ICSEED – 18

Tel Aviv, Israel

4-5. November 2019.

Institute of Hydrometeorology and Seismology of Montenegro

www.meteo.co.me; office@meteo.co.me

Main activities of IHMS sectors in the intersession period

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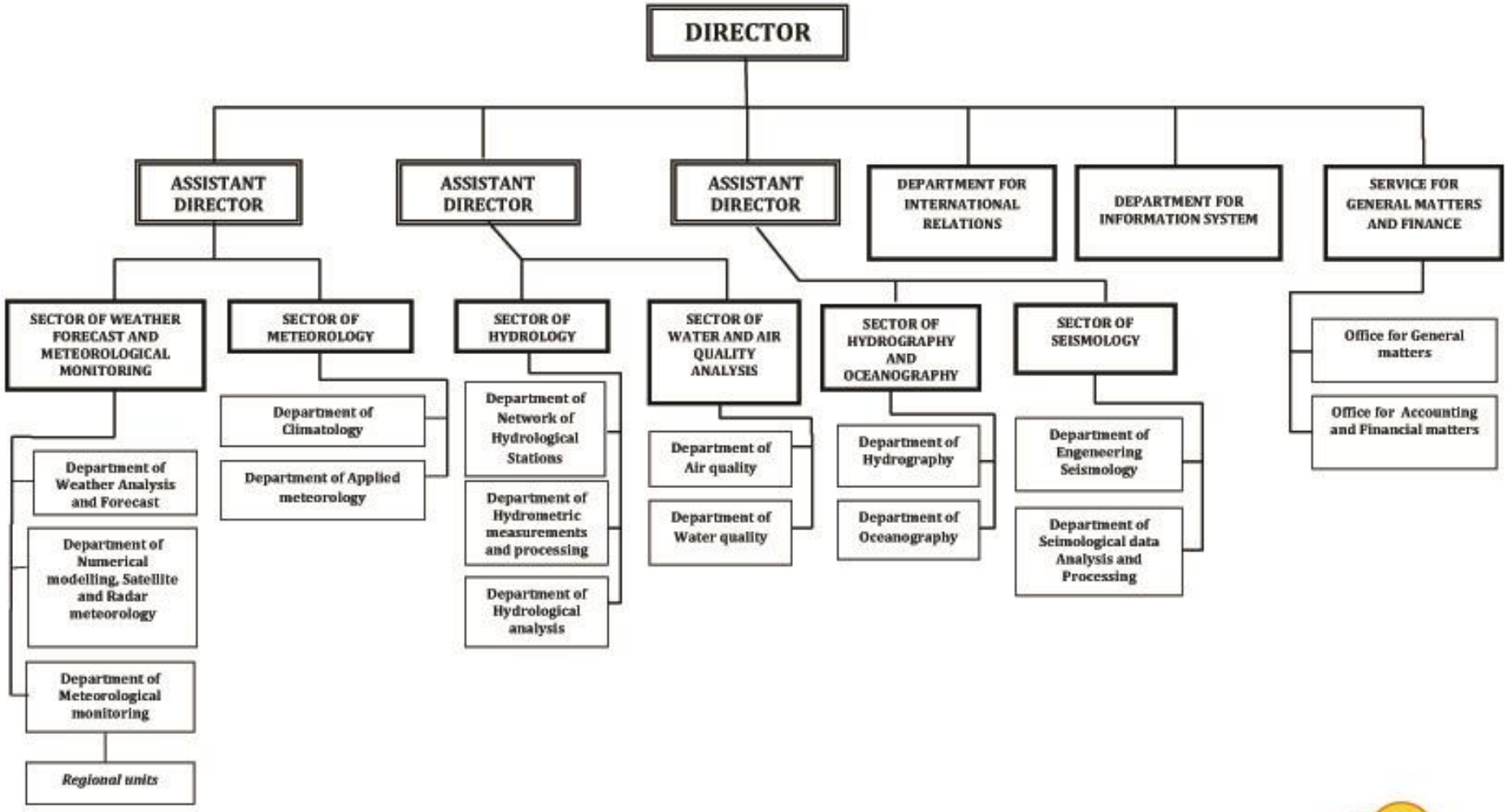
ORGANISATION SCHEME OF THE INSTITUTE OF HYDROMETEOROLOGY AND SEISMOLOGY OF MONTENEGRO



