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INTERNATIONAL CONFERENCE "TOWARDS THE 6TH WORLD WATER FORUM - COOPERATIVE ACTIONS FOR WATER SECURITY"

DR.MOLDOBEKOV BOLOT
PROF.DR. HELMUT ECHTLER

MAY 12-13, 2011
TASHKENT, UZBEKISTAN

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Project

WATER IN CENTRAL ASIA (CAWa)

financed by Ministry of Foreign Affairs of Germany

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CAWa project partners

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In CAWa project CAIAG is involved in activity of 3-packages :

- WP 1 - Hydro meteorological Monitoring network and Geodatabase
- WP 2 - Regional Water Resources and Climate Modelling
- WP 4 - Education and Training

WP 1 - Hydro meteorological Monitoring network and Geodatabase.

In the framework of CAWa project WP1 installed stations:

- HyMet 01 – monitoring station, **Baytik**
- HyMet 02 (MRZ -1) - monitoring station, **North Inylchek**
- Hy Met 03- smart station TARA, **Taragay**
- HyMet 04 KEKI, monitoring station confluence of the rivers **Kokomeren and Dzhumgal**

All stations are remotely controlled by the GFZ specialists in CAWa project. Up-to-date transboundary network of hydrometeorological monitoring stations, with included automatic sensors and satellite data transfer in the real time mode

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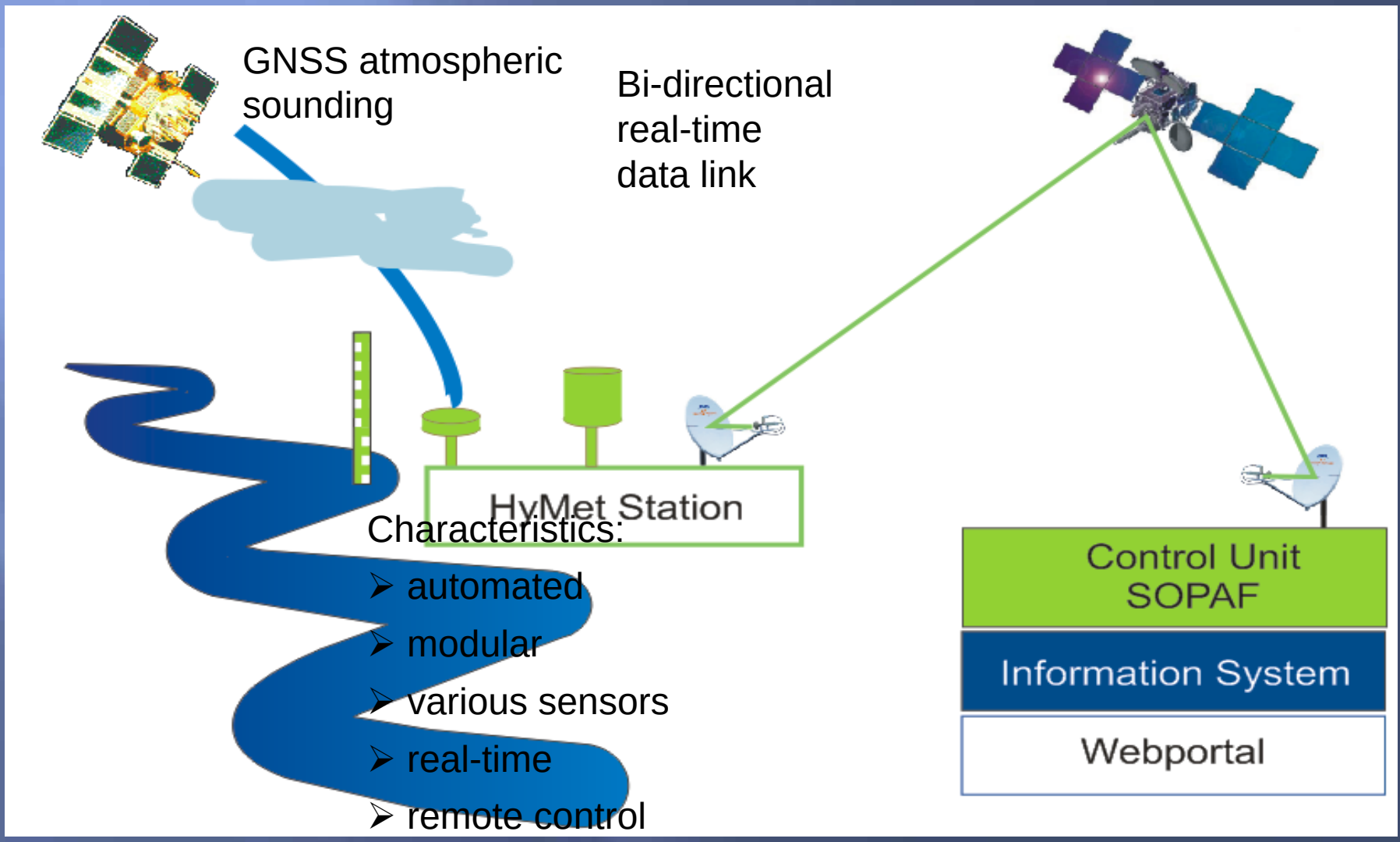
HyMet Regional Monitoring Network



