



Hydrometeorological Observation Systems in Georgia

RA II / RA VI Workshop on WIGOS
Minsk, Belarus

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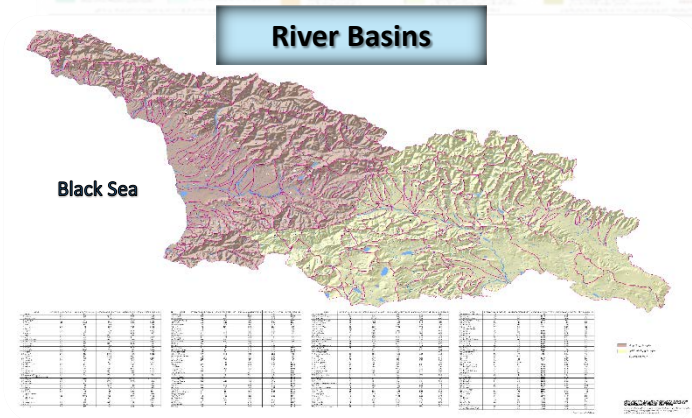
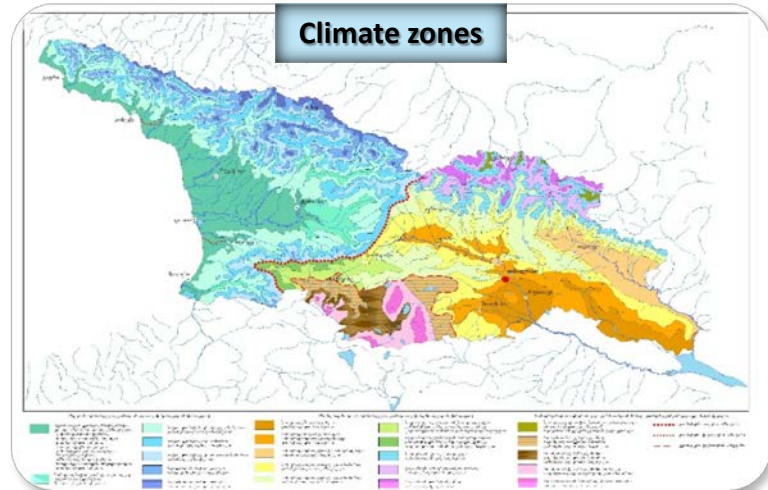
13th September 2017



The Greater Caucasus and the Lesser Caucasus ranges join with the Likhi Range which, at the same time, divides Georgia into two contrasting climatic zones: Western and Eastern Georgia.



Due to the complex mountainous topography, different climate conditions and hydrographic situation (dens network of rivers) Georgia belongs to a highly hazard-prone region