View of IHMS web page

Lots of requests for data, which we partly decreased by publishing yearbooks with meteorological and hydrological data, and some agro-meteorological data on our web page

Data are free of charge and currently we have published yearbooks from 2010 till 2017

METEOROLOGY

Computer forecast

3-days

5-days

Department of Applied meteorology

- TAILORING CLIMATE INFORMATION

Plans are to prepare: National Bulletin on droughts, following consultation with stakeholders, as the bulletin form have to correspond to their needs (Ministry of Agriculture and Rural development, Agricultural advisory services, Municipalities…) and Bulletin on climate change (main user Ministry of Sustainable development and Tourism)

Bulletins will be published on our web site

and sent directly to users by e-mail / biweekly.

➢ *Needs/problems*

- Current PCs do not correspond to the needs of fast data processing
- Old phenological data-base is currently in use, and should be upgraded or replaced with a new one - following WMO recommendation

HYDROLOGY

Black sea basin

Adriatic sea basin

44 hydrological stations on surface water bodies

- This number is close to the number of HS predicted by Master plan of HS (51 HSs)
- „**DRINA project**“ (West Balkans Drina River Basin Management Project) has provided 12 HSs
- From these number the infrastructure existed only on 2 stations (Dobrakovo and Ravna Rijeka)

- Through **IPA programme 2014** have been upgraded 17 HSs and built another 10 new HSs
- Most of the stations were upgraded and now have GPRS data-transmission
- Through **GIZ project** „Adaptation on Climate change in the Western Balkan“ have been upgraded 7 HSs

