

Modernisation of Croatian Meteorological Measurements Network (METMONIC)

Dubravka Rasol
Meteorological and Hydrological Service
of Croatia (DHMZ)

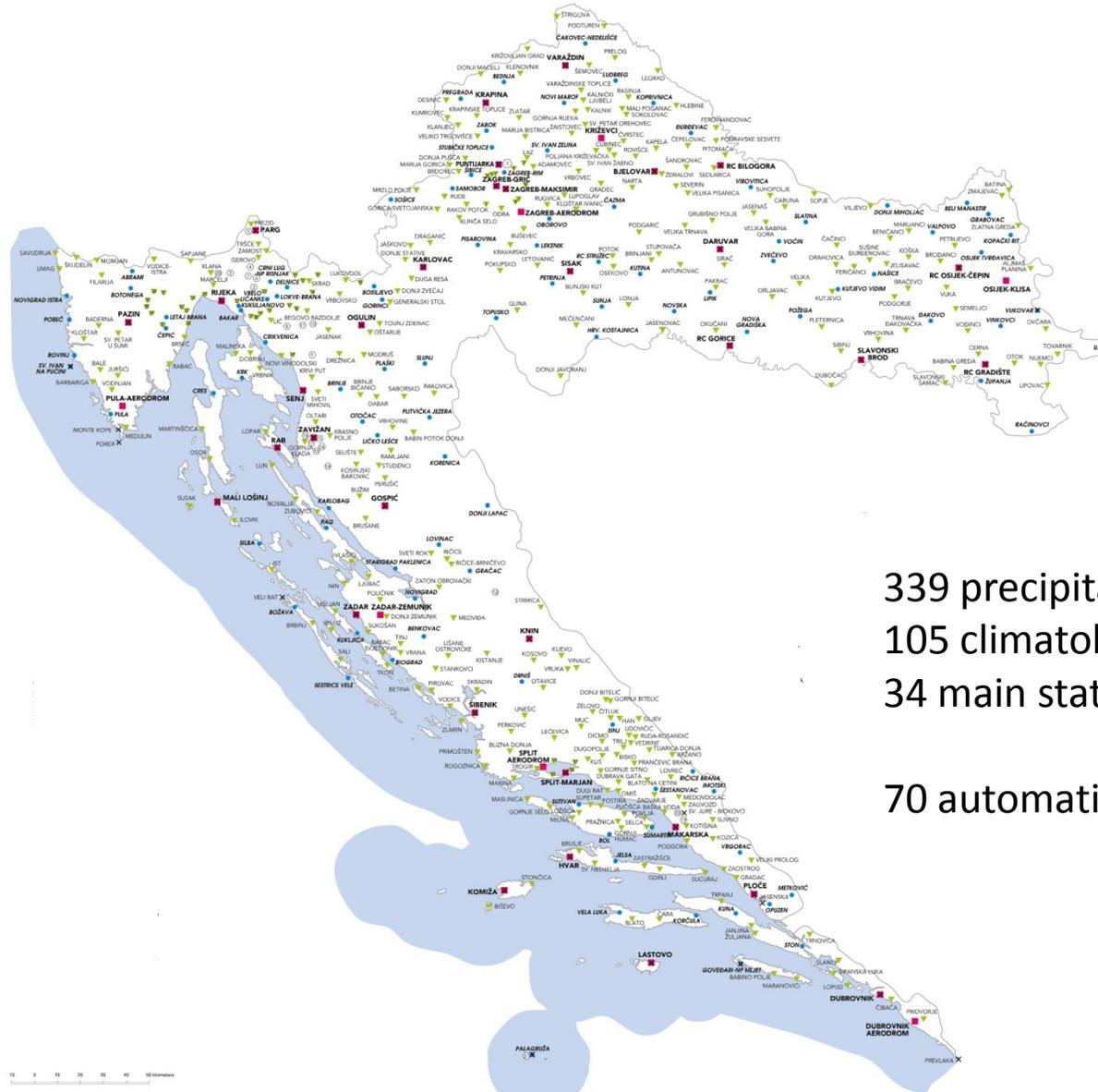
About the project

- European Regional Development Fund 85 %, national component 15 %
- 34 million Euros + taxes
- Now to 2021 (extension to 2023)

