

**The 9<sup>th</sup> AWCI International Coordination Group (ICG) Meeting  
and the Workshop on Climate Change Adaptation organized by APWF**

**Mongolia input to the AWCI Phase 2 Implementation Plan**

G. Davaa

Institute of Meteorology, Hydrology and Environment, Mongolia

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## CURRENT ISSUES, PROBLEMS AND STRATEGY FOR SOLUTION

### THE FOLLOWING COMMON KEY ISSUES AND PROBLEMS HAVE BEEN IDENTIFIED IN A BASIN, **MONGOLIA**

1. TEMPERATURE AND DRYNESS ARE INCREASED DUE TO CLIMATE VARIATION AND CHANGE (**Glacier melt, permafrost degradation, drying rivers and lakes, decrease in ground water level, natural desertification**).
2. USE OF FORESTS (**use of riparian forest, shrubs, mountain forest for various societal and economic needs (forest logging, use as fuel, wild fire)**)
3. OVERGRAZING AND MINING (**change in traditional style of nomadic farming (dominance of goat in a herd, shifting nomadic pastoralism to semi-settled or permanent pastoralism), illegal mining (Ninja) and non-responsible mining, associated with lack of infra-structure**)
4. UNSUSTAINABLE USE OF WATER (**irrigated farmland, haymaking field and industrial uses**)
5. ENVIRONMENTAL POLLUTION (**low efficient waste water treatment plant, population movement, air and soil pollution, leading to terrestrial and aquatic ecosystem degradation**)

### THE COMPLEX FACTORS LEAD TO DESERTIFICATION

**Mitigation to desertification** as degradation of land, caused by a variety of factors, such as climate change and human activities, **could be a development and implementation of IRBM strategy and plans.**

**"Integrated river basin management (IRBM) is the process of coordinating conservation, management and development of water, land and related resources across sectors within a given river basin, in order to maximize the economic and social benefits derived from water resources in an equitable manner while preserving and, where necessary, restoring freshwater ecosystems."** *Global Water partnership, Technical Advisory Committee Background Papers, No. 4, 2000.)*

*There are ongoing projects:*

*“Ecosystem based adaptation approach to maintaining water security in critical river catchments in Mongolia” funded by Adaptation fund. (2 river basins in the Altay glacier Mts. and 1 river basin in semiarid steppe region have selected as project implementation sites.)*

*“Strengthening integrated water resources management in Mongolia” funded (to develop National IWRM strategy and plans and IWRM plans for selected and economically important river basins).*

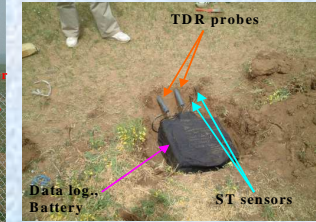
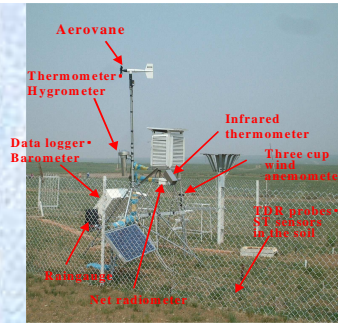
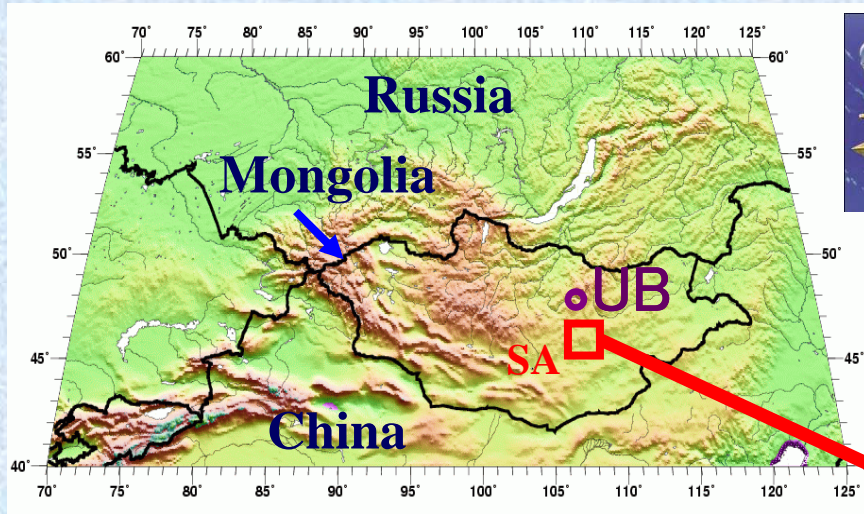
*“Hydrological and water resource distribution modelling for Buyant river flow and assessment of future climate impacts” (HbV , Sobek and Reg.CM)*

