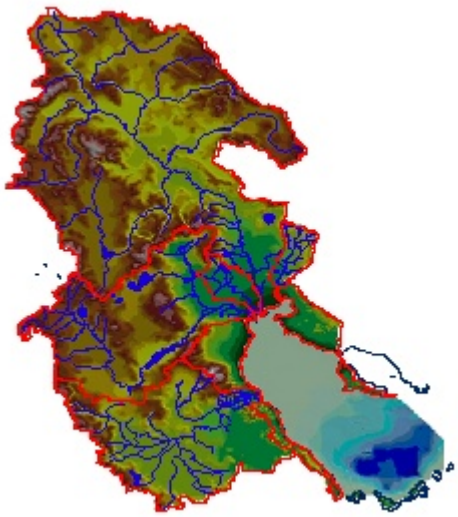
WT 7.16 THERMAIKOS GULF, GREECE

1. Host Institution: Institute of Oceanography HCMR**. Contact:** Christos Anagnostou chanag@ath.hcmr.gr



2. Thermaikos is a U-shaped gulf situated in NW Aegean Sea - Greece

3. Characteristics

Marine System	Thermaikos Gulf forms an extended shelf area, which has a significant influence from rivers. Most of the particulate inputs are trapped near the river-mouth. The suspended particulate matter concentrates in nepheloid layers, at the surface and near the bottom and most of them is deposited and berried on the shelf. The fresh/salt water interface zone plays a significant role in the increase of atmospheric N_2O and CH_4 concentrations coming from the bacteria production in this zone. The gulf shows eutrophication events caused by the high nutrient supply, derived from the river discharges.
Watershed	The total catchments basin of Thermaikos Gulf extends to an area of ~72.000 km^2, drained from four main rivers. The average discharge of the river system reaches values from 300-350 m^3s^{-1} and the annual discharge is estimated in 6-8 x 10^9 m^3y^{-1}. The solid annual discharge is rapidly reduced from 3-4 x 10^6Ty^{-1}, some decades ago, to 0,6-0,7 x 10^6Ty^{-1} in the recent years.
Human Activities	Urbanization [Thessaloniki a city of 1,5 million citizens], agriculture [Thessaloniki plain, Thessalia plain], industrial [Thessaloniki industry area], tourism [E and W site of the Gulf], fisheries, aquaculture mainly mussel farming.
Impact Responses	Intensive agriculture, intensive aquaculture, overfishing, urban/industrial wastes, water cycle intervention, transboundary pollution, massive tourism, second house settlements along the coasts, public ignorance of the value of the environment,

4. Policy

Policy issues	What measures should be undertaken to reduce nutrients? How Thessaloniki can have a clear water sea in its sea front? How a land planning for the aquaculture can be established? How fisheries can be regulated according to the carrying capacity of the system? How the summer tourist invasion can be managed?
Policy changes	Management plan and measures for the treatment of the domestic sewage Land planning of the mussel farms Measures to avoid over fishing

5. Stakeholders and Institutional Governance

Major organisations	Organisation for the Master Plan and Environmental Protection of Thessaloniki Thessaloniki Prefecture (Department of Agricultural Development, Department of Fishing, Department of Water Resources and Irrigation Works)
Other leading organisations	Thessaloniki Water Supply and Sewerage Company S.A. Thessaloniki

6. Partner Collaboration

SPICOSA Partner Collaborations.	Partners : **AUTH** University of Thessaloniki, Aegean University, **EREOPE** University of the Aegean

7. Systems Studies

Long time series	Hydrochemical, -physical and phytoplankton data, river discharge and nutrient loads. Benthos, fish data. Various and large amounts of additional data e.g. meteorological, hydrodynamic, sediment, heavy metal, biological data.
Research Projects *Socio-economic study*	**EUROCAT [An ELOISE EU-Project] :** *European catchments. Catchment changes and their impact on the coast* Long-term assessment of N & P loads and heavy metals of the Axios River and their impact on the coastal system of the Thermaikos Gulf. Formulation of management proposals aiming at the sustainable development of the river catchment and the coastal zone **INTERPOL [An EU Project] :** *Impact of natural and trawling events on resuspension, dispersion and fate of pollutants* Study of the effects of natural and anthropogenic (trawling) sediment resuspension on the biogeochemical cycles and transfer of pollutants, nutrients and key-elements in the continental shelf of the Thermaikos Gulf. **Metro-Med [An EU-MAST-III ELOISE-Project] ;** *Dynamics of Matter Transfer and Biogeochemical Cycles: Their modelling in Coastal Systems of the Mediterranean Sea* The target of Metro-Med project is to study and simulate the mechanisms of matter transfer and of the biogeochemical cycles in the coastal ecosystems (incl. Thermaikos Gulf).