8 components:

1. Surface measurements
2. Upper air measurements
3. Weather radars
4. Oceanographic measurements and modelling
5. Data processing and quality control, improvement of data bases and data distribution, data digitising/scanning
6. Calibration laboratory
7. Monitoring of metals in ecosystem (air quality)
8. Administration, publicity and visibility

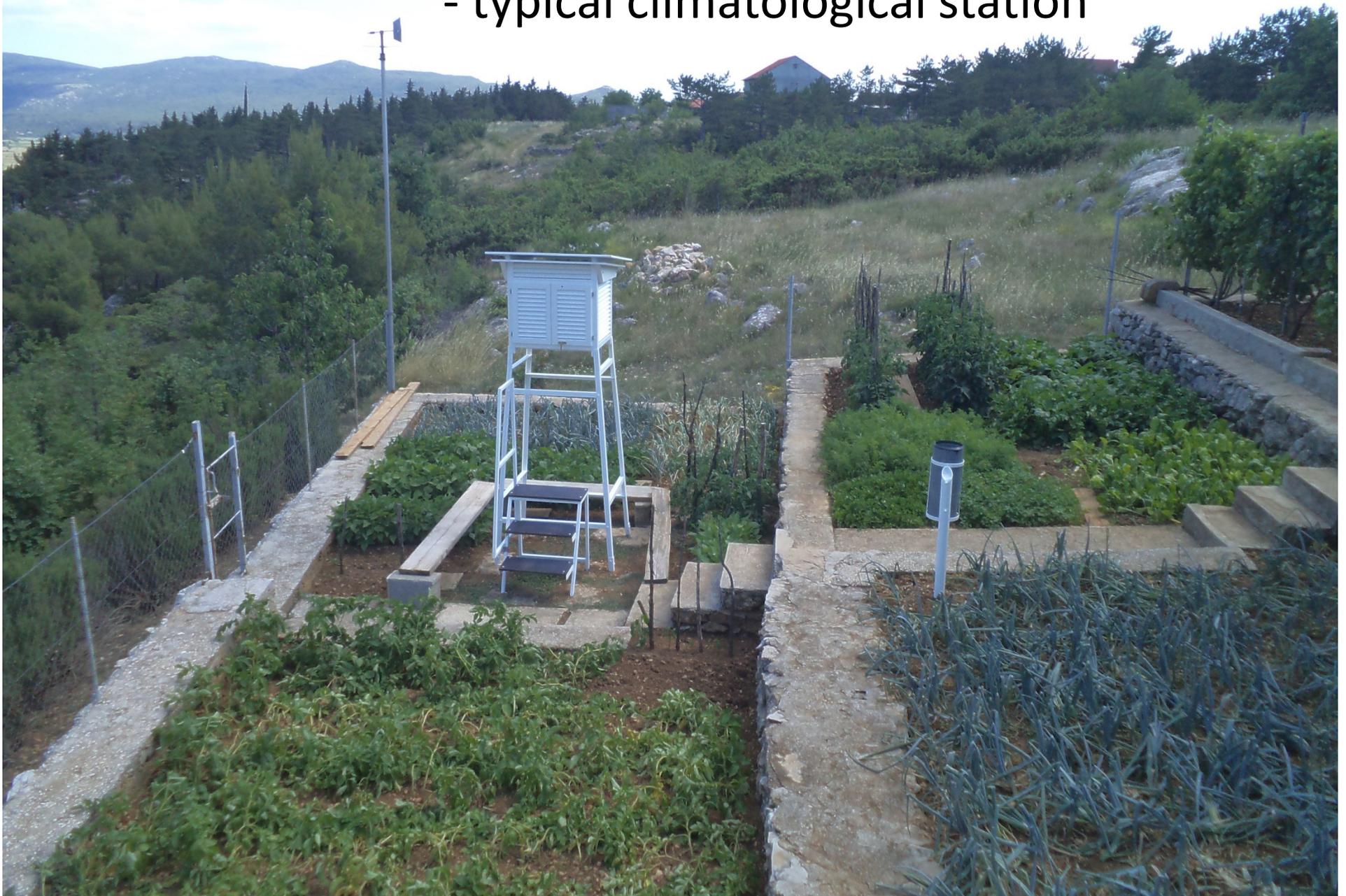
Present: surface stations network



- 339 precipitation stations (daily data)
- 105 climatological stations (7,14,21 LT)
- 34 main stations (hourly data)
- 70 automatic stations (10 min data)