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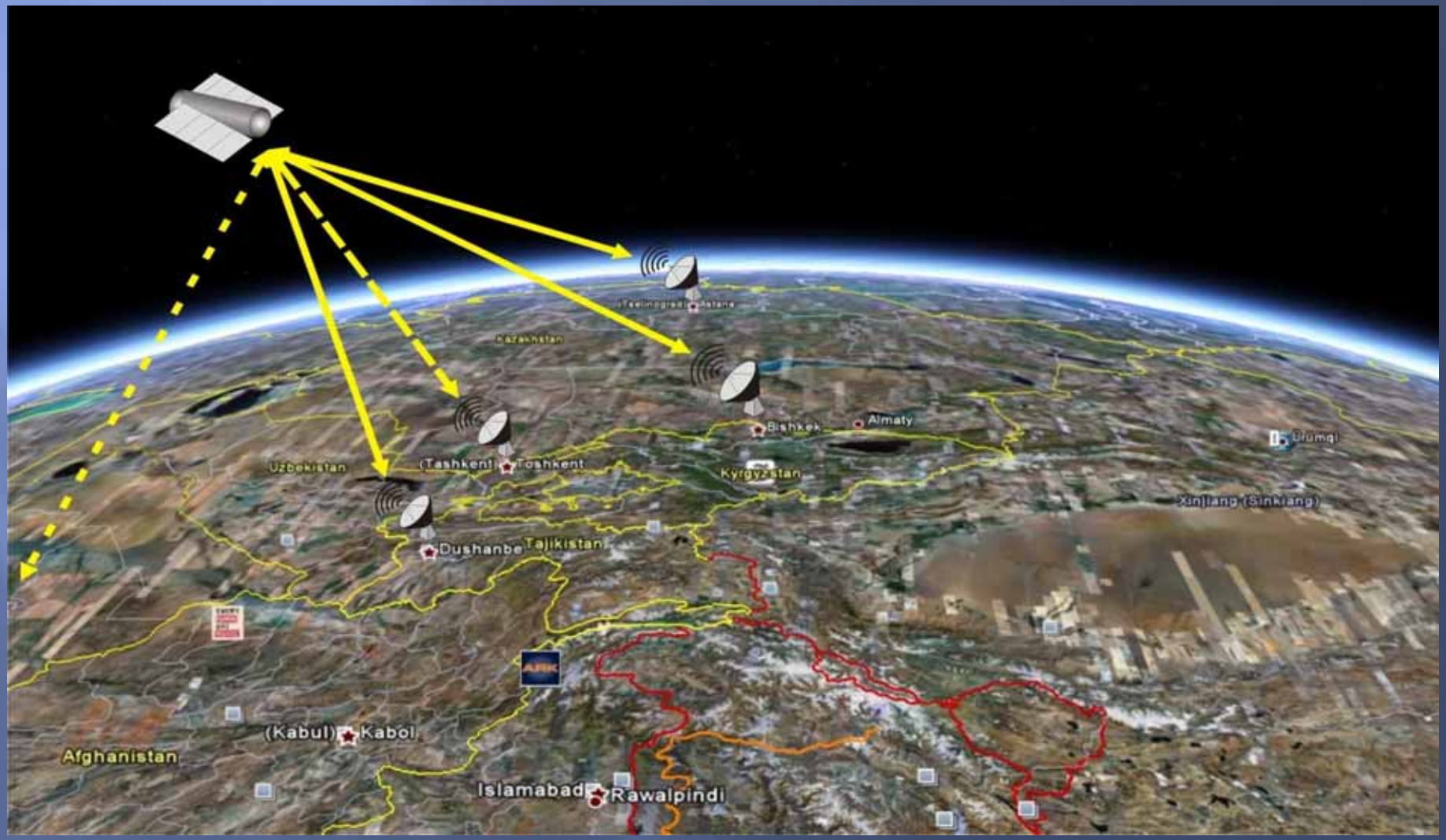
The Data Exchange System



