Workshop on
DEVELOPING REGIONAL COOPERATION
FOR SHARED KARST AQUIFER MANAGEMENT IN SEE
27-28 June 2008
Thessaloniki, Greece

Monitoring data and existing information

Country Presentation from Turkey

Plan of presentation

1. Brief description of monitoring networks (surface and groundwater)
2. Monitoring data: aquisition, analysis and publication
3. Documentation sources: ministries, institutions, WEB pages

Under the scope of Planning studies, the most important formulations of projects are prepared by using the long term data collections and investigations

Data collection activitiesin planning studies are implimented with the coordination of different engineering fields consisting of gauging, observation, survey, soil and drainage, agricultural economy, hydrology, environmental impact assesment, geology, mapping and material science.

The hydrometeorological network of General Directorate of Turkish State Hydraulics Works (DSI) comprises the following stations:

- River flow Mesaurement 1153
- Lake level observation 134
- Snow survey station 155
- Meteorlogical observation stations 356
- Water quality observation (sediment) 1000
- Groundwater observation stations monthly 504, seasonal 2320, 182 wells equipped with water level recorder (Limnigraphs)

The above figures are those of operating stations. In the past more stations were operated for certain period prior to project start but closed after the completion of the project.

Also General Directorate of Power Resources Survey and Development Administration (EIE) founded in 1935, being governed by the provisions of private law and administrated in accordance with commercial methods, having the status of a juridical person and being bound to the Ministry of Energy and Natural Resources, carrying out engineering service with opportunity of production of electrical energy is an investor public organization.

One of the main tasks of EIE is to make hydrological studies and Geotechnical researches. In this contest

River flow Mesaurement 798 (294 open, 504 closed)

Channel gaugging stations 23 (8 open, 15 closed)

Lake level observations

with level recorder 24 (11open, 13 closed)

with staff gauge, perodically 64 (37 open 27 closed)

Snow survey station 90 (54 open, 36 closed)

Water quality observation 270 (225 open,45 closed)

Sediment Observations 231 (144 open, 87 closed)

General Directorate of State Meteorological Office (DMI) is responsible for both weather forecast and meteorological data collection. At present the number of operating stations all over Turkey areas follows:

Synoptic stations for weather forecast 118

Large Climatological Stations for agricultural purpose 259

Small Climatological Stations (only minimum, maximum temperature precipitation and wind observations) for local agricultural purpose 33

Mobile Meteo. station (AWOS) for aviation purpose 61

Coastal Meteorological station **(AWOS)** for marines 29

General Directorate of Agriculture Research (TAGEM)

(former General Directorate of Rural Service (GDRS))

