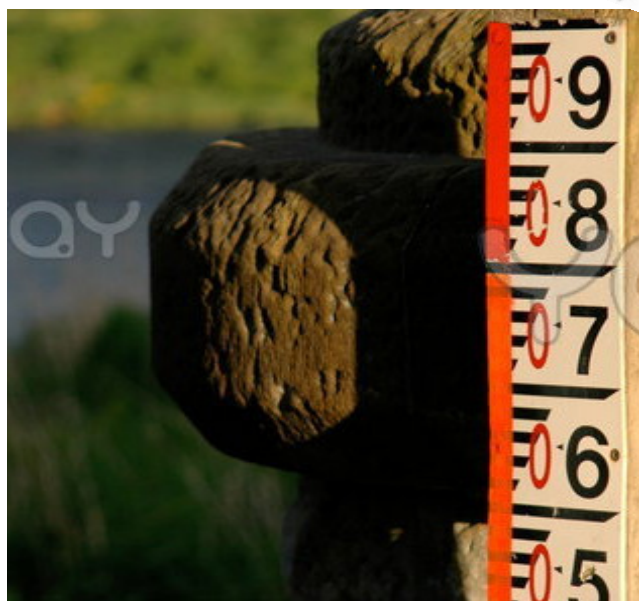*1 [Source] Eastern Mediterranean Regional Office, WHO (2001)

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Disaster and disease early warning

When water level reaches a certain point, a warning on the following will be provided:

- not only of **flooding** (ie, disasters)

- but also of **water-borne/related diseases** (eg, malaria, dengue fever, etc.)
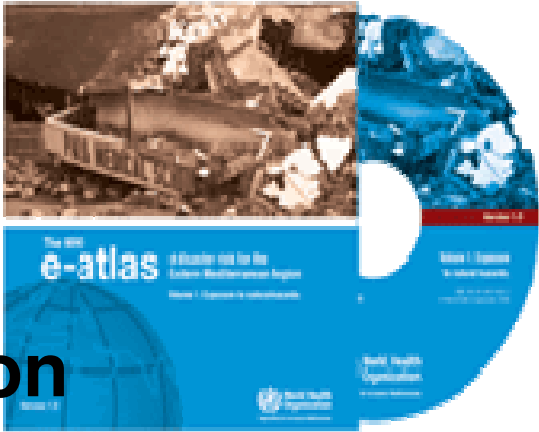
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The WHO eAtlas of disaster risk

for African Region

for European Region

for the Eastern Mediterranean Region

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International cooperation and partnerships

RAFT -

- Distance Learning program webcast, and tele-consultation forums via satellite in 18 African countries, and expanding;

Pan Africa eNetwork;

- An eNetwork covering all countries in Africa. Funded by the Indian government, and connecting hospitals and universities in each African country with their counterparts in India;

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International cooperation and partnerships

ESA

- An EC funded satellite-based project supporting health services in Sub Saharan Africa.
- WHO served as a member of the task force (WHO, EC, AUC, ADBank, African sub-regional organizations) guiding the development of the Pan African eNetwork programs;

Possible collaboration between JAXA and WHO

- Data transmission services for developing world
- Provide free services of data transmission and GPI along with mapping particularly for rural/remote areas of Pacific Island countries and Sub-Saharan Africa.
- A JAXA satellite may become a first WHO collaboration centre in the space!

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Recommendations

- Development of public-private partnerships between UN agencies, governments, national space agencies and commercial satellite companies aiming to provide free transponder space on commercial satellites with small aperture antenna in low and middle income courtiers;

- Urging ministries of telecommunications and telecommunication regulatory authorities to facilitate licensing of satellite services in countries to support the humanitarian use of satellite such health services, disaster management, eLearning and epidemiological surveillance.

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Recommendations

- Providing assistance programmes to low and middle income countries to:
  - Develop integrated national systems for the management of health data and link the systems to digital maps for use by technical programmes,
  - Build, develop and maintain a comprehensive collection of national and local digital maps including detailed administrative, health levels, water resources, transportation, hazardous areas, disaster-prone areas and health care facilities. Develop,
  - Support capacity building to acquire and use satellite images, converting them to digital maps and linking them to health data through integrated geographic information systems.

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Recommendations

- Assisting countries to develop national eHealth strategies, roadmaps and plans through:
  - Strengthening human and institutional capacity at the government level to conduct national eHealth planning.
  - Ensuring high-level political commitment to lead the process.
  - Providing technical expertise during the planning process in specific areas identified and requested by implementing countries.
  - Facilitating knowledge sharing at global and regional levels.

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Thank you

Q / A

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