



OT-Med: *Objectiva Terra - Mediterraneum*





Context

- The Mediterranean Basin has been a key area of human-environment interactions for thousands of years, inducing a large diversity of cultures and ecosystems
- It is at the interface of climate systems, with large population densities and high seismicity
- MISTRALS has been launched as a meta-programme to stimulate studies dedicated to Mediterranean





Objectives










- To coordinate and stimulate research on human – environment interactions in Mediterranean ecosystems, accounting for ecosystem functioning, biodiversity and socio-economics
- To identify and evaluate innovative strategies to help decision-making by opening up environmental, economic and social opportunities for sustainability
- To increase the international visibility of regional research in this domain
- To establish an interdisciplinary centre for environment and sustainable development in the Mediterranean Basin and arid regions (Sahel), with a focus on climate, natural hazards and associated risks



Means of action

- Research:
 - stimulate interdisciplinarity and collaboration between labs
 - build a bridge between geo-physico-biological and human/social sciences
 - design an integrated approach to drive decision-making
- Training:
 - our students: at the master, doctoral and post-doctoral levels
 - attract excellent international students and researchers (especially from South)
- Connection to the socio-economical world:
 - communication, transfer of knowledge
 - common projects (Poles of competitiveness, local governments, associations ...)

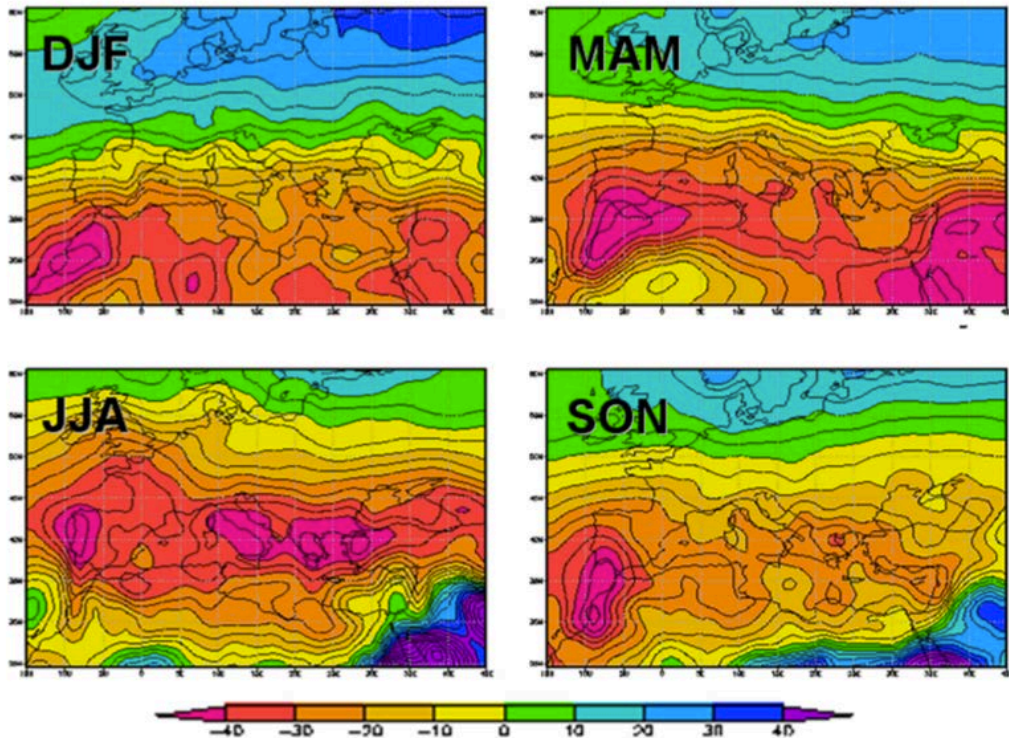
The consortium

Units	Disciplines and key words	Authorities
CEREGE 	Terrestrial and marine geosciences, paleoclimatology, seismology, coastlines, geomorphology, climatology, hydro(geo)logy	AMU, CNRS, IRD, Coll.Fr
ECCOREV 	All	AMU, CNRS
GREQAM 	Environment economics	AMU, EHESS, CNRS
MIO 	Marine geosciences: physics, biogeochemistry, ecology, resources, contaminations	AMU, CNRS, IRD, U.Toulon
IMBE 	ecology, terrestrial and marine biodiversity ecosystem services, paleoecology, land use, conservation	AMU, CNRS, IRD, U. Avignon
CERIC/DPCDIDE 	International law, environment law	AMU, U. Pau, U. Toulon, CNRS
GSE 	Soil biogeochemistry, land use	INRA
ESPACE/DESMID 	Sociology, geography, water resource	AMU, CNRS
REAX 	Risks, hydraulic, forests, hydrology, hydrobiology	IRSTEA
ECODEV	Economics, agronomy	INRA