Operating rainfall stations at 12 Agricultural Research Institutes

State farms

Forest directorates

Highway maintenance units

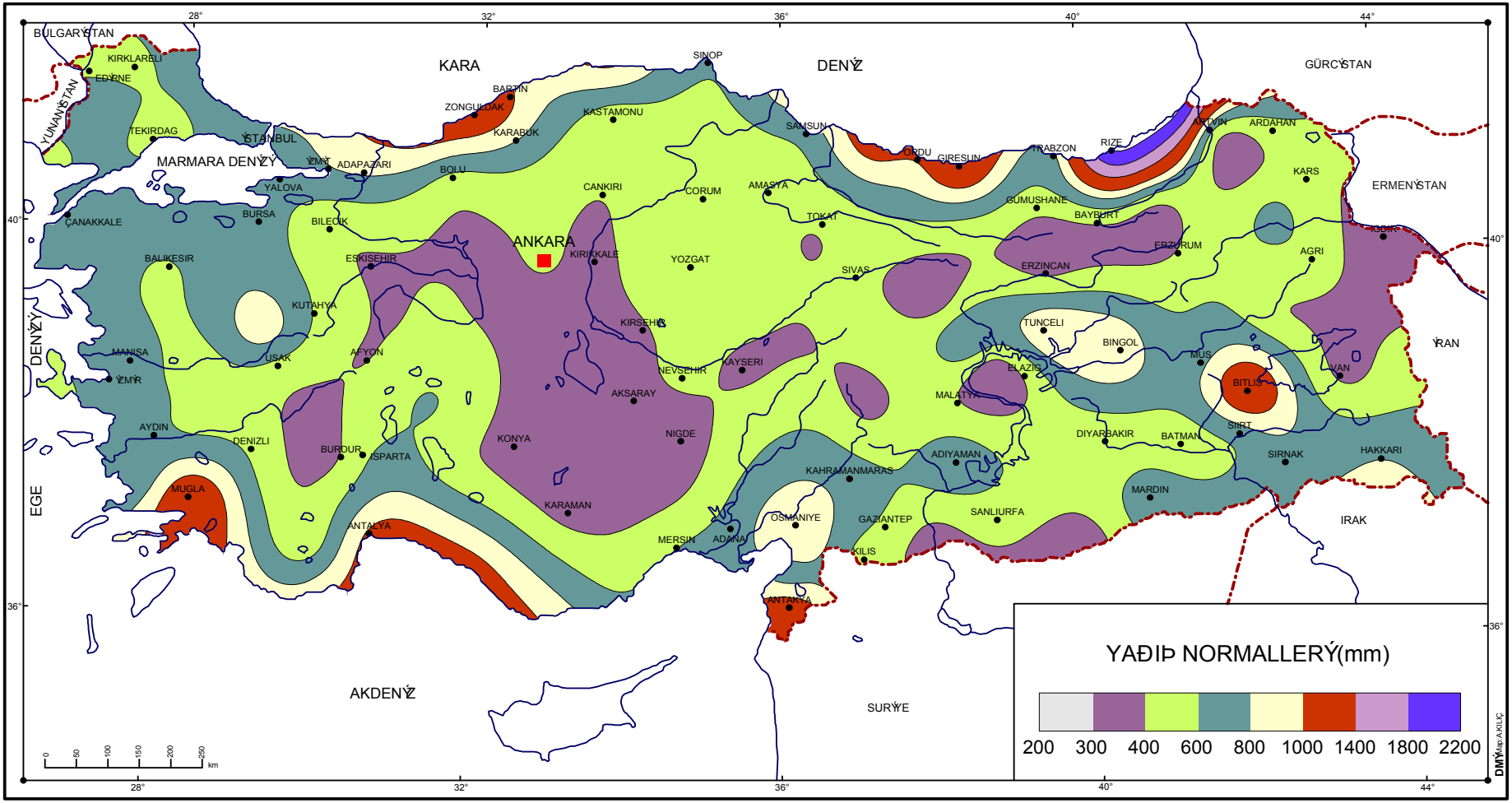
Some University Laboratories

They all are operating rainfall observation stations for their projects at some regions, only for a certain period

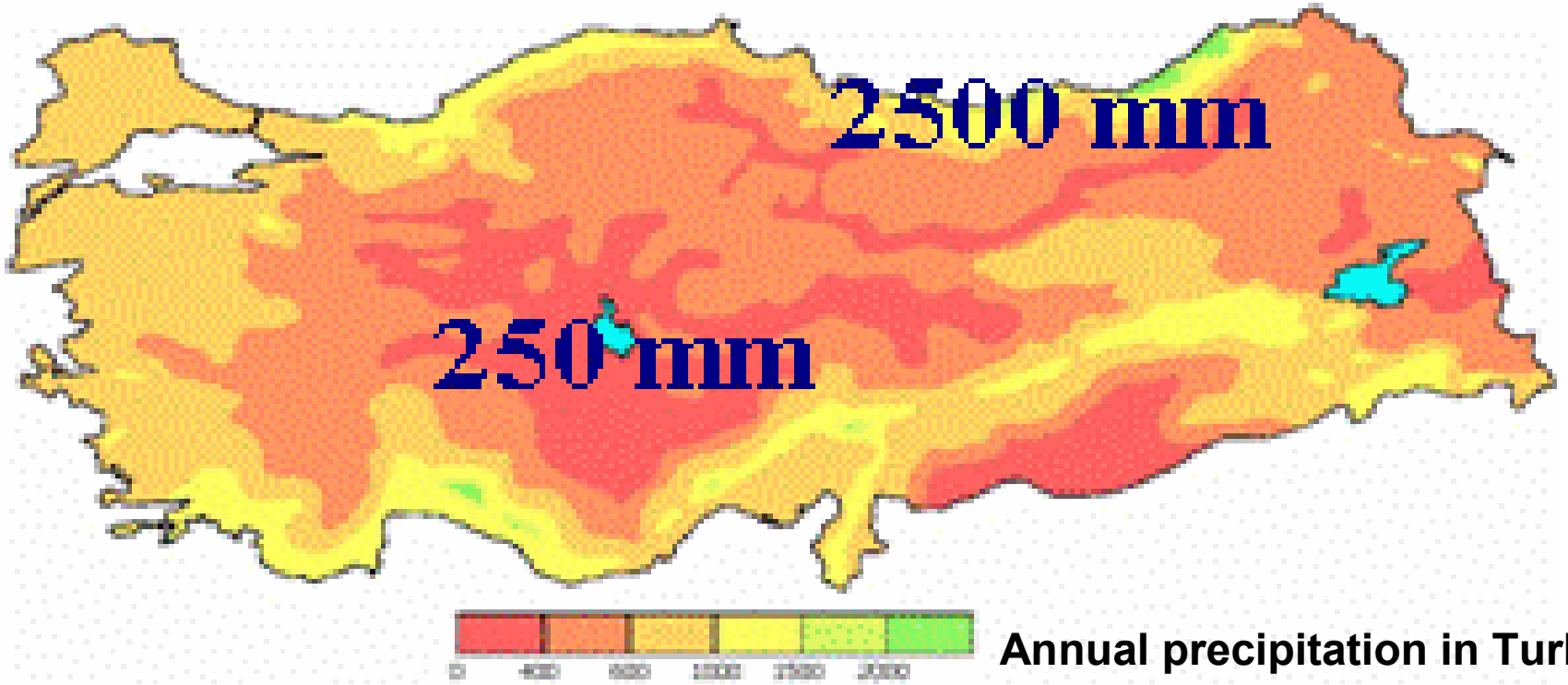
DSI, EIE and DMI hydrometeorogy network summary table of Turkey