National Flood Susceptibility Map of Georgia

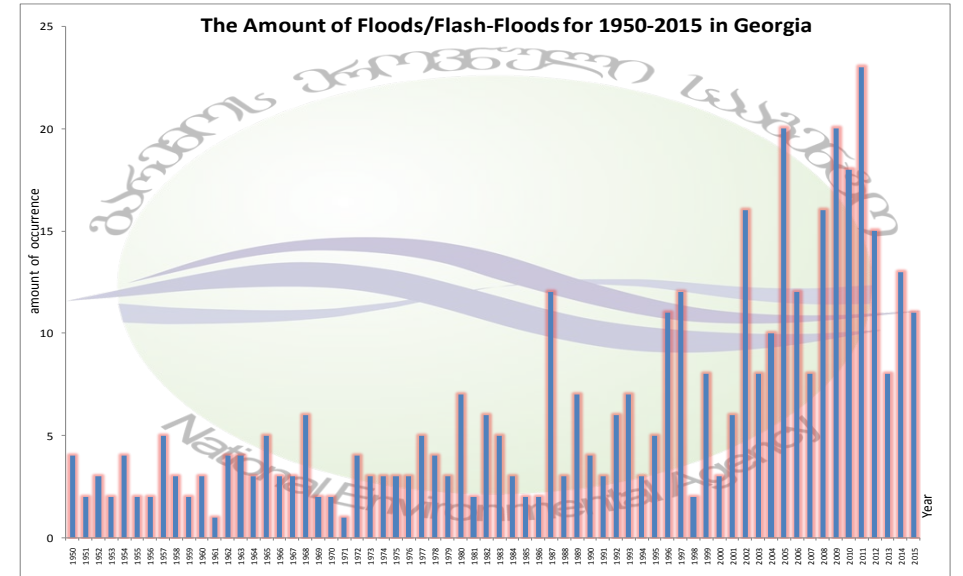


Made by Irakli Megrelidze and Dr. M.W. Menno Straatsma;
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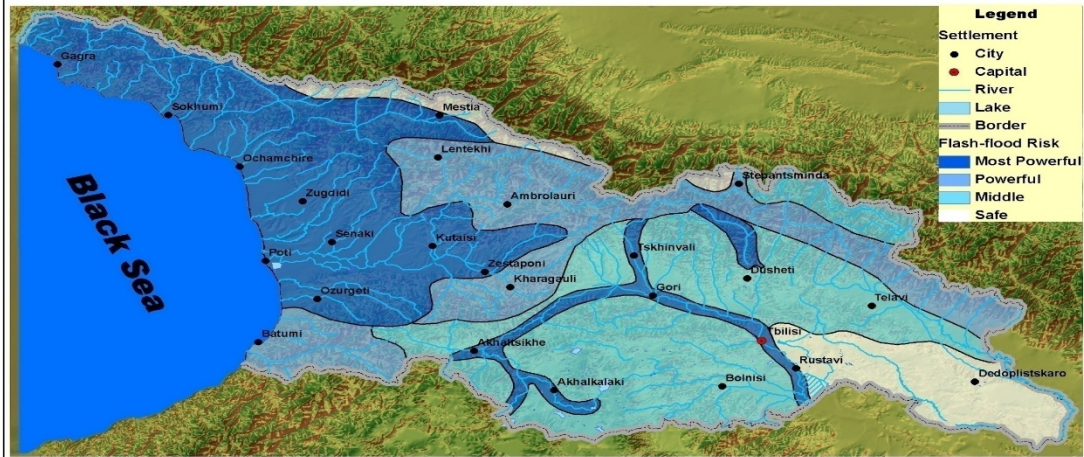
ITC CENN Caucasus Environmental NGO Network National Environmental Agency



over the last 15-20 years amount of Flood/Flash-flood event have significantly increased



Flash-flood Risk map of Georgia



National Environmental Agency

1:2,000,000



HYDROMETEOROLOGICAL DEPARTMENT

Functions and Current Activities

- ✓ Formation of databases of long-term hydrometeorological data and definition of climatic and hydrological regimes of the county's territory on its base
- ✓ Preparation and dissemination of short, medium and long-term weather and hydrological general and special forecasts
- ✓ Preparation and dissemination of early warnings about possible hydrometeorological events
- ✓ Provision of Hydro-Meteorological observation Data



Automation of standard observation



Introduced: (Transmet, Synergy), satellite meteorological information receiving system, modern system for visualization of synoptic production, weather forecasting models with relatively high intelligibility



Substantial part of multi-year hydrometeorological data was digitalized



Introduction of floods/flash floods hydraulic model in river Rioni basin; Implementation of bank protection measures and elaboration of respective construction projects



