

Science literature database on Mediterranean forests and climate change

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SCOPE

Mediterranean forests are closely linked to people. They contribute to rural development, poverty alleviation and food security, and to agricultural, water, tourism and energy sectors. However, they are nowadays subjected to increasing pressures, mainly caused by human activities and climate change. Due to climate change, temperatures are increasing, rainfall decreasing and extreme events occurring, which result in loss or decrease of the goods and services Mediterranean ecosystems provide.

The objective of the present study is to have a scientific database available online within the framework of the project “**Maximize the production of goods and services of the Mediterranean forest ecosystems in the context of global changes**” funded by the French Global Environment Facility (FFEM). This project focuses on five components and the database is part of the specific activities of the component 1 (see box 1).

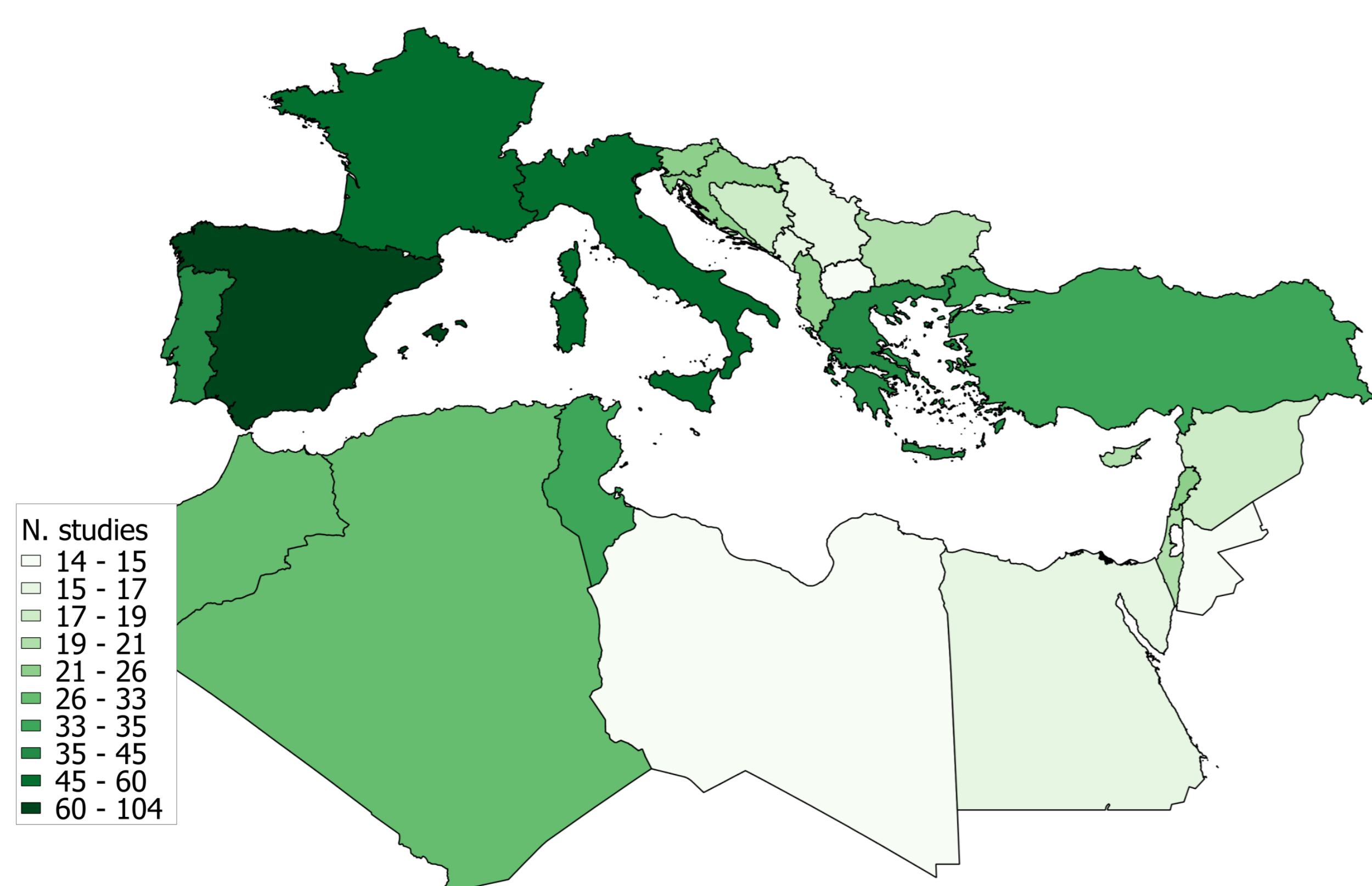


Figure 1. Distribution map of studies about climate change carried out in the Mediterranean region. From dark to light the countries with higher number of studies to the ones with less

Box 1. Components of the project:

- **Component 1:** Production of **data** and development of **tools to support decision and management** of vulnerable Mediterranean forest ecosystems affected by climate change and the ability of these forest ecosystems to adapt to global change;
- **Component 2:** Evaluation of the **economic and social value** of goods and services provided by Mediterranean forest ecosystems in particular through the study of multiple issues related to environmental changes and their potential effects on the socio-economic development of Mediterranean territories;
- **Component 3:** Development of participatory and territorial approaches for **forest governance** in these Mediterranean forest ecosystems;
- **Component 4:** **Optimization** of environmental goods and services provided by the Mediterranean forests and valorisation of these efforts of optimization (including **carbon sequestration**);
- **Component 5:** Support to the coordination and **communication** activities of the Collaborative Partnership on Mediterranean Forests (CPMF).