Type of Observation	Historical Bacground	Responsible Organization	Start	Type of Instrument	Type of analysis carried on	Number of stations	Type of the station
Precipitation		DSİ DMİ	1959 1929	Pluviograph Helman pluviometer	Precipitation total	356 259	Precipitation Evaporation
Snow surveying		DSİ EİE	1964 1964	Snow sampler	S_d,$S_{w/e}$,S_γ	150	KGİ
Flow Measuring		DSİ EİE	1964 1935	Price current meter	Velocity measure Discharge	1153 294	AGİ
Sediment Measuring Station		DSİ EİE	1970 1962	DH 49 DH 48	Askıda Rusubat miktarı	894 144	AGİ
Grounwater Observations	No:167 Ground water law	DSİ	1966	Level recorder Contact meter	Well, grounwater mapping	504 monthly 2320 annual 182 recorder	(seasonal)
Water quality observatıons		DSİ EİE	1979 1970	Standart nethod	Pollution and anions, cations	108 225	water sampling station

Long term mean annual precipitation totals (mm) of Turkey

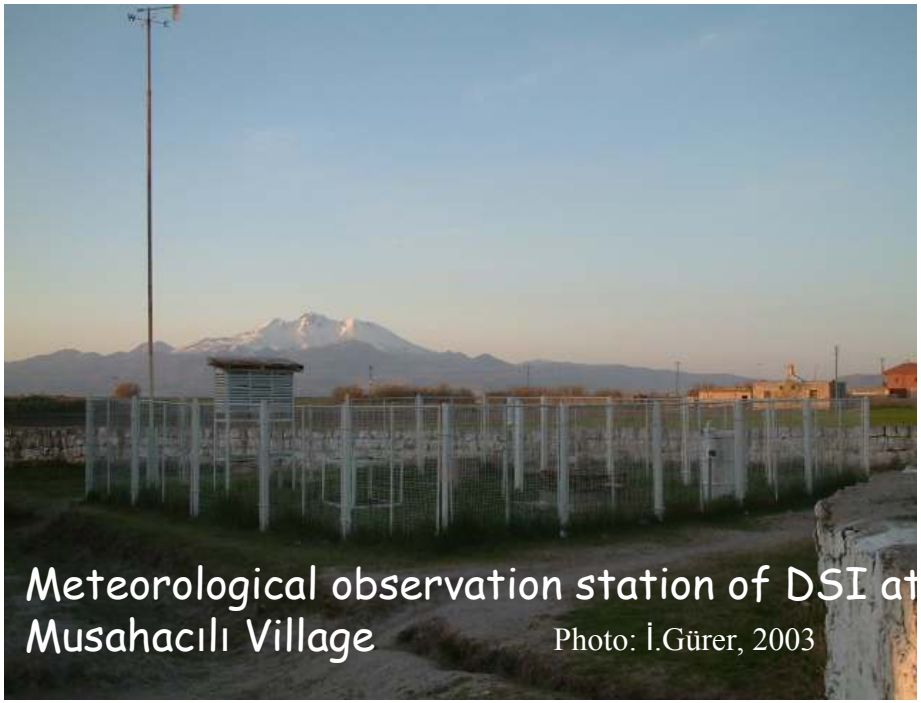


The annual precipitation of earth is about 1000 mm, and in Turkey this figure is 640 mm. So for water security, the amount available is to be used more efficiently. The second problem is areal and time distribution of precipitaion. So a wise regulation is the second must.



Annual precipitation in Turkey

DSI level ecorder,current meter and staff gauge by: DSI ,Gurer



TEFER Project (Turkey Emergency Flood and Earthquake Recovery Project)

Aim of TEFER Project is to forecast the probable flood in Turkey.


One of flood in Turkey (DMI, 2005)

Real time data which are collected automatically:

1) Flow Data from DSI and EIE hydrometric stations,

2) Rainfall Data from DMI Automatic Weather Observation Stations

3) Radar data from DMI

4) Numerical weather prediction data from DMI

All of these data are sent to MIKE-11 flood prediction software.

TURKSAT1-C satellite is used for the real time data transfer.

MIKE View and MIKE 11 GIS are used for the digital mapping studies


(AWOS) of DMI (DMI, 2005


THANK YOU