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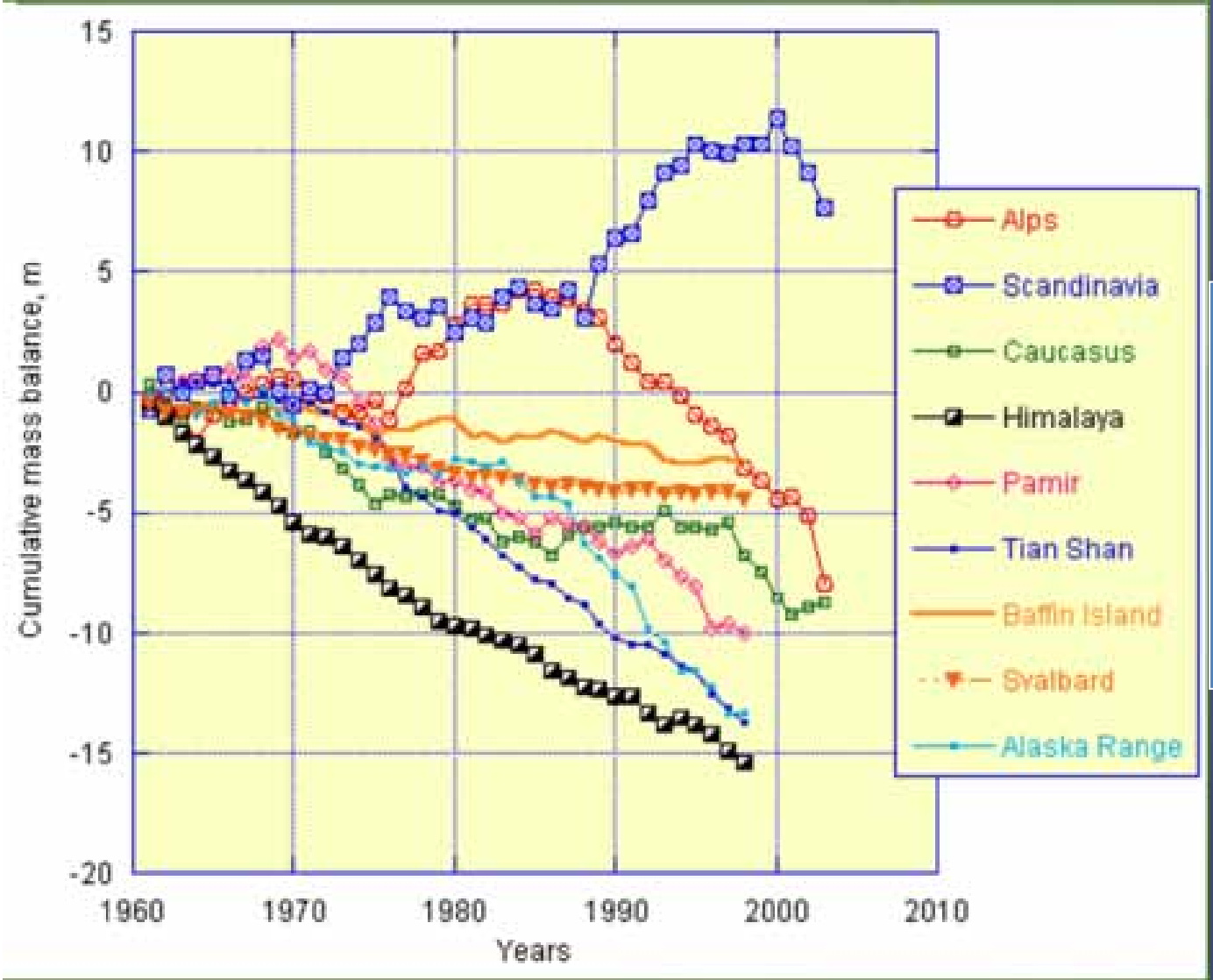
