

# HIGHWAY Gap Analysis Workshop

Arusha, Tanzania, Aug 13-14 2018

Workshop Summary Slides



**WMO OMM**

World Meteorological Organization

Organisation météorologique mondiale

# Workshop Summary (I)

## General points

- One of the main goals of HIGHWAY is to improve the forecasting capabilities over Lake Victoria and its immediate vicinity
- HIGHWAY Output 2 was the focus of this workshop – in particular **ensuring better routine real-time availability of observational in situ data to the NWP community** in order to better predict the weather systems affecting lake Victoria
- **Need to improve the exchange of observational data also from those areas of the project countries that lie outside the lake basin itself**
- **Sustained operational access to observations should be prioritized over short-term efforts**
  - Acknowledge also the role of the field campaign in helping improve the knowledge and understanding of the development of night-time thunderstorms over the lake
- Region is characterized by complex topography and high climate variability
- **Typical meteorological related risks include**
  - Landslides
  - Flash flooding in the basins
  - Severe weather/ strong winds on the lakes (focus of HIGHWAY project)

# Workshop summary (II)

## NWP-related considerations

- Global NWP System can deliver model guidance for any point on the globe, but without local observations, this guidance will be of poor quality, especially in the tropics
- **Surface pressure and upper air winds are the fundamental predicted variables for NWP that cannot be measured from space;** in situ measurements provided by NMHSs are therefore vital
- **SYNOPs and TEMPs reports have both local and global impacts; TEMPs in particular are the highest impact observations in the tropics;**
- **Agreement to base HIGHWAY gap analysis on draft provisions for Global Basic Observing Network (GBON): Targets are 500 km resolution twice/day for radiosondes; 100 km resolution, hourly, for surface data**
- It was recognized that also observations used for verification only (not assimilated, e.g. rainfall data) can lead to substantial improvements in NWP

# Workshop Summary (III)

## Specific gap mitigation recommendations

- Additional stations near the lake and on islands exchanging data via the GTS to improve NWP (including verification); **Participating countries to advise on suitable locations and specifications**
- Radiosonde observations are by far the most important contributions NMHSs can make to improve quality of NWP guidance; **Stations Kampala, Dar Es Salaam and Nairobi (and Kigoma, if funds permit) should all be brought back up to a state to operate and report twice daily**
- **Strong request for moored buoys to measure both atmosphere and lake parameters (e.g. as ground truth for satellite SST)**
  - Drifting buoys not seen as appropriate for the lake; would require establishment of international mechanism for exchange/redeployment due to expected frequent beaching in confined waters of the lake

# Workshop Summary (IV)

## Other considerations and recommendations

- Some bona fide observational needs within project countries are out of scope for HIGHWAY; the project therefore needs to be realistic in its presentation of what it can provide in terms of infrastructure and not “oversell” its scope;
- **Agreement on the importance of having national WIGOS Plans ready** – if the **unmet needs are well documented, future projects are more likely to be successful**
- 3D-PAWS stations are not seen as meeting operational needs for surface observations – the NMHSs are not involved in the network design or in the manufacturing of the stations; no influence on QC of neither hardware nor data;
- WMO guidance on how to engage with third-party data providers (such as TAHMO, Earth Networks, etc.) is strongly requested, to ensure compliance with national policies, regulations and guidelines
- **Need for WIGOS Stations Identifiers (WSI) and metadata for all stations** (OSCAR/Surface)
- General need to involve WIS in the project; issues regarding data availability often found to be WIS-related

# Workshop summary (V)

## National capabilities/priorities listed during final discussion

- **Uganda:**
  - **One upper air station**, making 1 ascent/day; not at all used locally (training required)
  - 40 AWS's are not under UNMA administration, and UNMA not receiving the data
  - 35 are UNMA-owned, but are “not configured”, so UNMA is not receiving the data
  - No stations on the islands
- **Kenya:**
  - 39 manned 24.h synoptic stations; 111 AWSs
  - **Three upper air stations**, only one transmitting (Dagoretti/Nairobi) only once/day
- **Rwanda:**
  - 56 AWS (10-minute resolution), all operational (not shared internationally); who installed, and could data be exchanged internationally?
  - Radar data storage and backup, radar spare parts are challenges
- **Tanzania:**
  - One upper air station (status of additional 3?); none reporting; one pilot balloon station, two required
  - 10 lightning detection stations required
  - Introduce AWS and radar data in data assimilation
  - **Revive upper air stations**
  - Strengthen radar network and the AWS network

# Next steps

- Secretariat will share the slides edited after the workshop
  - 31 Aug 2018
- Comments back from participants
  - 7 Sep 2018
- Secretariat will incorporate comments received during and after the workshop
  - 14 Sep 2018
- Secretariat will arrange for a HIGHWAY Steering committee meeting
  - TBD
- The final list of priorities will be presented to the HIGHWAY Steering Committee for their consideration – at the meeting
- Secretariat will draft and share a final report from the Workshop
  - 28 Sep 2018

# Thank you

[www.wmo.int/wigos](http://www.wmo.int/wigos)



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