Present: surface stations network

- typical climatological station



Bakar climatological station



Bakar climatological station –
local authorities planted some
flowers and trees without asking
or telling anyone from DHMZ



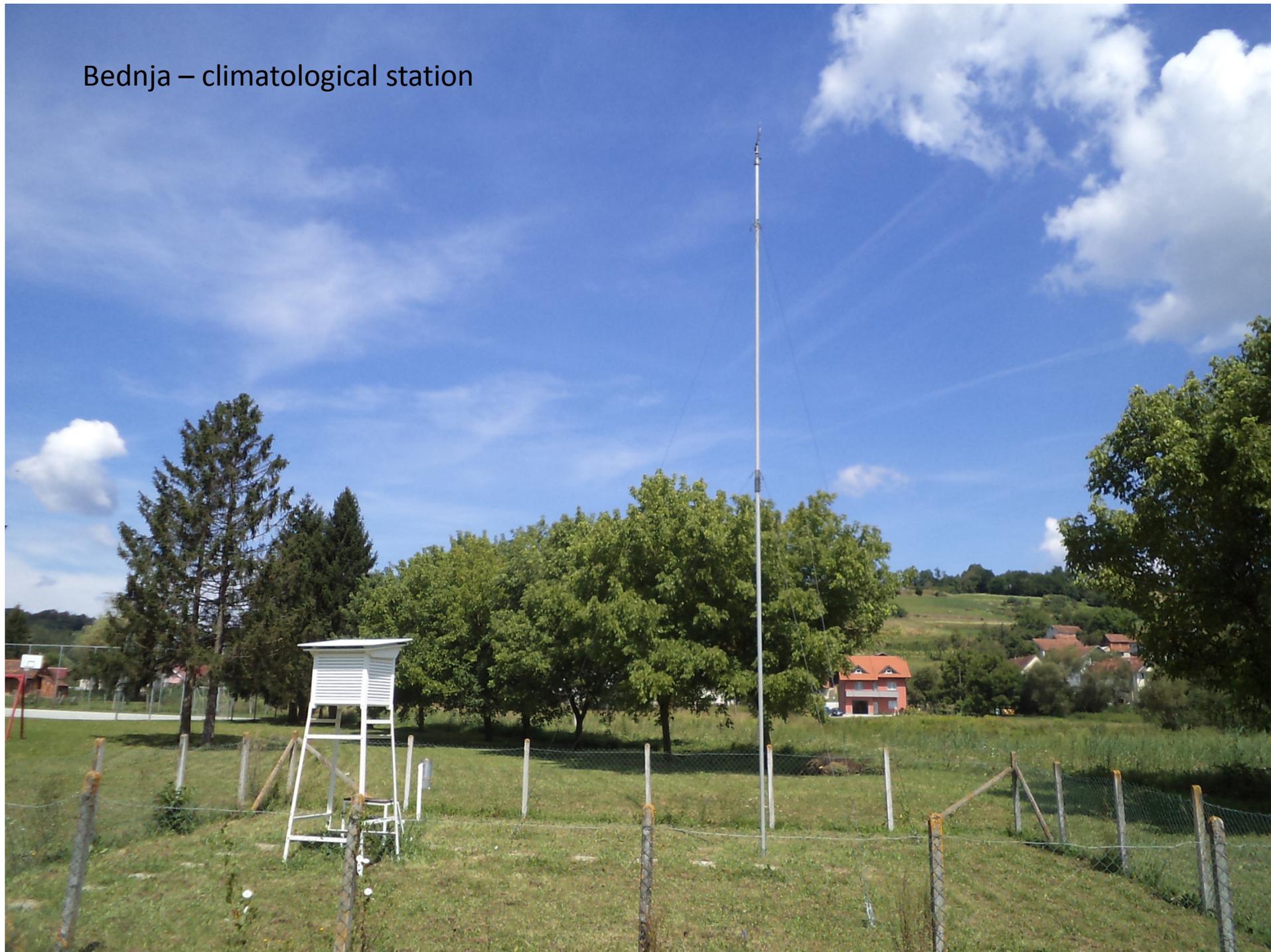
Bakar climatological station – they even painted the roof in red so that it fits nicely with other roofs in the town