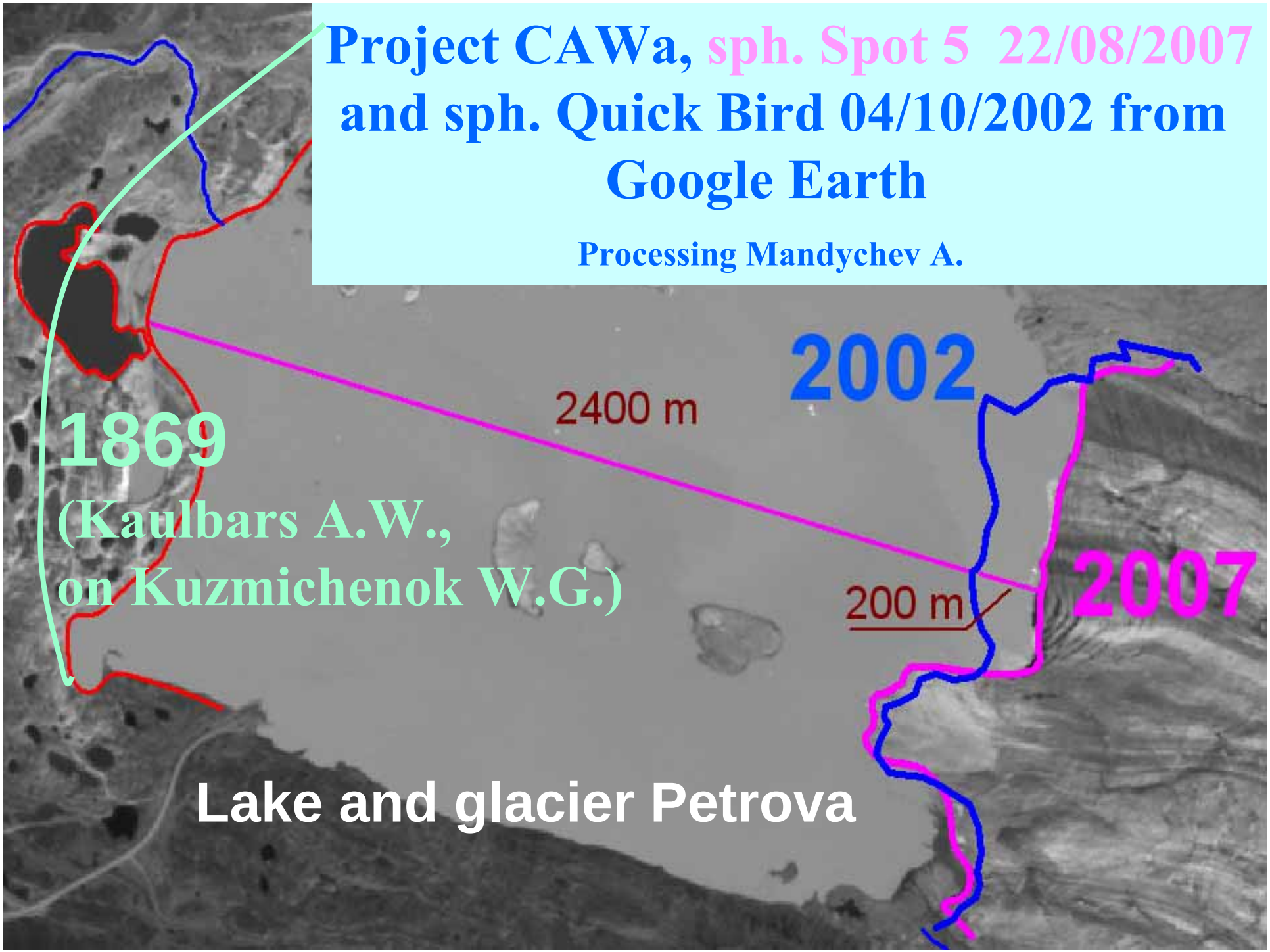
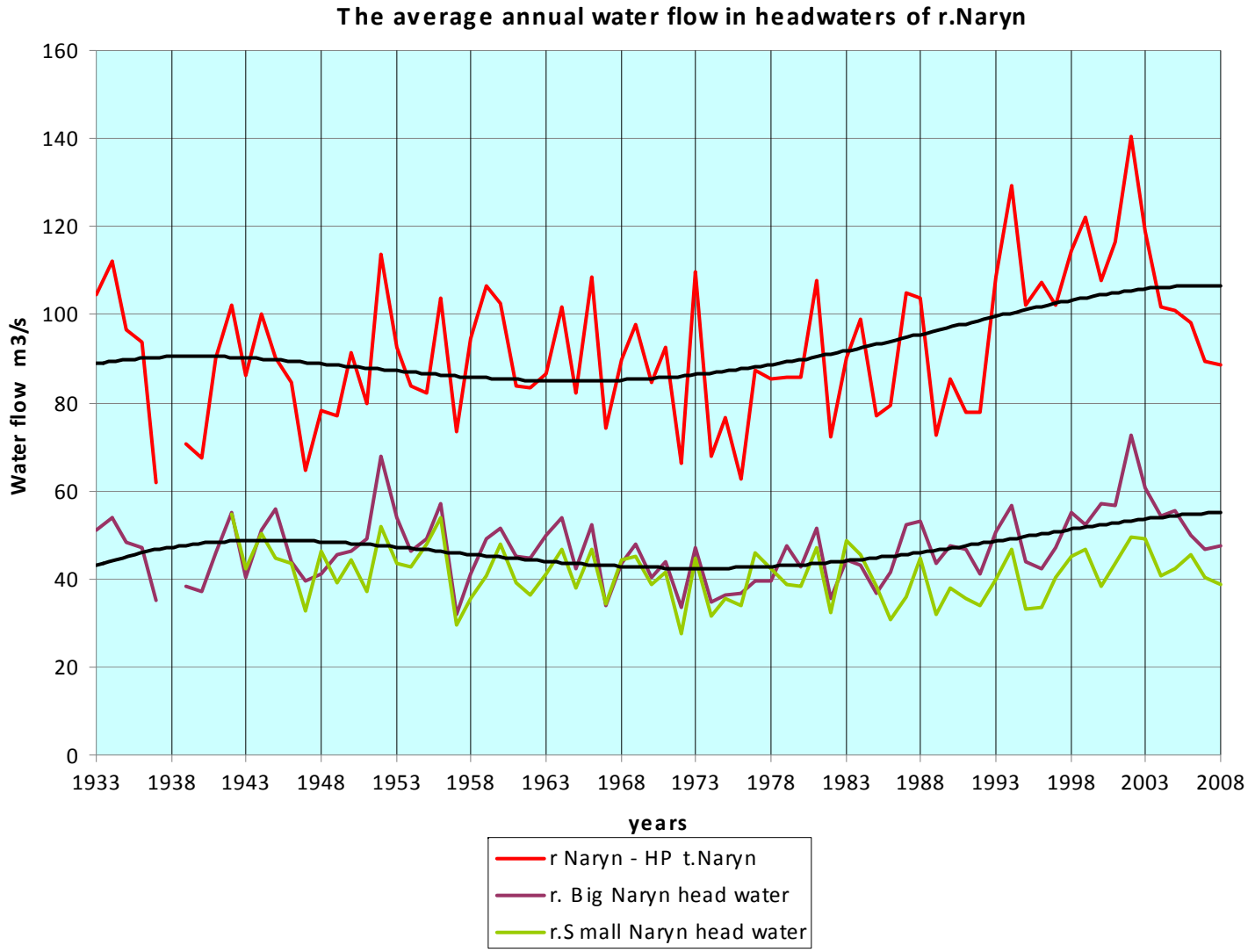