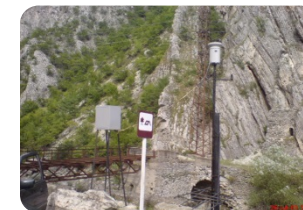
Extension of observation network



Restoration of agrometeorological network



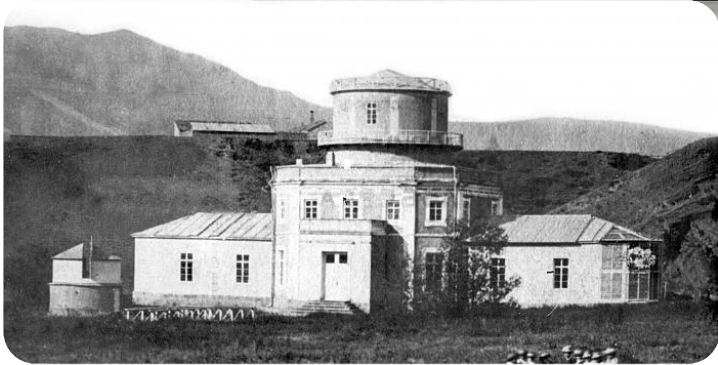
Establishing of radar system



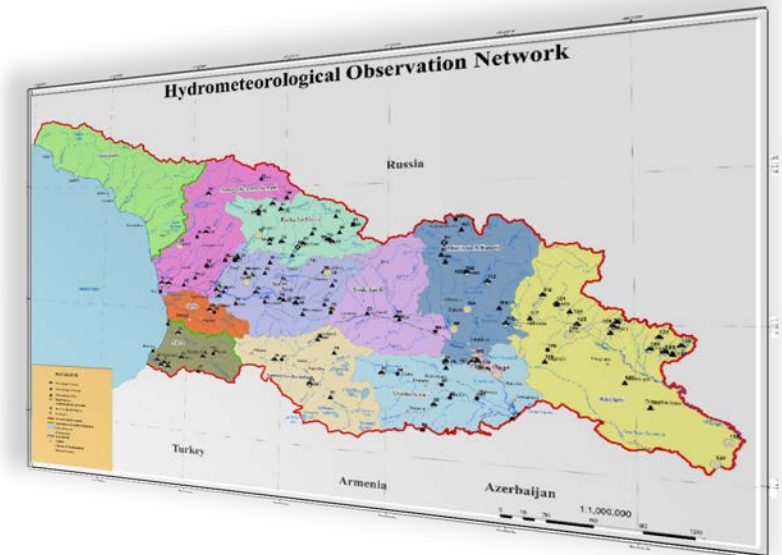
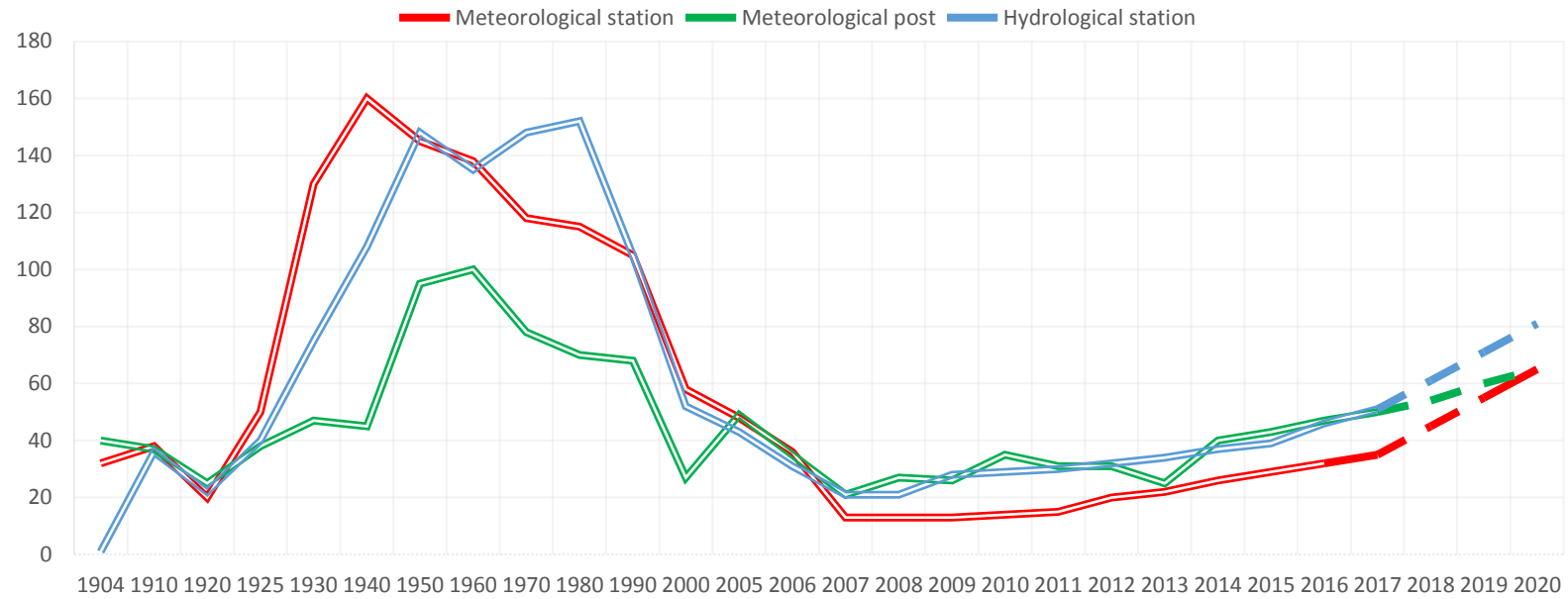
Hydrometeorological Observation