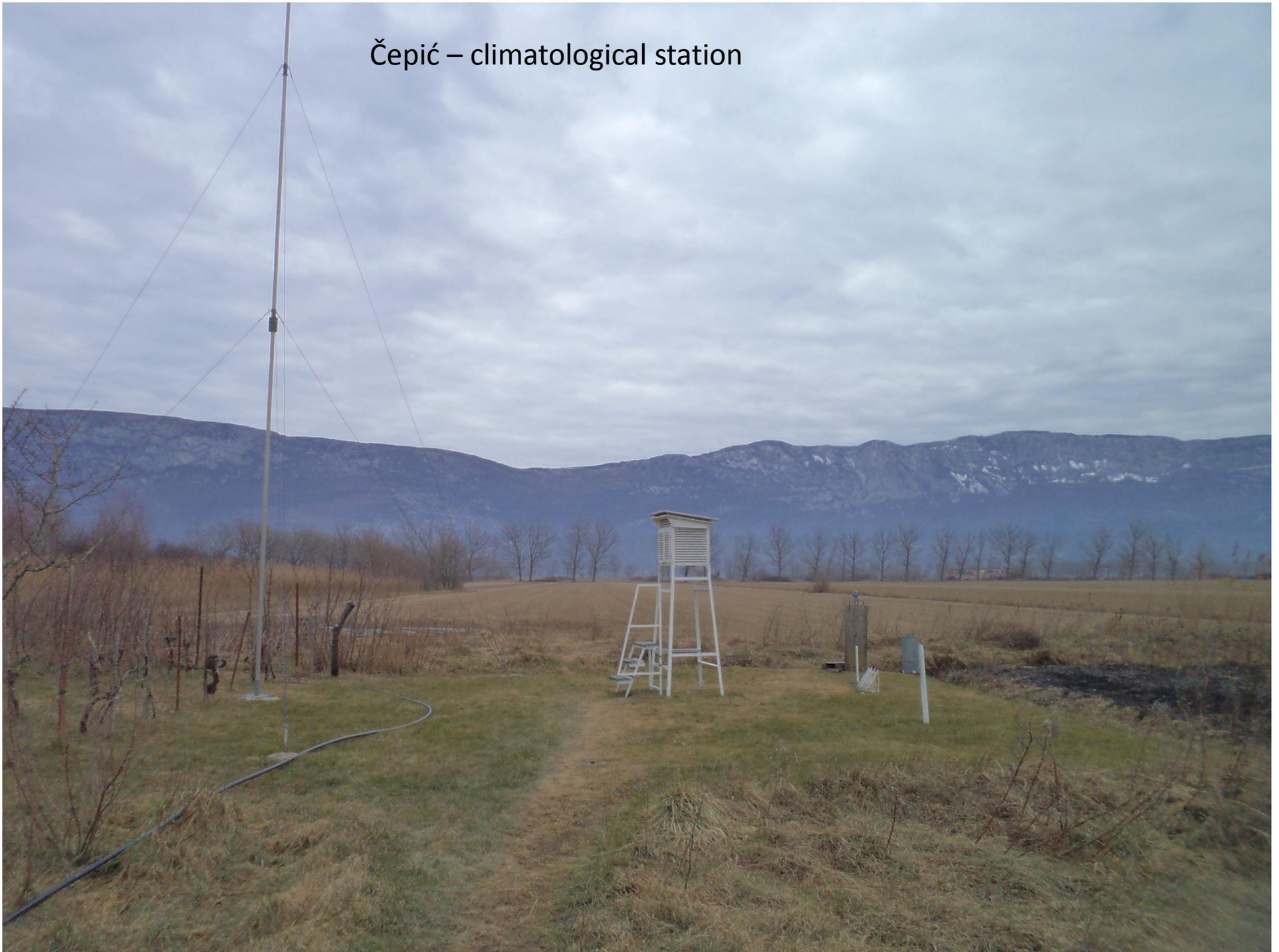
Pučišća – precipitation station



Bednja – climatological station



