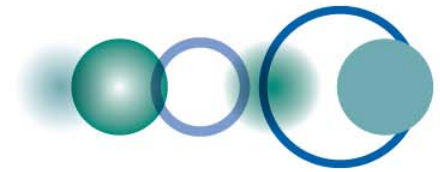


Task HE-09-03b

Towards a Globally Coordinated Malaria Early Warning System

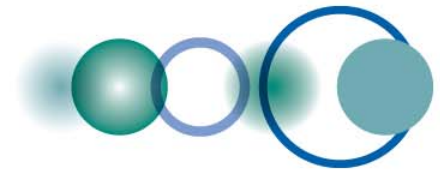
George Jungbluth
Malaria Task Lead and GEO Health CoP
Participant
US National Oceanic and Atmospheric
Administration (NOAA)
May 18 2010





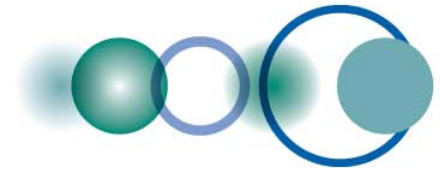
Summary

- **Individual GEO member contributions to Malaria task are ongoing** (i.e. Independently-initiated national agency activities such as NOAA satellite products and CNES risk mapping). Coordination and reporting on the task and its separate constituent activities continue via GEO and CEOS channels.
- **Despite multiple meetings of GEO Health CoP and coordination efforts between interested parties, no joint activities are underway between GEO agencies working on Malaria prediction using remote sensing.** Pilot projects have been developed with participation from multiple agencies and international organizations (i.e. GEO and WHO) but no cooperative work has been initiated.
- **Creating a global Malaria early warning network, or even pilot projects incorporating one or more remote sensing approaches to Malaria prediction, would require substantial additional resources** for in situ validation, capacity building, and infrastructure improvements in health reporting and care approaches for target regions. **Funding has not been secured** through GEO or through national participating agencies for this activity.
- **This task needs to increase links with international health organizations (WHO, relevant UN bodies) as well as national health and international aid organizations.**



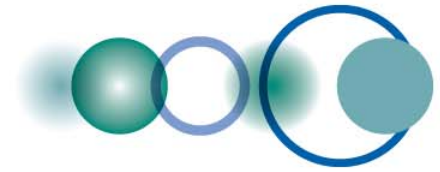
Task Definition

- Initiate a globally coordinated warning system for Malaria.
- Foster the utilization of satellite and in-situ data for monitoring environmental conditions conducive to the spread of malaria and support the development of user training for this technology.
- Priorities include:
 - (i) Develop country specific techniques to use satellite data for early malaria detection and monitoring;
 - (ii) Provide training to developing countries on satellite-based techniques used to identify mosquito habitat that stimulates the spread of malaria; and
 - (iii) Improve techniques by obtaining in-situ malaria data and feedback about the accuracy and effectiveness of the satellite data, analyses and services.



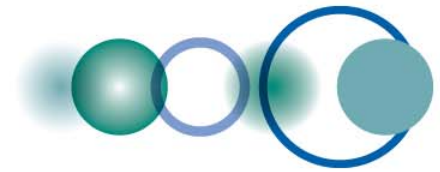
Task Participating Organizations

- CNES (France) *CEOS Task Lead* – disease transmission risk mapping and coordination projects: Argentina, Senegal, Paraguay, Burkina Faso.
- GISTDA (Thailand): Study Malaria Risk Areas In Thailand using GIS and RS and collect remote sensing data from multiple satellites covering the entire Thailand and neighboring countries.
- NOAA (US), *GEO Task Lead*: VHI-based Malaria risk product for Africa.



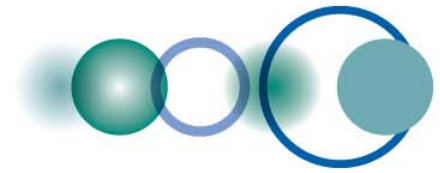
Activities

- CNES and NOAA continue to provide risk maps and Africa Malaria products, respectively (2009-present).
- Meetings of Malaria task participants and 'Malaria Community of Practice' participants at GEO Health CoP meetings in Geneva and Washington DC (2009).
- Draft pilot project for AIP incorporating best practices in Malaria early detection using remote sensing, + health practitioners in Africa and South Asia, 2010.



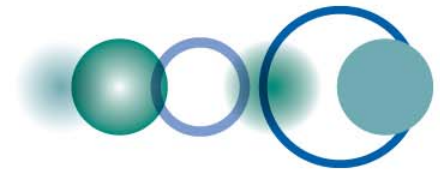
Issues and Challenges

- There are no major S&T issues for Malaria risk prediction using remote sensing, BUT
 - Approaches (instrument, observation, resolution) differ between agencies and must be compared.
 - Observations and products all must be validated using in situ observations, health records at high resolution.
 - In situ and health records reporting and information infrastructure not always available in target regions.
- Integrating even 'Best Practices' between different approaches and validating using in situ data requires extensive resources.
 - Resources are not currently available.
 - Participating agencies must make significant time and resource commitments to validation of own approaches before investigating differences between other agencies' scientific approaches.
 - Testing overall system with high-quality surveillance data (in situ) will require substantial investments to improve diagnosis, case ascertainment, and reporting through current public health surveillance systems. These system strengthening activities will take considerable time and resources.



Issues and Challenges (cont'd)

- Task participants do not reflect entire GEO Malaria 'Community of Practice'
 - NOAA, CNES, GISTDA joined by NASA, India, NASA, IRI, WHO, UN SPIDER via GEO Health CoP meetings. However not all new participants have been added to the task, or have expressed interest in participating in the task as defined.
 - Wider participation in the Health CoP has brought in new experts and interest in cooperation, but no new funding/in kind resources or programmatic support have materialized, and participation or commitment in wider Malaria CoP have not extended beyond project planning stage.
- Low levels of integration with global Malaria CoP
 - This task needs stronger links to international organizations specializing in health and Malaria issues (i.e. WHO, relevant UN organizations, global Malaria actors)
 - Participating agencies and Malaria task need more integration with national health organizations and foreign aid organizations to coordinate constituent activities with national priorities and resources allocation on Malaria prevention activities.



Summary

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