+ UMS PYTHEAS

The science

Precipitation change (% , 2071-2100 minus 1961-1990),
MGME ensemble average, A2 scenario



- Three thematic axes
- Two transversal axes

Axis 1: Understand and evaluate the climatic changes and natural hazards in Mediterranean



- Sea: thermohaline circulation, meso-scale processes, air-sea interactions, impact of contaminants on the sea
- Aquifers, Lake Chad, catchment areas: evolution, salinisation, water resources
- Forest ecosystems: climate-fire-management interactions
- Long time-scales: paleoclimatology, paleoceanography, paleoseismology, archeology
- Morphogenesis, seismic risk, coastline changes





Axis 2: Services provided by the Mediterranean ecosystems

- Biodiversity : databases, conservation, management, services, evolution
- Soils : impacts of land use and climate, quality indicators, modelling and management
- Agriculture et forestry: modelling and scenarios
- Marine ecosystems: functioning, resources, trophic webs, artificial reefs, marine protected areas



Axis 3: Human-environmental interaction: perception, adaptation and mitigation



- Modelling decision making in the context of risks
- Co-evolution of climate and societies, adaptation to climatic change
- Comparison of international governance regimes for climate and biodiversity
- Improved management of ecosystems for conservation and sustainable delivery of ecosystem services



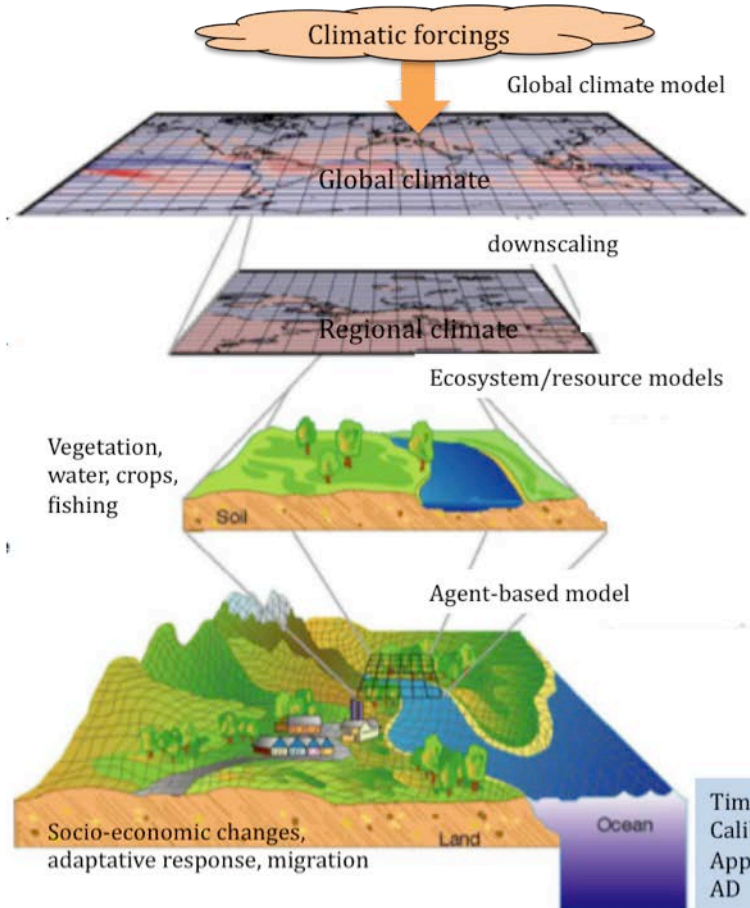


T1: The observation systems and databases

- Marine observation services (Moose, Antares, Somlit, Emso, biodiversity ...)
- Human-Environment Observatory Provence Mines Basin
- Oak Observatory @ OHP (O3HP)
- ICOS@OHP: greenhouse gases observation
- Chad Observatory: agro-pastoral activities and fisheries
- Climed Observatory: climatic change impact on Mediterranean scrublands