The regular meteorological observations in Georgia started since 1844 year

Tbilisi meteorological station was established in 1837 year and correspondingly Batumi - 1881 year, Poti Port - 1894 year.



Rehabilitation and extension of The weather and hydrological monitoring network



Radars Observation

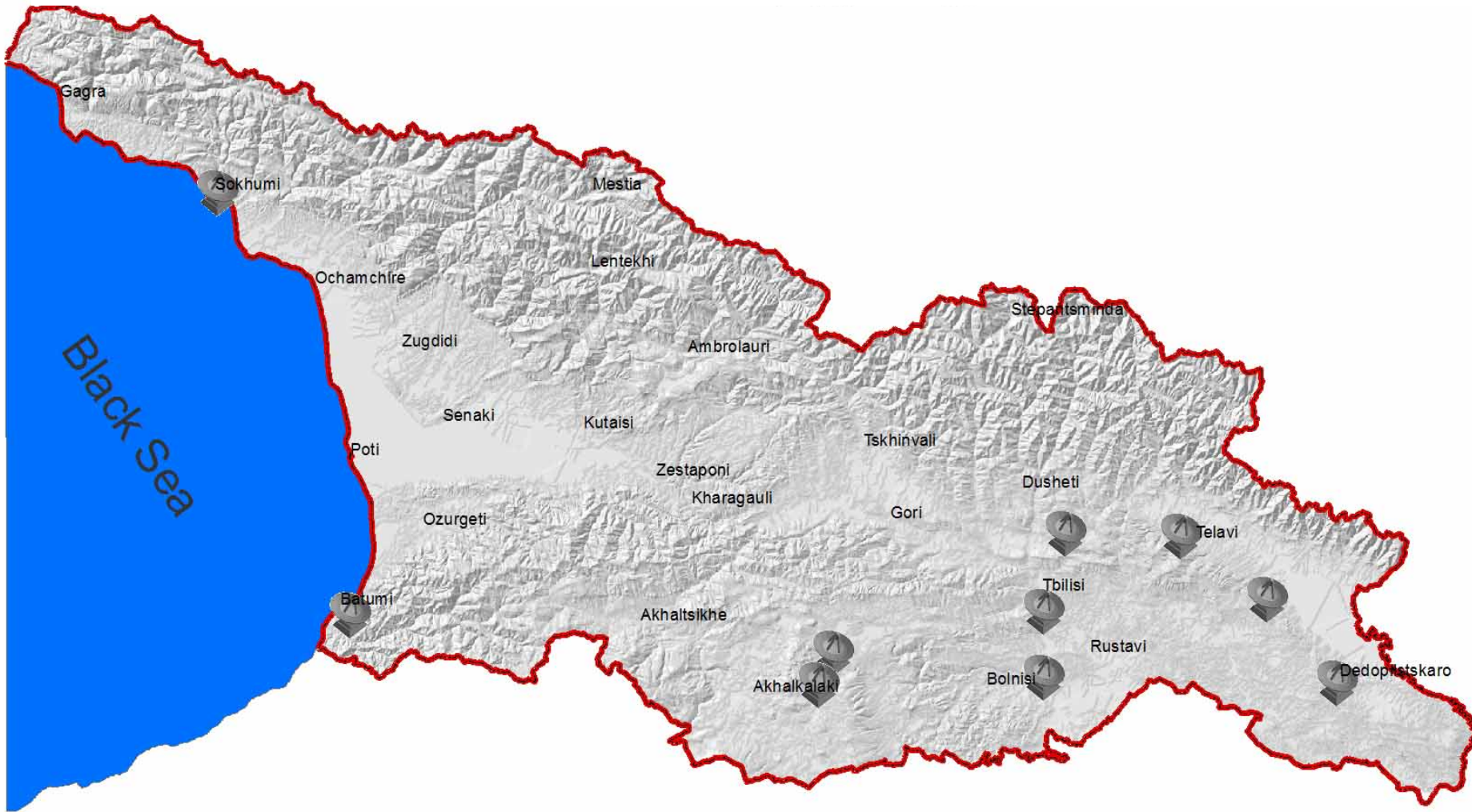
History Of Using Meteo Radar in Georgia

