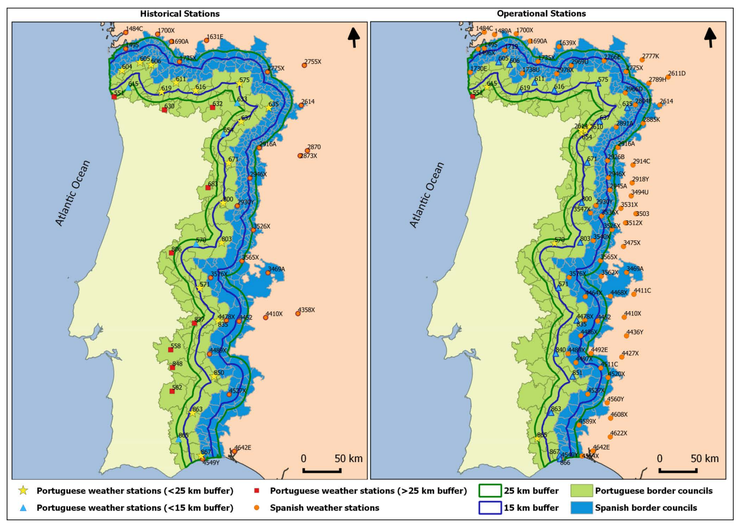
SpitFire

The SpitFire project is cofinanced by European Commission from the contract ECHO/SUB/2014/693768

Analysis, Evaluation and Data Exchange of Common Transboundary Data

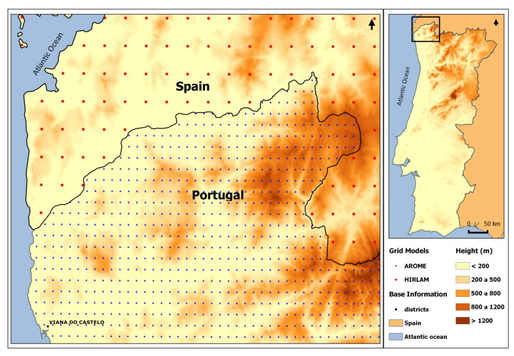
SPITFIRE common geospatial information and data sources, data homogenization and exchange, SpitFire data repository structure, IPMA and AEMET operational numerical weather prediction models

METEOROLOGICAL DATA



For climatological and validation purposes, surface meteorological stations observations from IPMA and AEMET were collected and the FWI index computed, for the period 1999-2014.
Several methods (time and spatial interpolation) were applied to fill in missing data according to the nature of the meteorological parameter.

IPMA and AEMET use different models, different scales and color codes and different operational methodologies in the communication to the civil protection authorities.

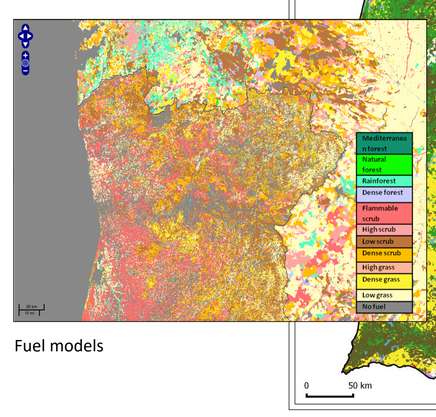


IPMA and AEMET models have different horizontal resolutions: AROME 2.5km (IPMA) and HIRLAM 5km (AEMET) and the grid points doesn't match.

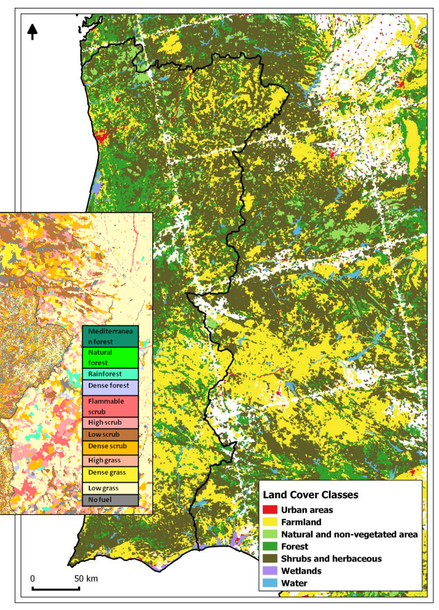
STRUCTURAL INFORMATION

Tematic Information:

- Fuel models
- Hidrography
- Land cover
- Population
- Protection areas



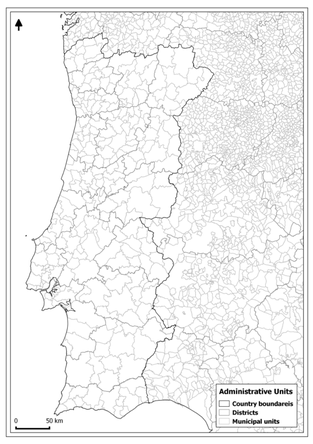
Fuel models



Corine land cover (2012) – Copernicus Land Monitoring Services.