Dyurgerov and Meier, 2005

Kyrgyzstan glaciers

V_w=495 km^3


Project CAWa, sph. Spot 5 22/08/2007
and sph. Quick Bird 04/10/2002 from
Google Earth
Processing Mandychev A.
2002
2400 m
1869
(Kaulbars A.W.,
on Kuzmichenok W.G.)
200 m
2007
Lake and glacier Petrova


The average annual water flow in headwaters of r.Naryn
Water flow m3/s
160
140
120
100
80
60
40
20
0
1933
1938
1943
1948
1953
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
years
r Naryn - HP t.Naryn
r. Big Naryn head water
r.S mall Naryn head water

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CAWa monitoring station

HM-01 (Baytik)

HM-03 Taragay (TARA)

HM-04 Kokomeren (KEKI)

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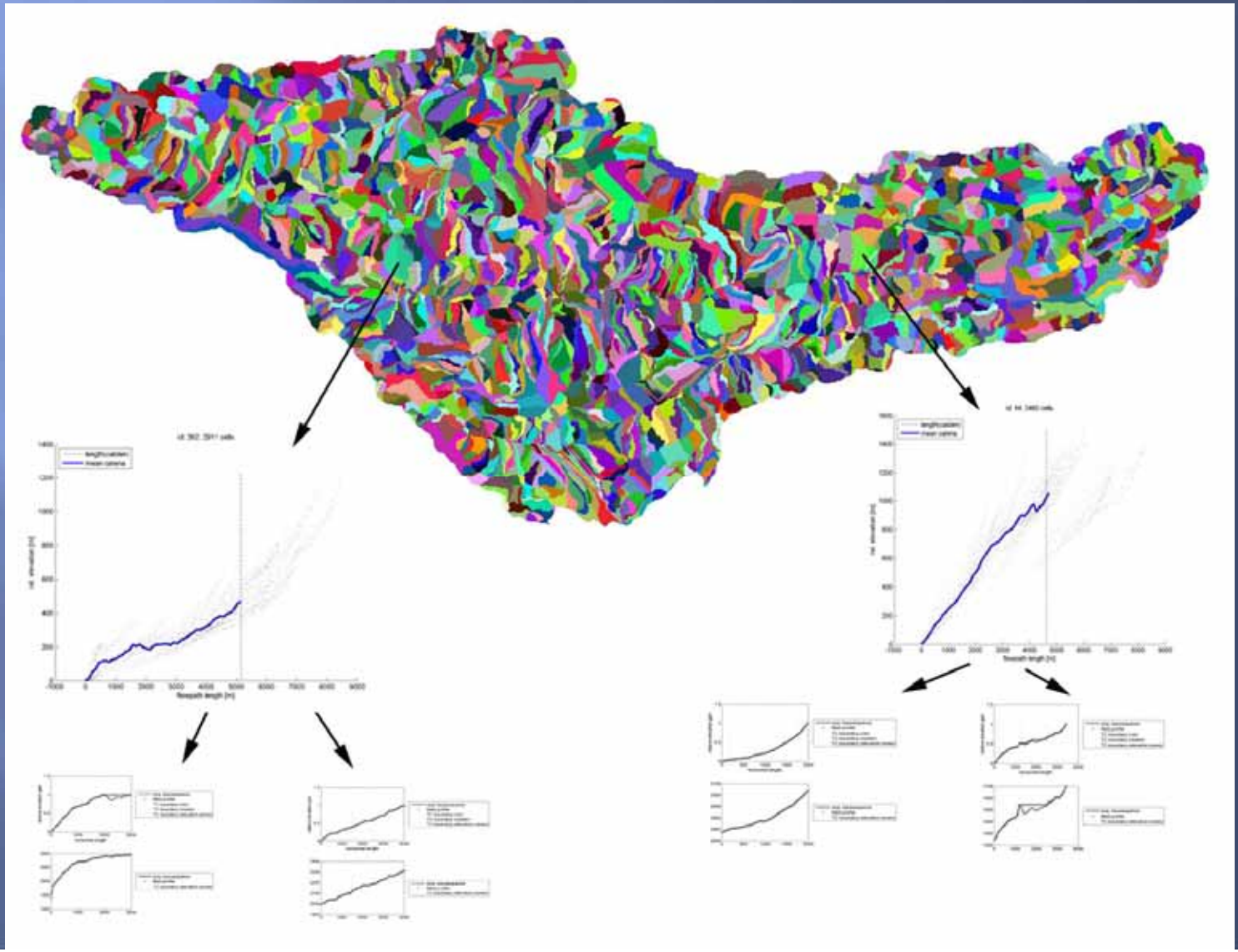
WP 2 - regional water resources and climate modelling

Processing of the fact parameters on basin r. Naryn for calculation of a drain in hydrological model WASA



WP 4 - Education and Training

- **Meetings of Hydromets of CA. Bishkek, Kyrgyzstan**
- **International Scientific Symposium, Water in CA. Tashkent, Uzbekistan**
- **Training Course ”Hydrometeorological Monitoring Network and Geodata Bases“ Potsdam, Germany**

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HydroMet Working Group Meetings in the frame of CAWa project

1st Regional WP1 Workshop

Development of hydro-meteorological monitoring network in CA for improvement of forecasting river runoff

October 13-14, 2008

December 17-18, 2009

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Training course “Hydrometeorological Monitoring Network and Geodata Bases”

December 14 -16, 2010, GFZ, Potsdam, Germany

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Global Change Observatory in Central Asia (GCO CA)

High Elevation Station
"Gotfried Mertzbacher"
on the Southern and Northern Inylchek
(Central Tien-Shan).

Project is being implemented together
with GAIAG and GFZ.

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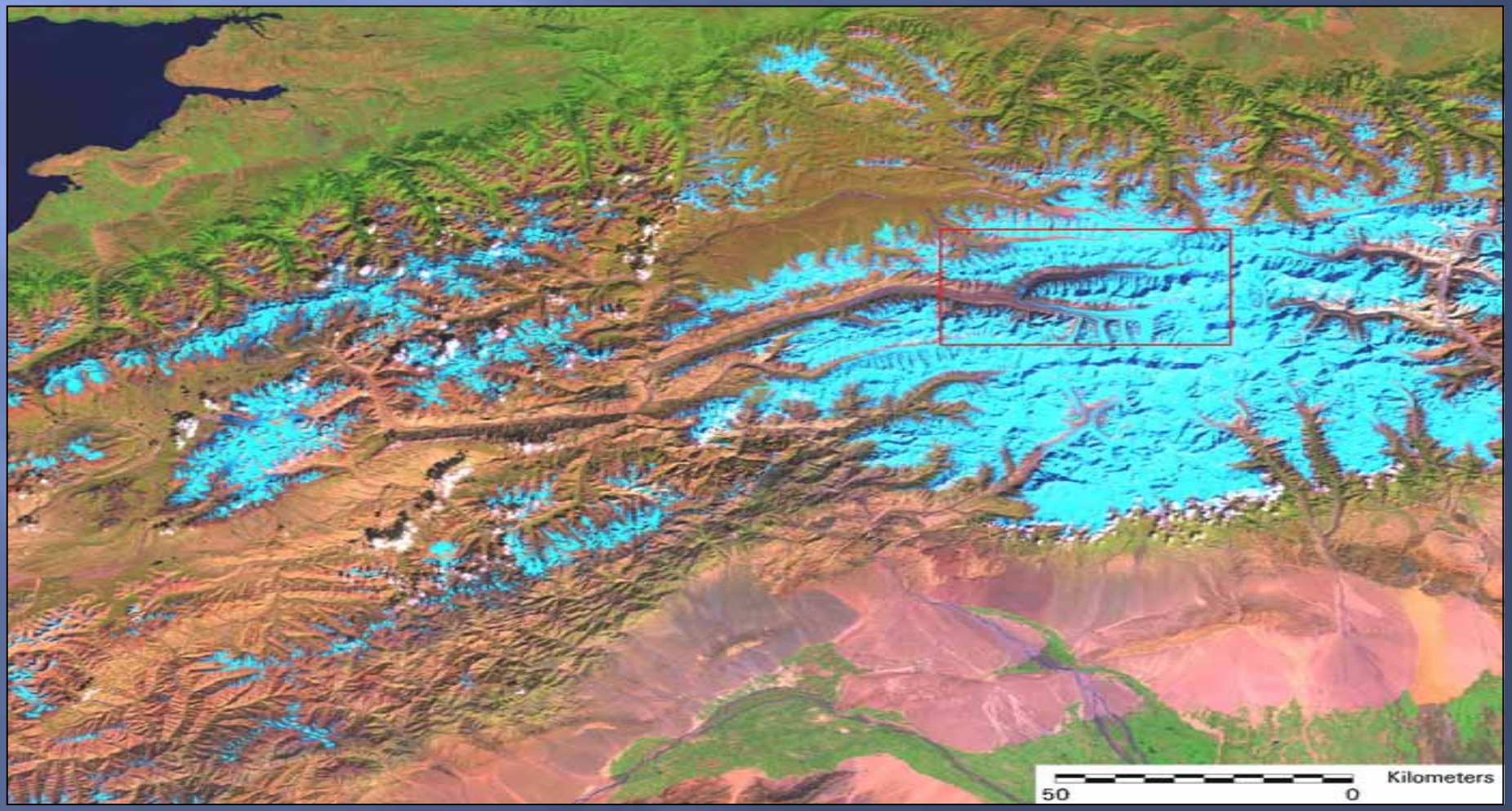
Investigated area is located in Central Tien-Shan, in the region of interaction of the northern, north-western humid flows, and south-eastern arid anticyclones.