All automatic equipment is

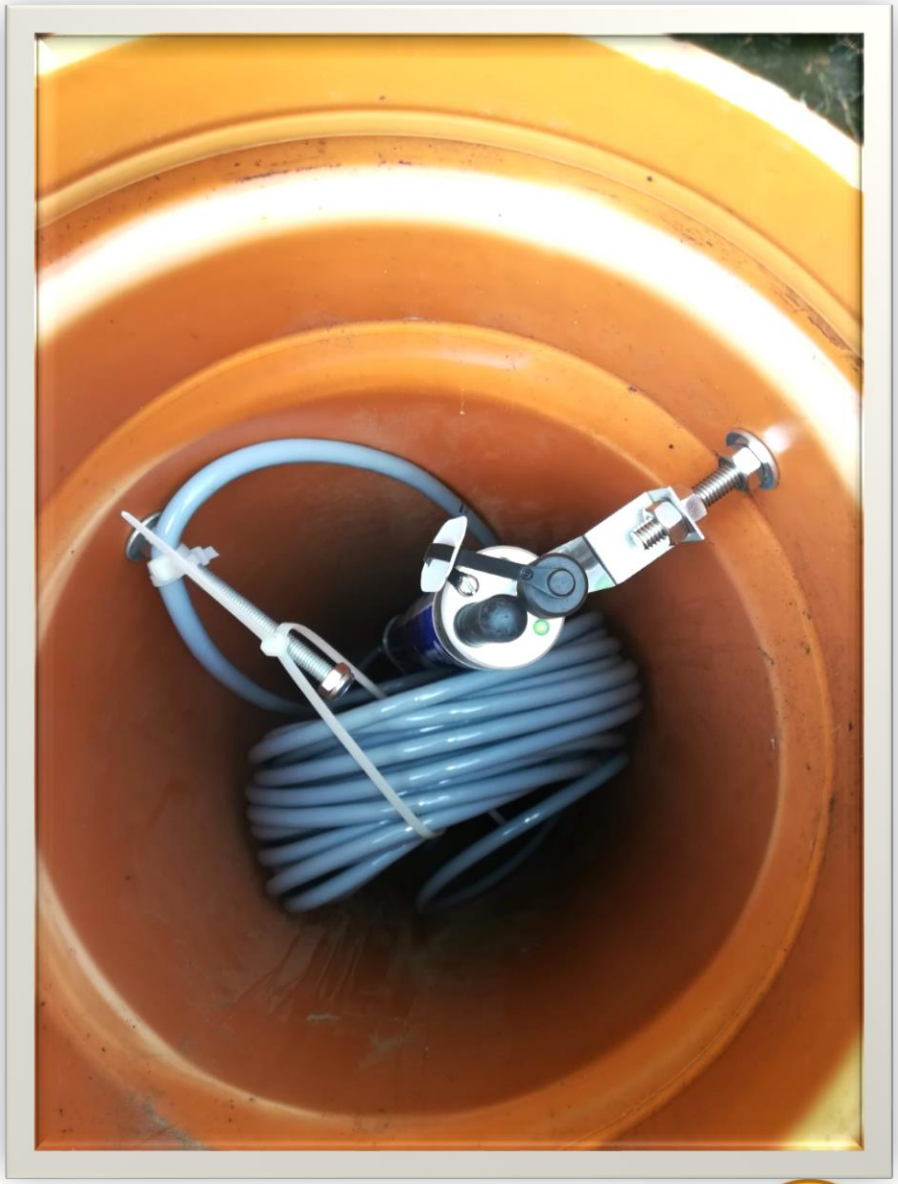
OTT HydroMet - Germany

- From 44 HSs – 43 use GPRS data transmission (data are received in 15-minutes intervals and sent on the IHMS server each hour)
- Problems with GPRS signal in border or inacessible areas exist and there we use GSM data transmission, once a day
- All data are received on FTP server and input in OTT Hydras software, and then imported in WISKI data-base (DRINA project)
- Within WISKI date-base are purchased two modules BIBER (for discharge calculation) and SKED (for rating curves)

49 stations on groundwaters in Montenegro

- Through *IPA programme 2014* have been provided the equipment for measurement of ground waters
- From 49 stations, 34 use GPRS data transfer and 15 stations are without modem, so data must be taken on the terrain once in 6 months.
- Data from locations with GPRS are sent on FTP server.
- IHMS is in the process of data import in WISKI data base


This project is funded by European Union



AIR QUALITY

EMEP station

- Through the IPA project "*Strengthening of capacities in air quality in Montenegro*", coordinated by Ministry of sustainable development and tourism, IHMS as a beneficiary of the project received the modern equipment for implementation of EMEP monitoring (European Monitoring and Evaluation Programme) and corresponding reporting in accordance with EMEP protocol
- Additionally IHMS received new analytical equipment (ICP-MS and Ion Chromatography) which is installed in newly built part of the laboratory

IHMS

WATER QUALITY

Strenghthening of Capacities for Implementation of the Water Framework Directive in Montenegro

- Project termination is planned for the end of 2021 and its main aim is to provide the basis for implementation of EU WFD and other directives related to waters
- New Regulation for water monitoring of surface waters and Regulation on manner and deadlines for determination of ground water state - are the basis for future water monitoring
- It includes revision of existing monitoring parameters, revision of locations and consequently a new estimation of water quality