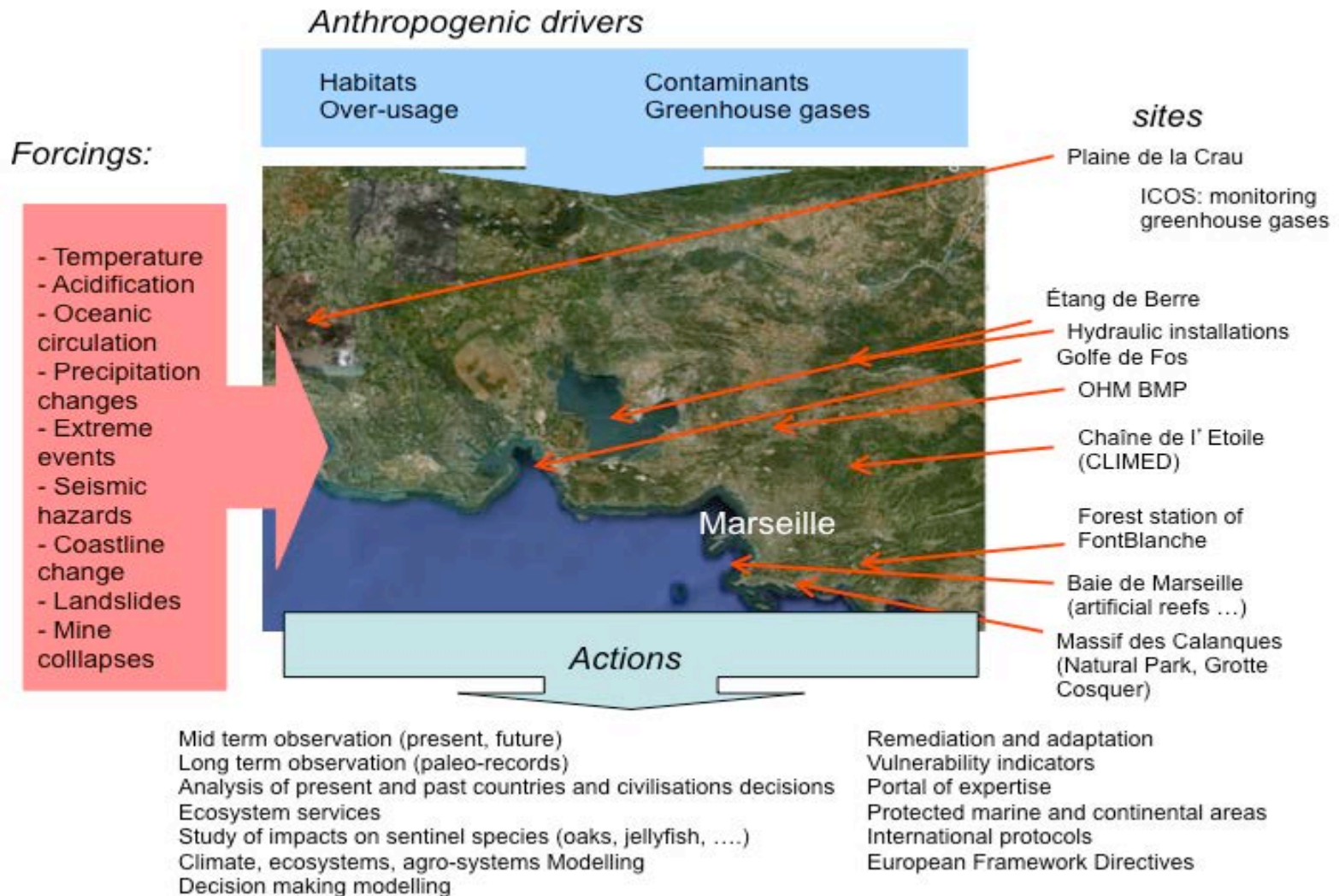


T2: Toward an integrated modelling of the Mediterranean systems



- Simulations of coupled climate models (IPSL, CNRM, LOVECLIM)
- Terrestrial ecosystem models: natural vegetation, hydrology, agrosystems (LPJ-Guess, LPJmL), soils
- Ocean model: circulation, biogeochemical cycles, ecology (Eco3M)
- Behavior of societies in response to climate stresses
- Model coupling and data assimilation
- Simulations for the past, present and future