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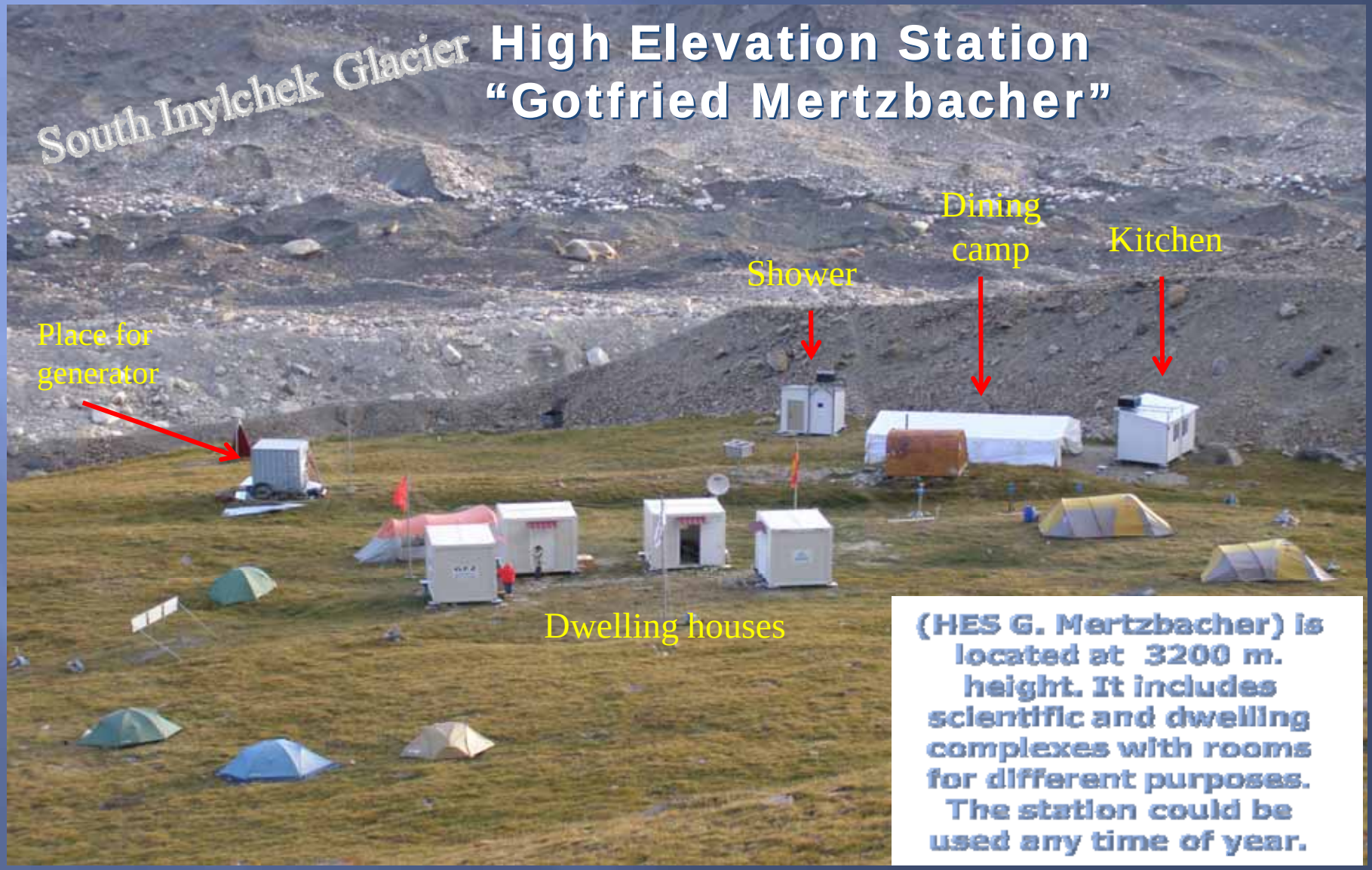

(HES G. Mertzbacher) is located at 3200 m. height. It includes scientific and dwelling complexes with rooms for different purposes. The station could be used any time of year.