Čepić – climatological station



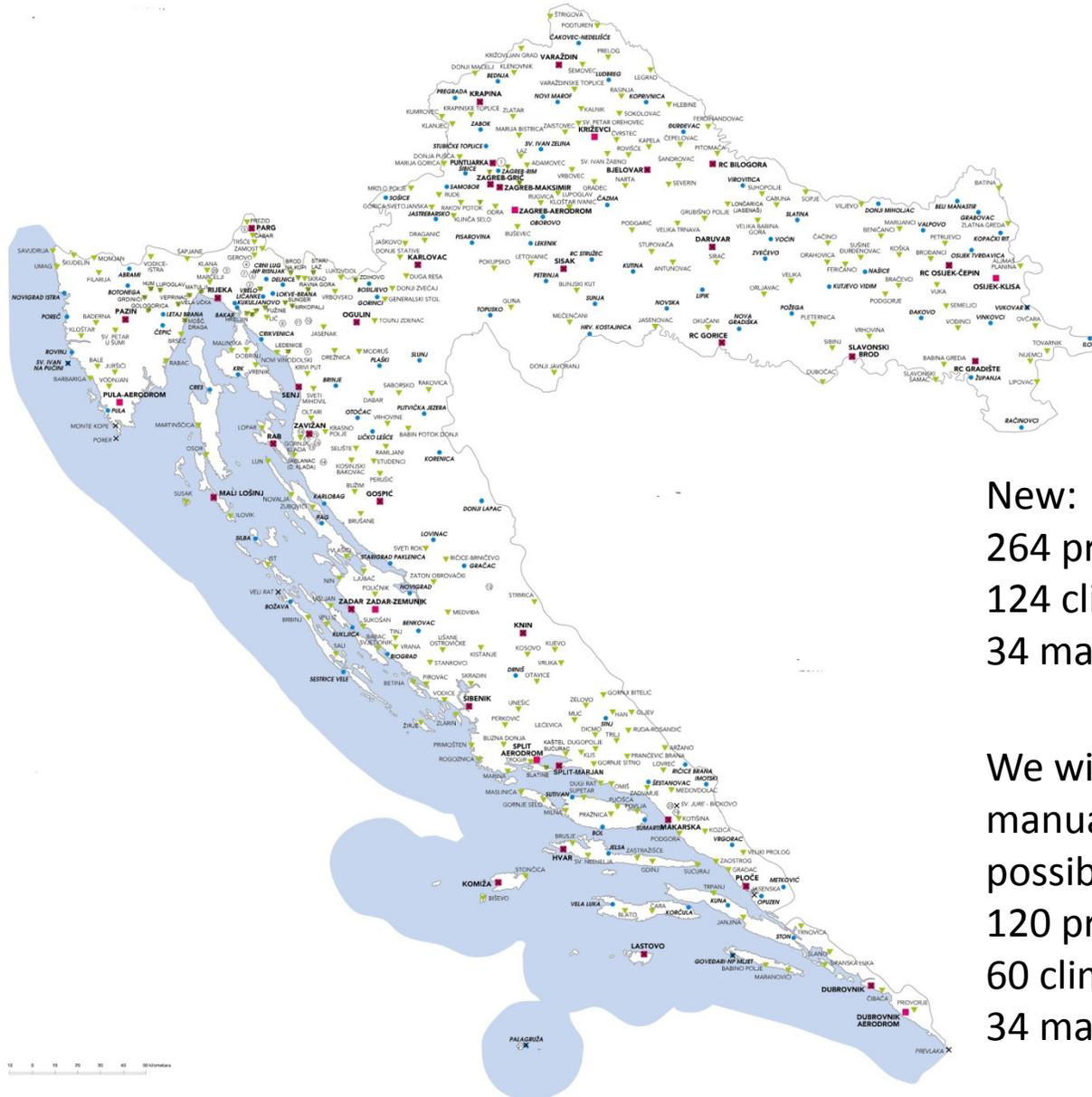
New locations – local authorities or state land