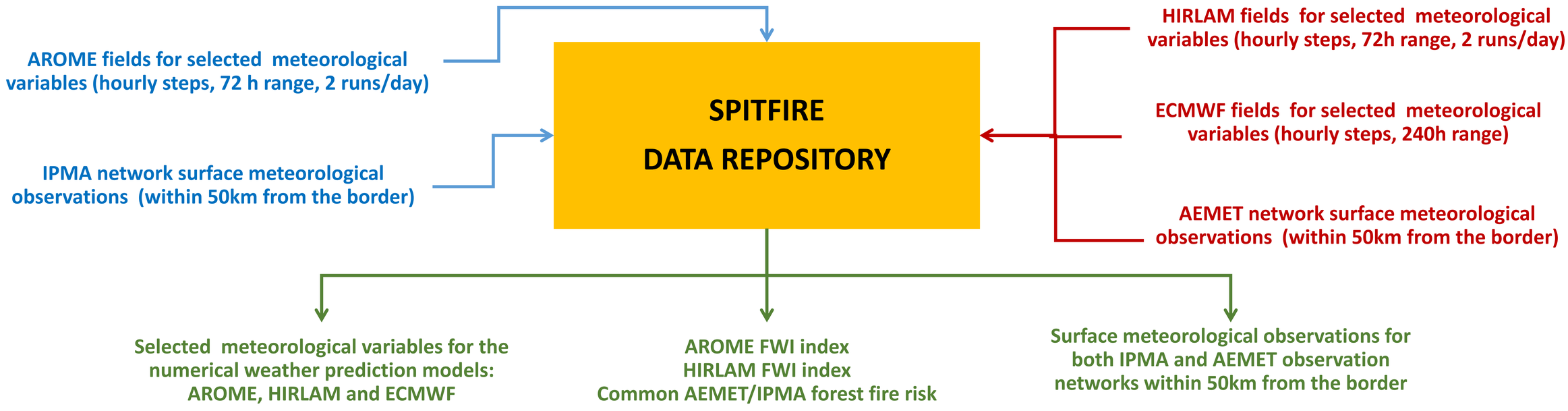
Base Information:

- Administrative boundaries
- Hidrography
- Digital Elevation Model (DEM)



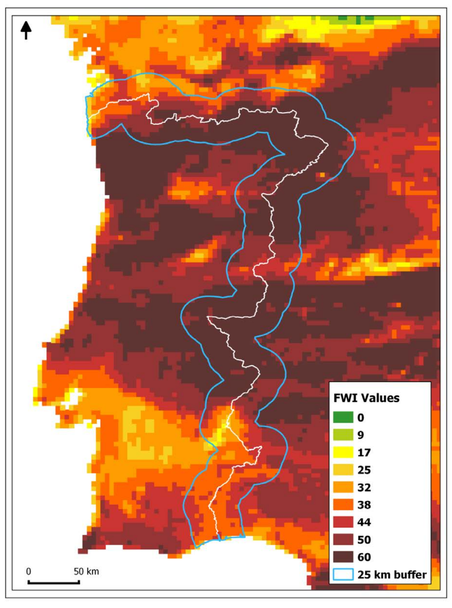
Administrative units (DGT, IGN)

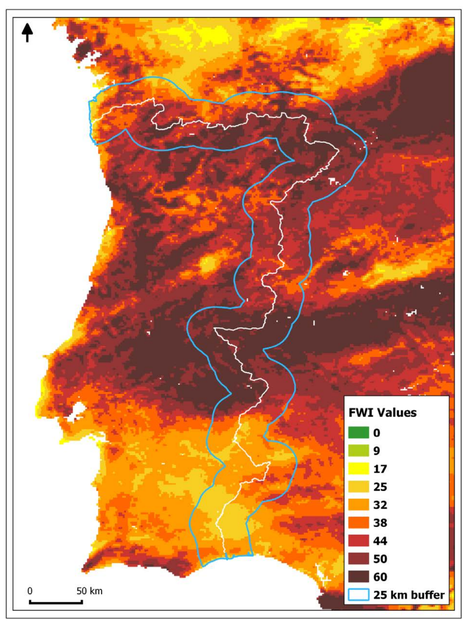
PROJECT DATA FLOW DIAGRAM

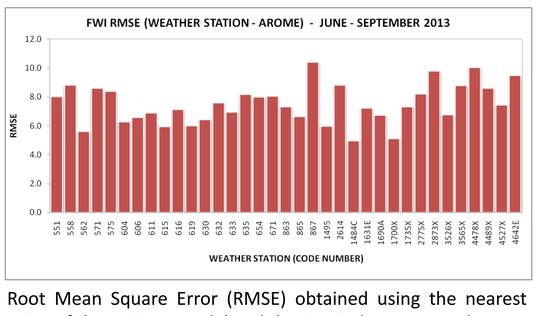


FWI AROME and FWI HIRLAM - EVALUATION

Example of FWI index analysis (H+00), computed at grid point level for both AROME (left) and HIRLAM (right) for the 7th August 2016. On a simple visual analysis there is a good agreement between both models spatial variability, although on a global statistical analysis HIRLAM presents slighter higher values.







Root Mean Square Error (RMSE) obtained using the nearest point of the AROME model and the FWI index computed over a group of weather stations (IPMA and AEMET surface observation network) in the period of june to september 2013.

Temporal evolution of the mean values of the FWI index (yellow) and the input fields of wind speed (green) and relative humidity (blue), June to September 2016. Average values were computed over area for the northern (left) and southern (right) aggregations of districts/provinces enclosed by the border line, the 25 km buffer, and the administrative limits of each district/province. The results show, by simple visual comparison, a better agreement in the northern aggregation FWI as a result of larger differences between AROME and HIRLAM relative humidity in the southern regions.