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Automatic Station Northern Inylchek

Installation of automatic devices in the region of Mertzbacher Lake on the Northern Inylchek Glacier

Automatic Station Northern Inylchek is a key component complex of HMS and is aimed at meteorological, GPS seismic, hydrological, glaciological data acquisition that are transmitted to CAIAG via VSAT.

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Northern Inylchek Station includes:

Meteorological, seismic, GPS equipments in special bunker, hydrological posts – two sites, study of solar radiation, equipment to monitor dynamics in the Lake.

Data transmission from remote devices is being carried out using the modems and then via satellite channel by means of VSAT antenna to CAIAG.

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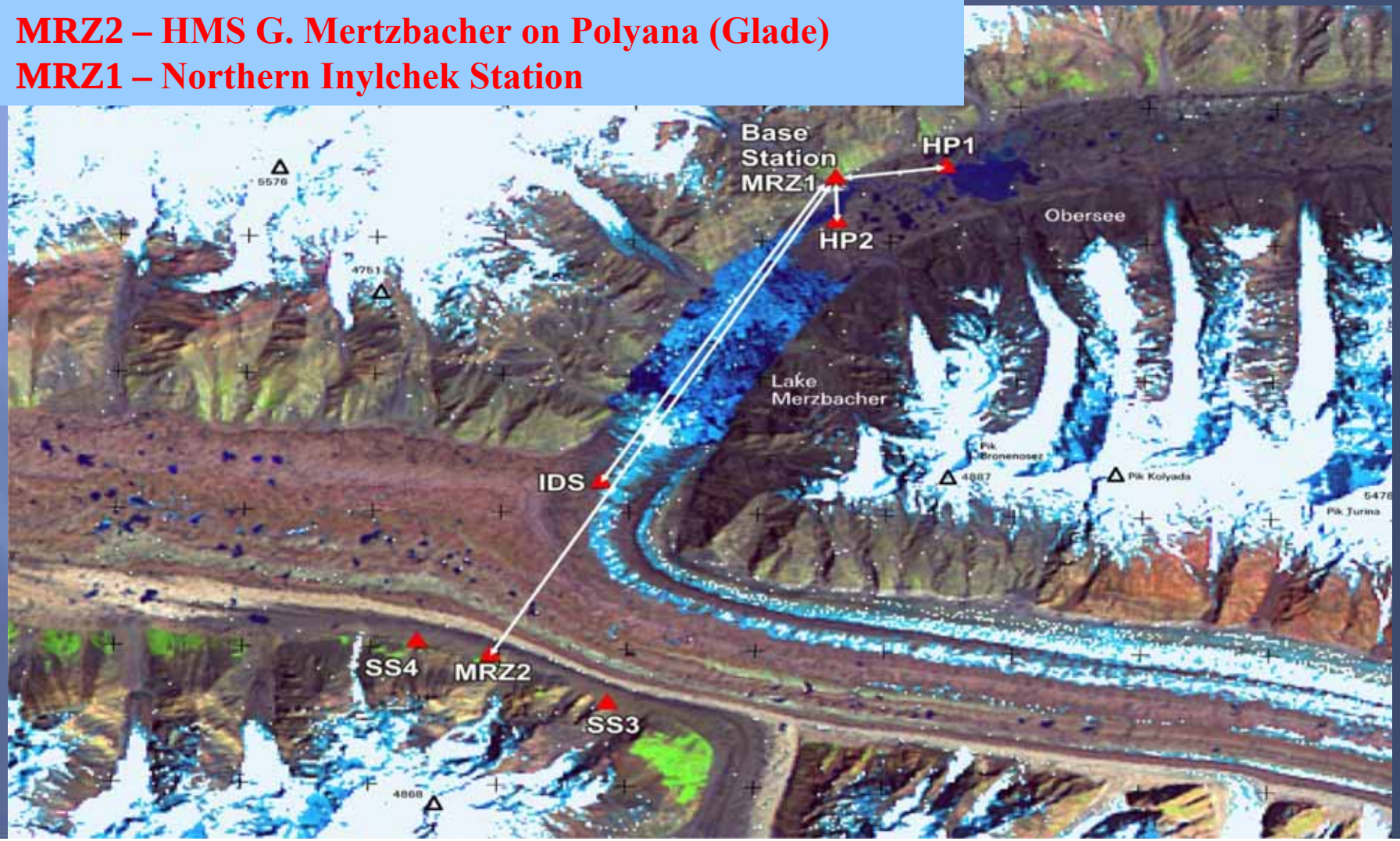
Scheme of data transmission from automatic seismic and hydrological stations.

MRZ2 – HMS G. Mertzbacher on Polyana (Glade)
MRZ1 – Northern Inylchek Station



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Automatic complex mounting: GPS, seismic and meteorological stations in ice dam in the region of Mertzbacher Lake to study the dam dynamics during the lake filling and outburst.