A case study of big city: Marseille



Training activities





Enhance existing training

- ambitious policy for the reception of visiting researchers, post-docs and Ph.D. fellows, and exchanges with southern countries
- Academy-Industry Chairs
- international symposia and workshops
- regular series of workshops, summer schools and conferences
- interdisciplinary exchanges and training with Master and Doctoral level programmes, with particular emphasis on North African countries

Towards the socio-economical world



Communication and common projects



- Joint publications, conferences
- Scientific popularisation, conferences for public, website
- Academy-enterprise chairs
- Common projects with Pole of Competitiveness, UNEP ...
- Reference portal for expertise with the construction and maintenance of document archives, databanks, expertise and joint project support for both local and national governments, competitiveness poles, firms and associations
- IRSTEA experience (Carnot Institute)
- Relationships with ValorPaca: improve the stakeholder dimension of scientific projects



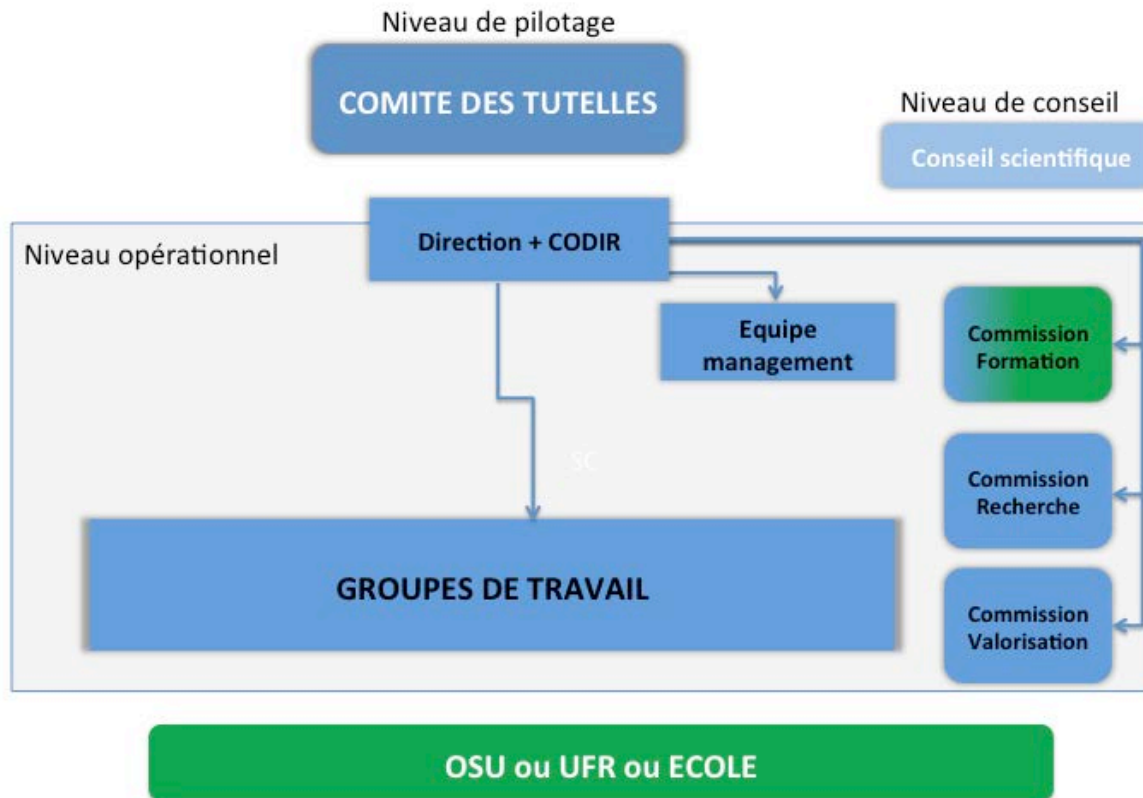


International dimension

- The “Earth Institute” of Columbia University
- The “Grantham Institute” of Imperial College and the London School of Economics
- Consolidate and extend relationships with scientific institutes and universities from the south
- International Scientific Committee
- Organisation and participation to international conferences
- Invitation of young and senior scientists (scientific residences)

