The project of Zone Atelier Pyrenees-Garonne (ZA PYGAR) Pyrénées-Garonne LTSER


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- Poster session: Sensors and analytical tools  
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SUMMARY

The project of Zone Atelier Pyrenees-Garonne (ZA PYGAR)


LTSER “Zone Atelier PYGAR” (labelling in progress) – CNRS-INEE, EcoLab, Campus ENSAT, Avenue de l’Agrobiopole, Auzeville Tolosane - 31320 Castanet Tolosan – France.

The ZA PYGAR project aims at studying the spatial dynamics of socio-ecological systems (SES) in South-Western France, going from the Pyrenees mountains to the plains of the Garonne river basin. PYGAR tries to answer three main scientific questions: 1/ What are the respective contributions of climate change and local anthropogenic disturbances to ecosystem changes (biodiversity, bio-physical characteristics)? 2/ How human practices drive ecosystem services? 3/ What are the relationships between resources availability and their accessibility, and the historic and prehistoric human population structure? The main transversal question of PYGAR is the adaption and response time of the different SES to global changes. The SES are studied at different time scales from the last glacial maximum to the present-day.

PYGAR clusters 17 Labs (40 full-time permanent staffs: 23 researchers/professors & 17 engineers/technicians) from Toulouse and Bordeaux, supported by the University of Toulouse and several French research organisms (CNRS, INRA, IRSTEA, IRD, CNES, BRGM, Météo France). Socio-economic partners (companies, farmer’s associations…) and public services (Occitania Region, Water Agency…) are strongly interested in the project. PYGAR includes 4 territories (sites ateliers): the central Pyrenees mountain range, the Garonne River, the agricultural hills and valleys of the Gascogne region and the Viaur-Aveyron river basin. The theory of SES provides a valuable tool to set up an interdisciplinary approach to deal with the co-evolution and resilience of the social and ecological templates of the studied systems facing global changes (climate change and land cover).

KEYWORDS  
Agriculture, Biodiversity, Mountains, Resilience, River water
What are the scientific questions addressed by the ZA PYGAR team?

The ZA PYGAR team addresses 3 scientific questions situated at the interface of socio-economic systems (SES) and the environment:

1. What is the role of socio-ecological systems (SES) in ensuring the sustainability of pastoralism in the Pyrénées-Garonne region?
2. What are the interactions between human practices and ecosystem services in the Basses-Corrèze region?
3. How do transitions along an upstream-downstream gradient, from the Pyrenees to the Gironde estuary, influence biodiversity and ecosystem functioning?

What is the main objective of the ZA PYGAR project?

The main objective of the ZA PYGAR project is to study the spatial and temporal dynamics of socio-ecological systems (SES). PYGAR focuses on the interactions (nature and kinetics) between the socio-system and the ecosystem, incorporating spatial transitions along an upstream-downstream gradient, from the Pyrenees to the Gironde estuary. Transitions of scale and spatial modelling are supported by the expertise of remote sensing of participating teams. The SES are studied over different time scales, from the last Glacial Maximum to the present-day. More specifically, the objectives of PYGAR are:

- to quantify the responses of ecosystems and socio-ecosystems to global change
- to understand complex processes within these systems over the long term
- to acquire data for theoretical modeling and to parameterize and validate these models
- to provide a platform for collaborative studies and to promote interdisciplinary research
- to generate data and a better understanding of socio-ecological systems for decision-making and management
- to develop scenarios to support the implementation of policies within the domain of the environment

What are the Research Groups involved in the ZA PYGAR project?

The Research Groups involved in the ZA PYGAR project are:

- AGIR, UMR INRA-NP
- AMIS, UMR CNRS-UT3
- BRGM, Dir Rég. MIPy
- CEBSIO, UMR CNRS-IRD-CNRS-UT3
- CEFIS, UMR INRA
- CNRM-GAME, UMR CNRS-Météo Fr.
- DYNAFOR, UMR INRA-NP
- EABX, UR IRSTEA
- ECOLAB, UMR CNRS-UT3-NP
- EDB, UMR CNRS-UT3-ENF
- ETBX, UR IRSTEA
- GEODE, UMR CNRS-UT2
- GET, UMR CNRS-UT3-IRD
- LEREPS, UMRMA UT1-IEP-ENFA-UT2
- ODR, US INRA
- SETE, UMR CNRS-UT3
- TRACES, UMR CNRS-UT2-MCC

What are the Socio-Economic Partners of the ZA PYGAR project?

- Company of Gascony Hills development (CAGC)
- Farmers’ Grouping of Toulousain Gascony (GAGT)
- Acceptables Averins Company
- ADICT Solutions Company
- EDF Group
- VEOLIA Company
- Pyrenees National Park (PNP)
- French Water Agency (AEAG)
- French Agency for Biodiversity (ONEMA)
- DRAAF, DREAL, SMEAG
- Occitania Regional Council
- Departmental Councils
- Toulouse Metropole
- Daptal Agricultural Chambers
- National Botanical Academy...