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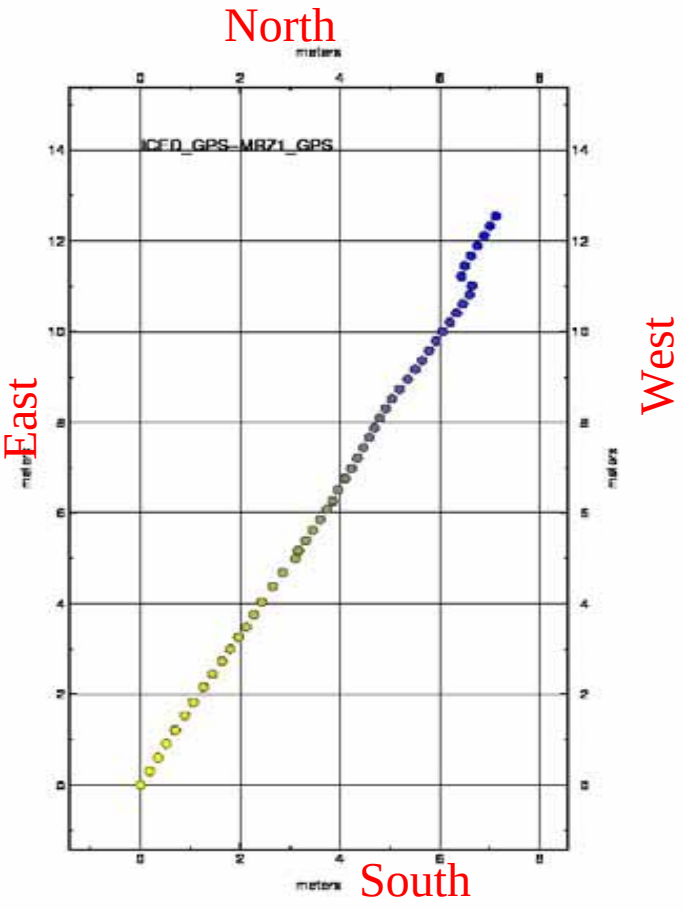
Data indicating horizontal component of the segment movement of ice dam in the direction of Mertzbacher Lake.



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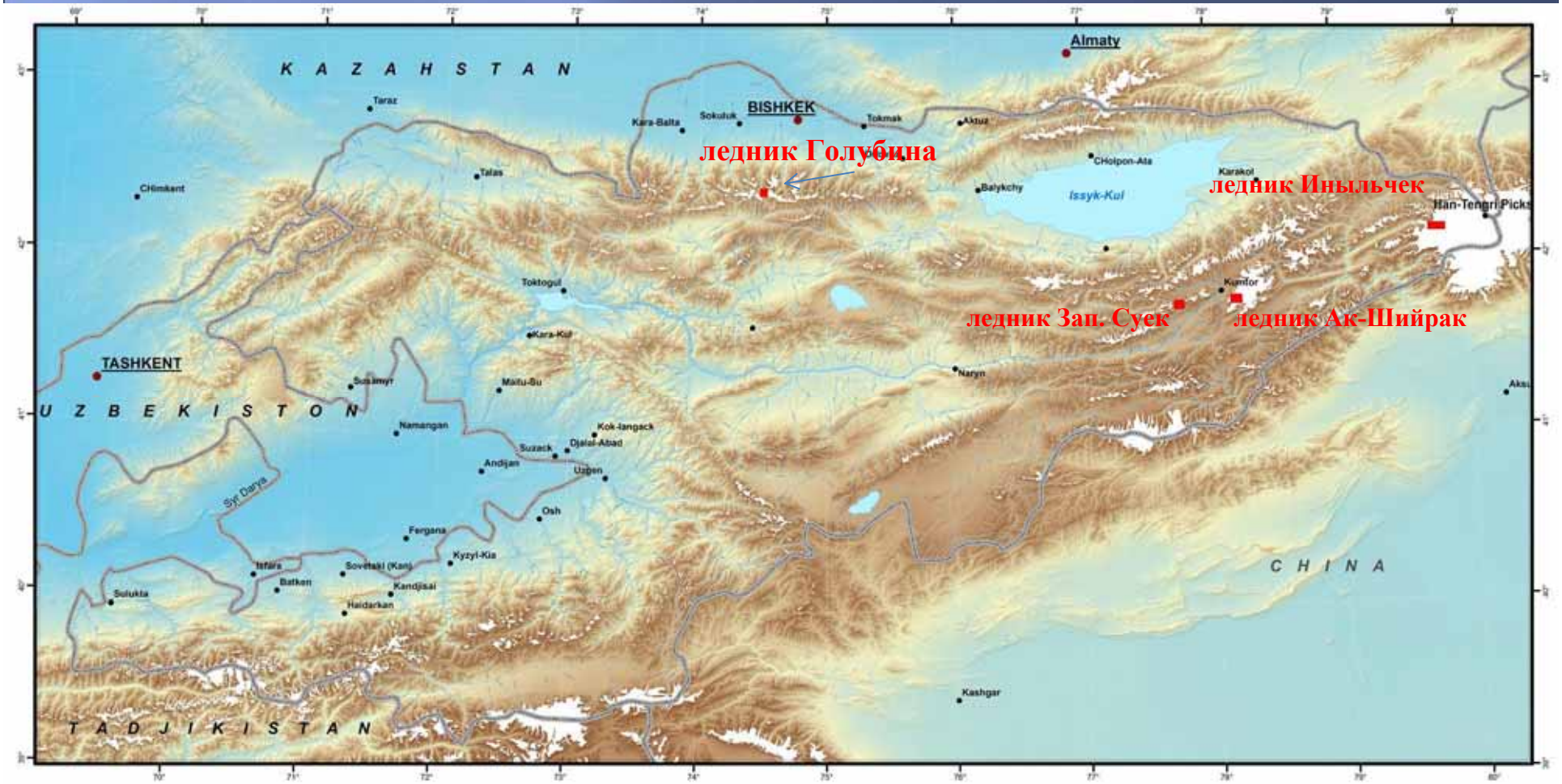
Ablation measurement are being carried out in 4 representative Tien-Shan glaciers, in basins of Naryn, Ala-Archa, and Sary-Djaz rivers within the framework of the projects CAWa and HMS G. Mertzbacher.



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Equipment for placing ablation poles to a depth of 15 m. Ice holes are drilled with the use of hot steam.

In 2010 in 4 representative glaciers more than 100 ablation poles have been placed at different depths.

- Inylchek glacier – up to 50 poles.
- Ak-Shiyrak glacier – up to 20 poles.
- Western Suek glacier – up to 15 poles.
- Golubin glacier – up to 20 poles.


THANK YOU!