New locations



Future: surface stations network



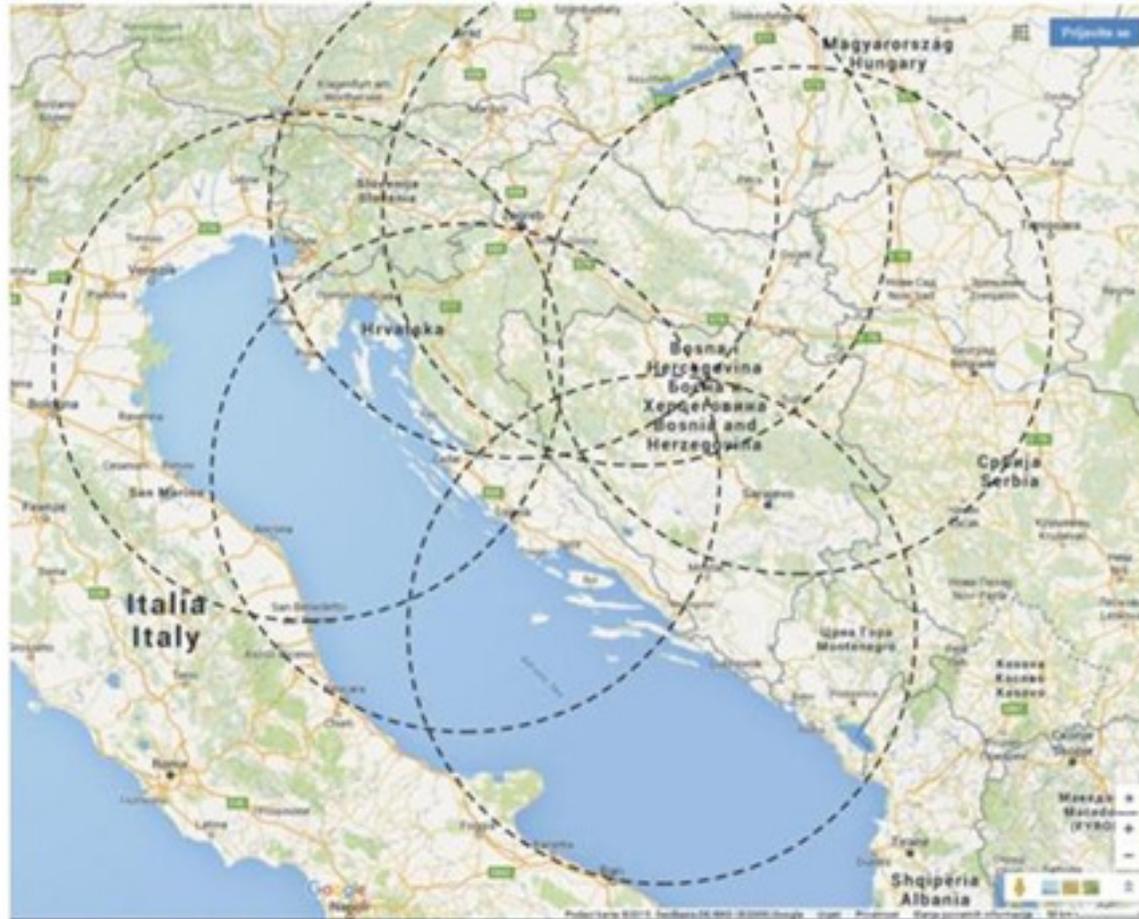
New:
264 precipitation stations
124 climatological stations
34 main stations