Radars were working for anti hail system before dissolution of Soviet Union (1991) MRL 5.

After dissolution of Soviet Union, Radas have changed their function.



Radar points(1990)





From 2015

Selex ES

METEOR 735C (C-BAND)

Owner - STC "Delta"

Using For Anti – Hail System

Client - "Nea"

Using For Early Warning

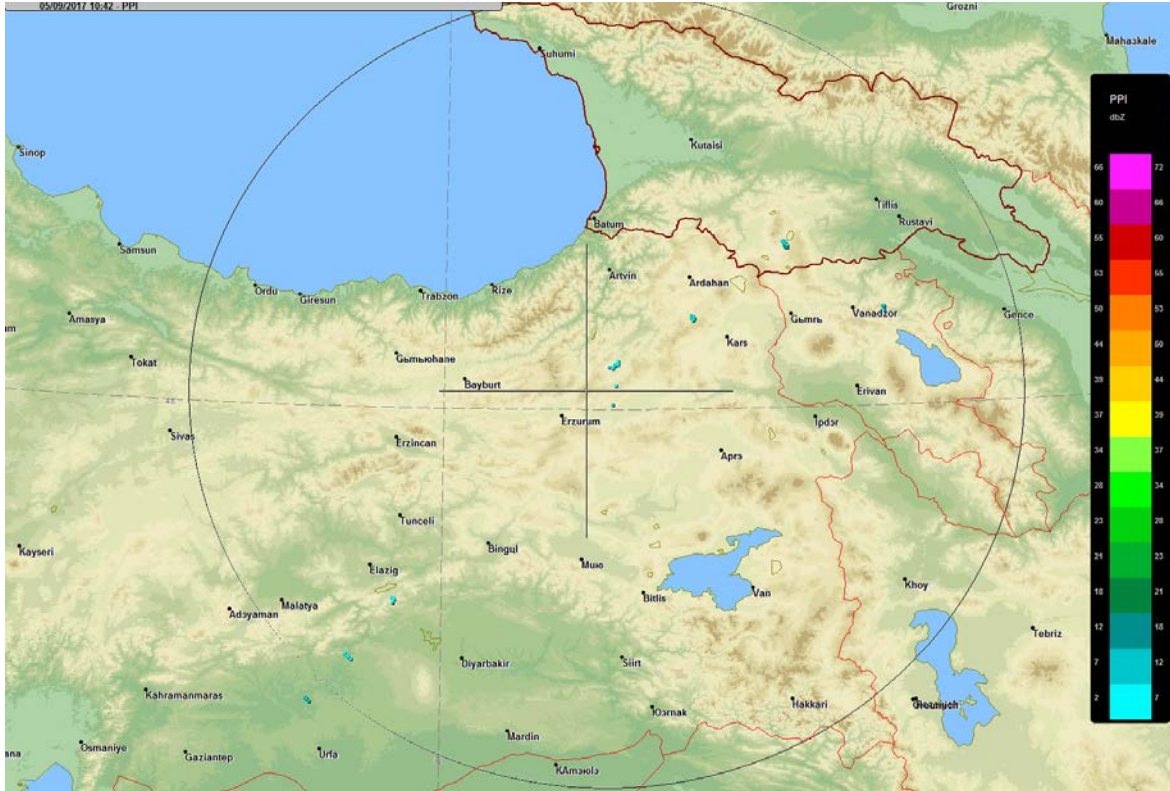


From 2017



EEC
DWSR-2001X (X-BAND)
Owner – “Airnavigation”