Organization

Gouvernance LABEX



Budget : 7 M€ (2012-2019)



- Personnel: Project manager, modelling engineer, database engineer, communications assistant (1.3 M€)
- 30 years of post-doc (1.3 M€)
- 24 doctoral fellowships (3 yr) (2.4 M€): could be multiplied by collaborations with PACA, IRD ...
- Internal call for collaborative proposals (0.6 M€)
- Mobility fellowships (0.5 M€)
- Organisation of workshops, conferences, summer school (0.2 M€)
- Other costs, missions, functioning (0.6 M€)



Governance: management board (conseil de direction)



- Focus on science: strategy, evaluation and selection of projects, fellowships ...
- Composed by
 - Leaders of axes, sectors, labs
 - 25 members
- 2-3 meetings/year

Executive board
(bureau):
director, four co-dir



Governance: International Scientific Committee



- 10-12 members
 - Outstanding scientists in our domains
 - Some representatives from South
 - Evaluation of our strategy, advices ...
 - 1 meeting / year
- (see next talk)

Governance: Steering Committee (comité de pilotage)



- Representatives of authorities (*tutelles*) : AM*IDEX, AMU, CNRS, IRD, INRA, IRSTEA
- A few representatives of socio-economical world: Pôles Risques, région PACA, SMA, CG13, CPA, ...
- To discuss funding and partnership
- 1 meeting / an



Call for proposals

- doctoral fellowships
- post-doc fellowships
- Training projects
- Small incitative projects for inter-lab collaboration
- Outgoing and ingoing visits



First actions

- Four doctoral fellowships
- Two international training projects
- Three Cofund post-doctoral fellowships

First doctoral fellowship campaign



- Launched in April
- Criteria
 - Quality of the project with adequation OT-Med
 - International aspects
 - Interdisciplinarity with implication of min two labs
 - quality of the applicant
- 15 applications received
- MB 29th June: 4 projects + 1 complementary

Projects selected

- Two twin projects involving ecology, agronomy, economy, climatology
 - Bondeau A. (IMBE): *Modeling of Mediterranean agrosystems functioning. Analysis of scenarios for the future of the Mediterranean agriculture in a context of global change*
 - Kirman A (GREQAM): *Adaptation and Reaction of Societies to Environmental Change with particular reference to its impact on societies in the Mediterranean Region*
- A joined thesis with Tunisia
 - Quéguiner B (MIO): *Observation of the plankton community structure in relation to the biogeochemical cycles in the Gulf of Lions and the pelagic ecosystems of North Tunisia (Bay of Bizerte and Gulf of Tunis)*
- A thesis involving physics, hydraulics, ecology
 - Mériaux P. (IRSTEA): *Detection tree roots planted in the soils dans les sols d'ouvrage hydrauliques par méthode électrique.*
- A thesis involving observation system (O3HP), modelling and ecosystem services
 - Reiter I (ECCOREV) *The ecophysiological basis of carbonyl sulphide (COS) gas exchange of plants with the atmosphere.*

Training projects and workshops



- Project Hydraride - CEREGE - P. Deschamps, G. Menot - field school in Cameroun : several universities of France and Africa, IRD – 5 students from master SET
- Master in ecology between Aix-Marseille University and University of Sfax, Tunisia - IMBE - F. Médail
- Workshop Biodivmex, Malte sept 2012, 40 participants



Fernand Braudel – IFER Fellowships – EU Cofund

- 3 ingoing fellowships for mobility: 9 months
- 50% paid by EU, 50% by OT-Med, 20k€ net
- Call published in July, deadline 30th September
- Thematics at the Interface between sciences and social sciences
 - Vulnerability of Mediterranean coastal areas to natural hazards, including global change
 - Adaptation to global change
 - Modelling decision-making in context of risks
 - Human-environment relationships in the past
 - Biodiversity management and sustainable delivery of ecosystem services
 - International governance for environment