We will try to keep present manual stations for as long as possible:
120 precipitation stations
60 climatological stations
34 main stations

Parameters measured at the different station types:

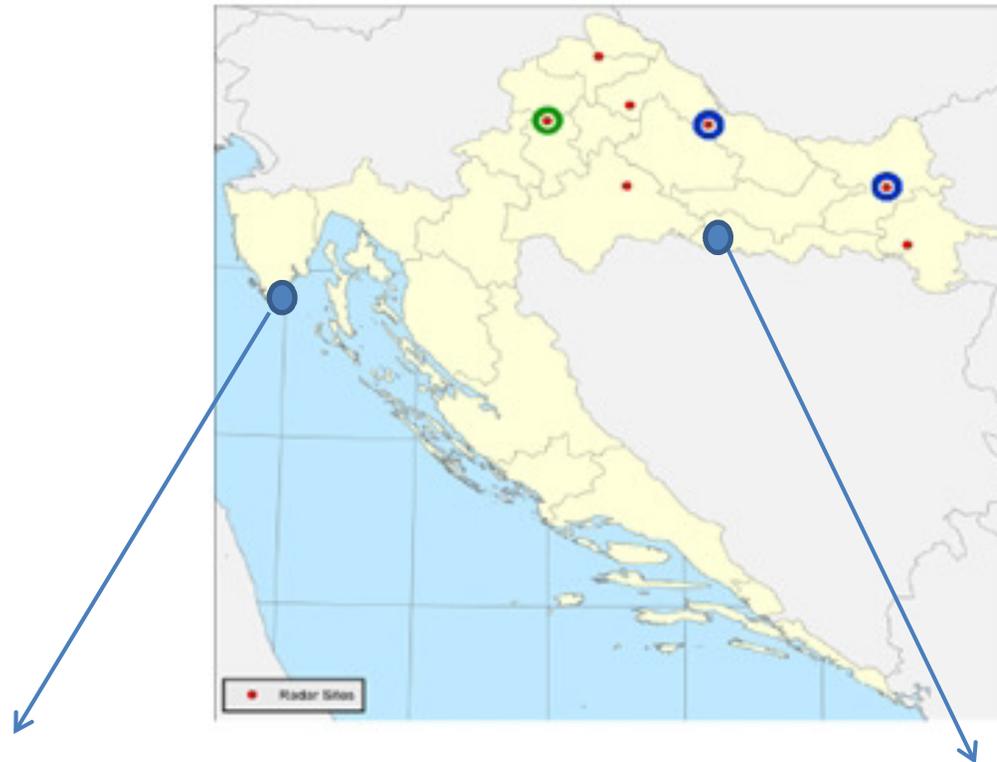
Precipitation stations	Climate stations	Main stations
<p>Precipitation Rain detection</p> <p>+ Air temperature and humidity: 2 m at some locations</p> <p>+ Air pressure at some locations</p>	<p>Precipitation Rain detection Air temperature and humidity: 2 m Air temperature: 5 cm Wind speed and direction: 10 m Snow depth</p> <p>More parameters at some locations</p>	<p>Precipitation Rain detection Present weather Air temperature and humidity: 2 m Air temperature: 5 cm Wind speed and direction: 10 m Air pressure Soil temperature Soil moisture Evaporation Sunshine duration Visibility Camera</p> <p>More parameters at some locations</p>

Modernisation of radar measurements



Doppler dual-polarized radar system, 120 km range.

Upper-air measurements



Microwave radiometer
and wind profiler -
Monte Cope (Istrian
peninsula)

Lidar - Slavonski Brod,
because of problems
with pollution from
across the border

- Data processing and quality control:
huge amount of new data
three steps QC:
 1. real time automatic QC of data – each parameter on each station,
 2. near real time automatic QC – spatial component,
 3. delayed automatic/manual QC – usage of other data sources (radar, satellite...)
- Improvement of data bases and establishing of data distribution platform
- Archive data scanning/digitisation:
two scanners and intelligent character recognition (ICR) software

Thank you for your attention!