Turkish meteorological radars



Erzurum



Trabzon

Lightning Observation – from 2017 (Earth Networks)



Tbilisi Station



Kutaisi Station

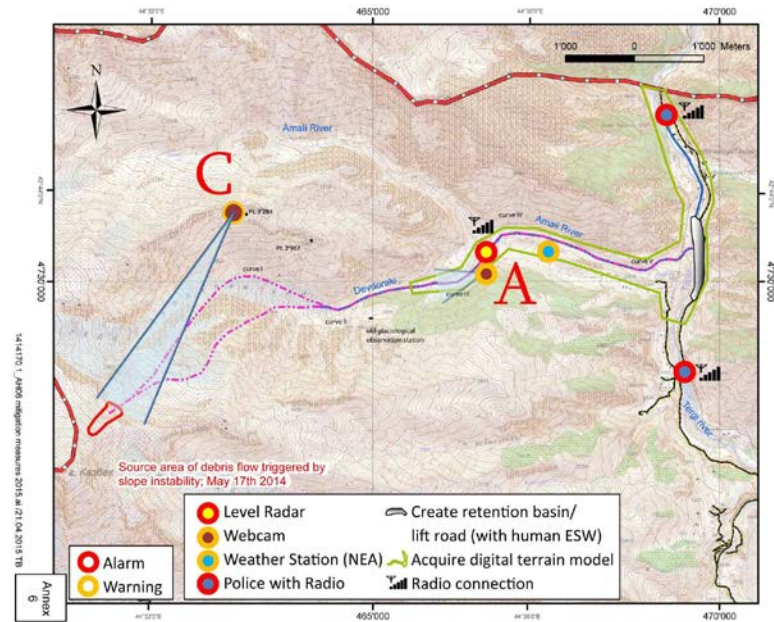


Road Meteorology

Based on Czech Development Agency project since 2016 Georgia holds 4 road meteorological station.



Early Warning System on Devdoraki Glacier (2016)



GEOTEST
 GEOPREVENT
 Conceptual Design of Mitigation Measures for 2015 - scale 1:30'000
 Georgia, Kazbegi, Devdoraki Area
 Prepared by: GEOTEST
 No. 14.14.170.1