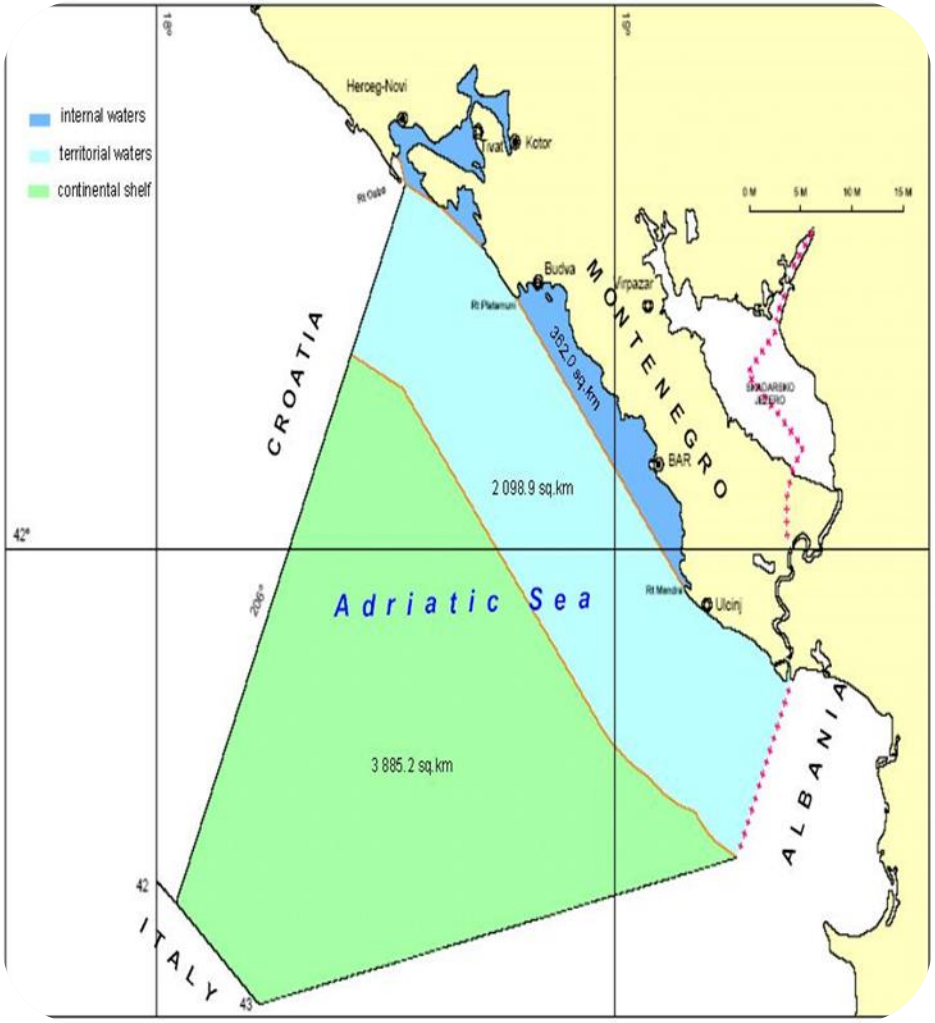
- Programme of water monitoring is currently in the preparation and will be adopted till the end of this year and finally start in 2020. This mean a lots of new obligations for IHMS Department for water quality (monitoring of biological parameters + general physico-chemical parameters + chemical monitoring of priority substances + hydro-morphological monitoring)
- Laboratory for biological monitoring is upgraded with new analytical and technical equipment (spectrofluorometer for phytoplankton analysis, microscope with camera and adequate software, grab sampler, computer, lap-top, software Omnidia…..)

➢ *Needs/problems*

- *Staff*, only 5 employees even do the work is expanding and is highly demanding so there is a need to employ at least 2 new persons (biologist and chemical technician), and in later stage one chemist

- *Laboratory area* should be expanded and equipped with devices for analysis of priority substances

HYDROGRAPHY



Montenegro's waters in Adriatic Sea

- Staff from Sector of Hydrography and Oceanography is highly committed to provide reliable information on the nature of Montenegrin waters, as this is of vital importance for safety of navigation, environmental protection and economical development
- Engagement in IHO and IMO activities as well as in national hydrographic and oceanographic activities and measurements, which provide necessary data for producing national planning documents and reliable nautical charts and plans for ports and marinas, as well as adequate nautical publications for the sea

SEISMOLOGY

- 15th May 2019 was dedicated to the expert meeting organized on the occasion of the 40th anniversary of the catastrophic earthquake in Montenegro, which happened in April 1979
- Panel discussions were dedicated to geological hazards in Montenegro, scientific and experts challenges in the areas hazard risk reduction, as well as preparation of data-base on damages caused by natural hazards in Montenegro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➢ *Needs/problems*

➢ Technical capacities

- Need of fulfill standards related to data exchange necessarily dictates the need of upgrading existing hardware and software components
- It is important to strengthen modules for automatic earthquake locations and production of shake maps

➢ Personnel capacities

- Lack of staff for continuous monitoring (24/7), technical maintenance, IT support and producing informations and reports for users
- Age structure is unfavorable
- Necessity for additional trainings

IT SECTOR

- Through **DRINA project** (West Balkans Drina River Basin Management Project) was procured a hydrological data base – WISKI 7 Information system software (incl. WISKI Client application with standard and advanced statistics, BIBER; SKED; TSM ; User administration licence)
- Software for data transfer: import / export – KiDSM
- Procured a new server (HPE Proliant DL360 Gen 10), for data aquisition from automatic HSs for surface and ground waters
- Installed new sotware version for import of real time data by GPRS technology.

➢ *Needs/problems*

- Insufficient financial means for permanent upgrade and maintenance of the equipment and computer resources

- Lack of staff, what influence a large number of obligations for a small work team

Thank You
for Your attention !!!

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