Technological needs assessment for climate change adaptation in economic sectors, Mongolia

# Implementation proposal

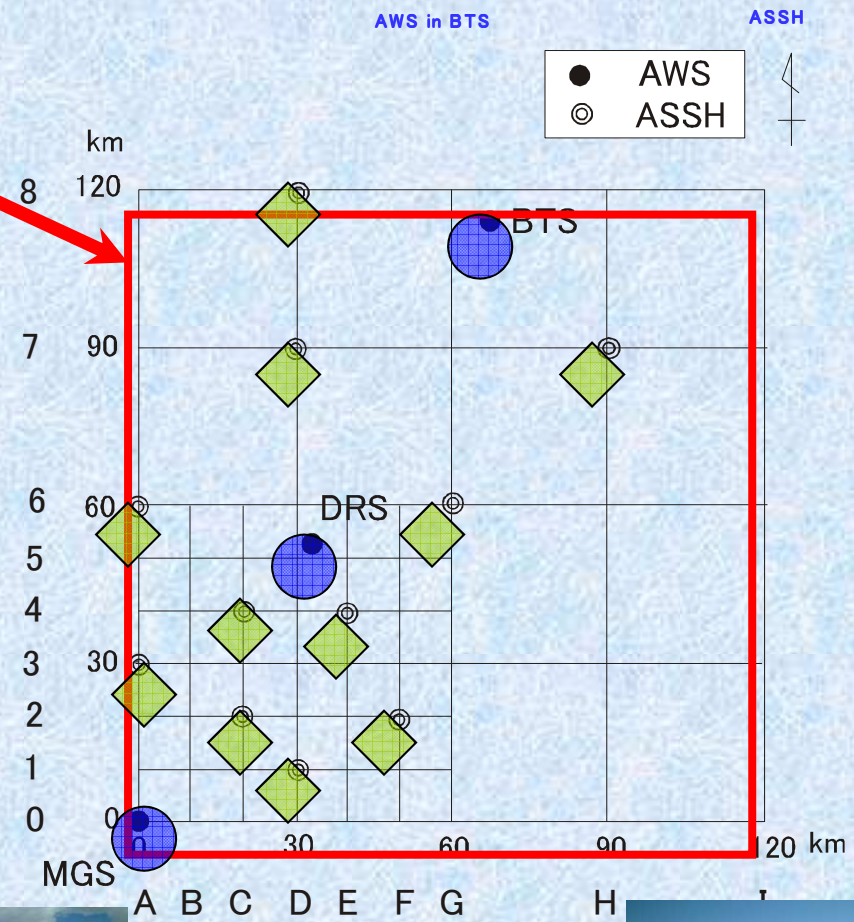
- 1. Mongol AMSR-2/AMSR-E/ ALOS validation experiment (MAVEX), Lead by Prof. I. Kaihotsu, University of Hiroshima and Prof. T. Koike, University of Tokyo, Japan (GCOM-W2 (SHIZUKU) and ALOS-2 as an option) - optional*
- 2. Water and energy budgets and modeling in Selbe, Tuul river, Mongolia (the river basin is included in the catalog of rivers in South East Asia, UNESCO-IHP) and Ulaan-Am river basins (in the Altay Mts.) (to support IWRM in these basins and to focus on extension of existing water cycle observation network, climate change assessment including downscaling, modeling, demonstration.*





# MAVEX: Mongol AMSR/AMSR-E/ALOS Validation Experiment (PI: Prof. Ichiro Kaihotsu, University of Hiroshima, Japan)

Purpose: in situ monitoring for validation of soil moisture measurement algorithms of satellites  
 Working stations in the MAVEX study area as of Dec., 2011 ( ● :AWS (Automatic Weather Station), ◆ : ASSH Automatic Station for Soil Hydrology), SA : Study area of AMPEX/MAVEX, UB: Ulaanbaatar )  
 A few stations of MAVEX are also for CEOP/AWCI.



## Specific request to GEOSS and to international community (data/tools accessibility)

**Use of early warning systems for drought and flood**

**Use of GEOSS products (MOLTS, Satellite (GPM, soil moisture (MAVEX), lake and glacier (ALOS, GCOM-W1 antenna installation), natural disaster monitoring, Numerical Weather Prediction, Reanalysis, Climate Projection)**

**Global and regional research results on water and energy budget monitoring, modeling and prediction**

**Capacity development needs:**

**Distributed hydrological modeling**

**Remote sensing data application**

**Downscaling technique in river basin scale**

**Training ( ICHARM, UNU, UN-CECAR and etc).**

**Thank You**