2017-08-14 GET 10:08:44



GEOTEST/GEOPRAEVENT

14.08.2017 10:08:44

Problems related to observing systems

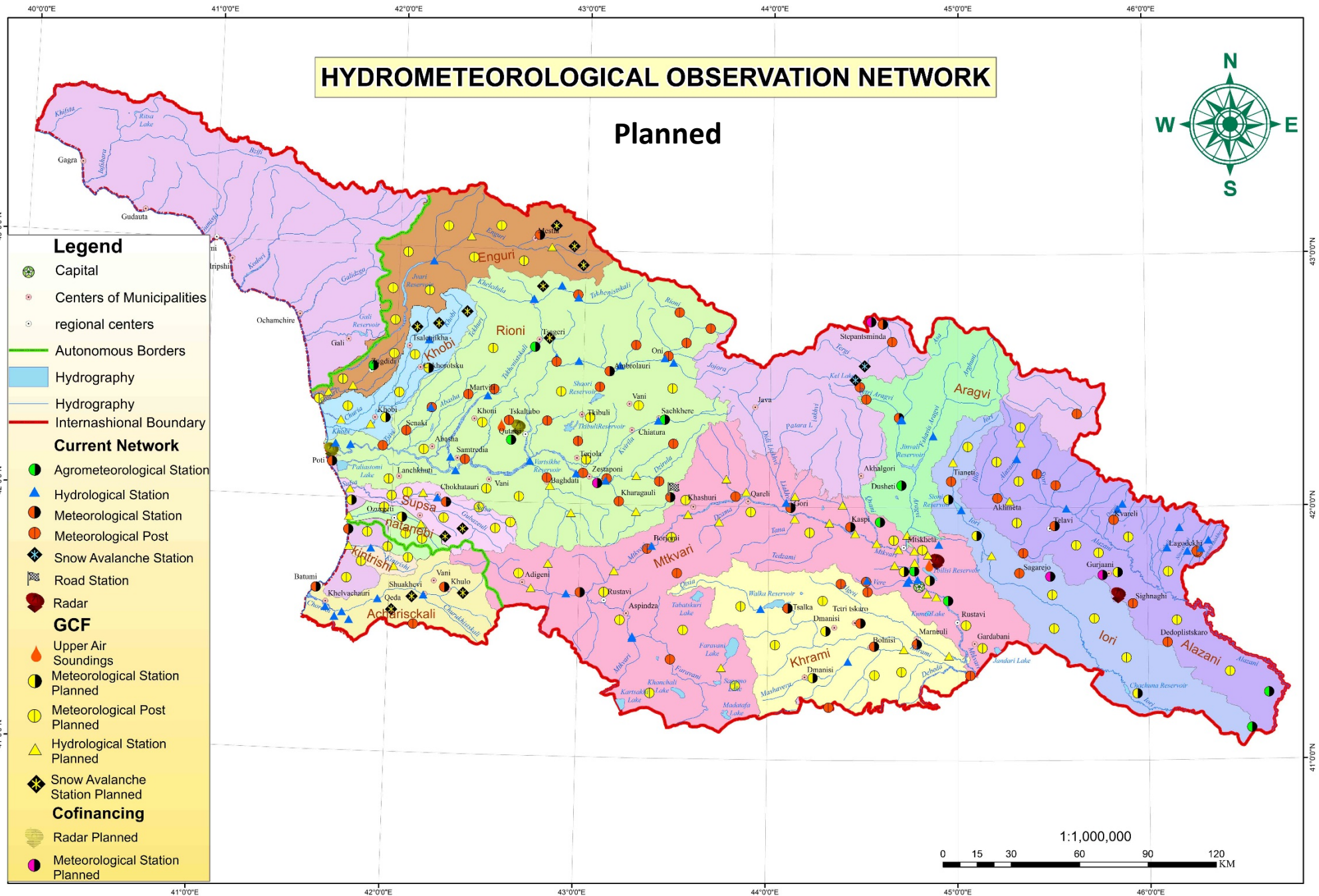
- No upper air sounding monitoring (after 90`s stopped);
- No Calibration Laboratory;
- Lack of technical staff;
- Different observing systems (different data loggers & data files);
- Lack of hydrometeorological observation stations;
- No fully coverage of Radar observation;
- Vandalism;



Planned activities in the near future

- Green Climate Fund (GCF) project (fully rehabilitation of hydrometeorological net);
- USA government project – 1 weather Radar (waiting for the tender announcement);
- From the state budget in 2019 2 upper air sounding stations;
- From the state budget Annual procurement of hydro and meteo stations (10 meteo & 10 hydro station every year).



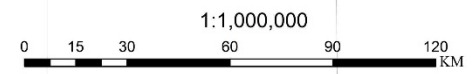


HYDROMETEOROLOGICAL OBSERVATION NETWORK

Planned



- Legend**
- Capital
 - Centers of Municipalities
 - regional centers
 - Autonomous Borders
 - Hydrography
 - Hydrography
 - Internashional Boundary
- Current Network**
- Agrometeorological Station
 - Hydrological Station
 - Meteorological Station
 - Meteorological Post
 - Snow Avalanche Station
 - Road Station
 - Radar
- GCF**
- Upper Air Soundings
 - Meteorological Station Planned
 - Meteorological Post Planned
 - Hydrological Station Planned
 - Snow Avalanche Station Planned
- Cofinancing**
- Radar Planned
 - Meteorological Station Planned



Thank you for your attention

