Measuring
Land surface fluxes – Soil profiles – Hydrological balance

Objectives

- List possible contributions to WG2
  - local measurements on specific ecosystems,
  - Mesoscale/pilot-sites -long term observatories
- Define measurement requirements

- Common (internal) database ?

- Organisation of Task Team for Observation ?

Local measurements on specific ecosystems

Requirements

- SOP (at least) – EOP recommended (L
- Fluxes
  - Water (& Carbon), Energy
  - Footprint (wind direction)
- Soil moisture/temperature (surface e.g. 5cm, deep e.g. 30cm)
- Soil characteristics (water storage capacity, depth, texture)
- Water table (where relevant)
- Atmospheric forcings
  - Air temperature/humidity, SW, (LW) radiation, Wind speed, Precipitation
- Vegetation description (type, height, LAI)

When possible

- Ecophysiological measurements (sap flow, water potential, stomatal resistance …)

Synergies between sites : methodology

Local measurements on specific ecosystems

List of sites

- CarboEurope (UNITUS?)
- Observatories in SE France
  - Avignon –crops-
  - Tour du Valat –salt marshes
  - Crau –dry grasslands
  - Fontblanche –mixed forest (TbC)
  - Manosque, OHP - oak, France (TbC)
  - Puechabon CarboEurope site – oak, France (TbC)
  - Corsica (TbD), D. Lambert + KIT, INRA orchard site? Natural vegetation?, soil moist/temp, fluxes, 1 year

Local measurements on specific ecosystems

List of sites

- Italy
  - Lecce –mixed periurban
  - Bari –crops
  - Lamezia Terme, Calabria (am.sempreviva@isac.cnr.it www.crati.it) –orchards (TbC)
  - Tor Vergata –grass, turbulence, boundary layer, upgrade TbD
  - Lampedusa (alcide.disarra@enea.it) – dry grassland, radiation fluxes, heat flux, upgrade TbD

Mesoscale/pilots -Sites

Requirements

- Improved estimation of the water balance on small sub-catchments

- EO data
  - Land cover mapping
  - Vegetation dynamics

Possible

- Upscaling with airborne observations, e.g. both sea and land (KIT –Dornier-128, SAFIRE –ATR-42)?
  - Fluxes
  - Remote sensing (e.g. microwave radiometry, infrared, VIS/NIR)
- Spatial variability at fine scale (Hillslope) of soil moisture

Synergy between sites and WG3 : methodology sharing, intercalibration?

Mesoscale/pilot-Sites

List of Mesoscale/pilot sites

- Remedhus, Spain, Salamanca
- SMOSMANIA+OHMCV, France
- Crau-Camargue (drylands, wetlands), France
- Karst observatory, HSM (+BRGM), France
- Emilia-Romania, Italy
- Extensive soil moisture network in Turkey (TbC)
- Israël, network of sites (TbC)
- Croatia ?
- Egypt?
- North Africa?

Upgrade and measurements implementation

- To reach the site requirements (funding?)
- Implementation ➔ funds strategy

  ➔ Build an exchange strategy to make HYMEX experiment attractive for experimentalist

Common internal database?

- Usefulness
  - visibility
  - easier data access within the project

- « Meta-data+links » seems more realistic than a central database

  (Existing long-term sites with their own data policy, diversity of instrumentation for different sites)

- TbC at project level

Organisation of TTO?

- A TTOs per mesoscale/pilot site + Coordination (TS?)
- One TTO for all local sites
- Per-variable TTOs don’t seem useful (standardization and intercalibration strategy to be done at the TS level)
- A form will be sent in order to characterise the possible (super-) sites