METHODS

This review was carried out collecting scientific papers and/or books through online research, using the web tools ©Google Scholar (<https://scholar.google.com/>) and ScienceDirect® (<http://www.sciencedirect.com/>). The search was done in English, French and Spanish, covering a wider range of publications.

Only publications from 1990 to date were taken into consideration, and only works about specifically climate change and Mediterranean ecosystems/species were included.

All the papers were classified according to the component they were most closely related to. For each one, the following data were collected: Title; Author(s); Year of publication; Name of the journal (if applicable); Volume, issue (in case it was a journal); Language in which was written; Study area; Species studied (if any); Component; Pilot site(s) where the study could be applied; Keywords; and Abstract.

RESULTS

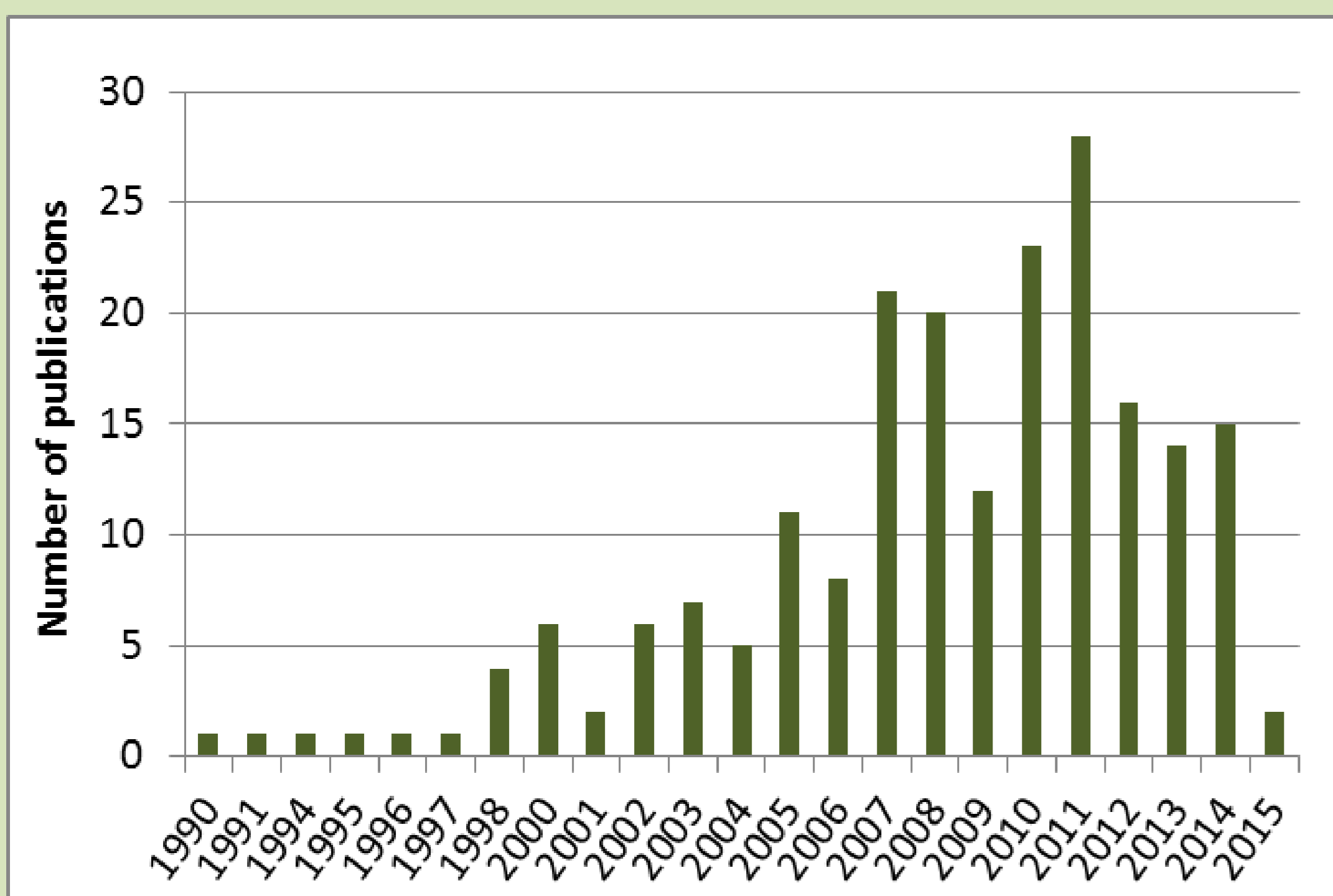


Figure 2. Yearly distribution of the publications on Mediterranean forests and climate change

- Database with over 200 studies accessible from the FAO website of the project (<http://www.fao.org/forestry/82782/en>)
- 80% of publications in English
- Catalogued studies mainly carried out in the countries of the northern rim of the Mediterranean basin (figure 1)
- Increasing trend of research on Mediterranean forest and climate change since the 1990's (figure 2).
- The search can be done filtering the papers by country, keyword and/or species. Search menu available in English, French and Spanish, results in their original languages



Figure 3. Results' list

Field	Value
Author(s)	Evrendiek F
Year	2004
Journal	Journal of Environmental Monitoring
Volume	6, 26-30
Languages	English
Study area	Turkey
Species	Cedrus libani (rich), Ceratonia siliqua L., Cupressus sempervirens L., Pinus brutia Ten., Pinus halepensis Mill., Pinus peuce L., Pistacia lentiscus L., Quercus ilex L.
Components	
Pilot Sites	Barbara, Chelva, Duzlergami, Dytifa, Jabal Moussa, Maamora, Silana
Keywords	Environmental monitoring; Carbon budget; Global climate change;
Abstract	Environmental monitoring of national-level comparisons of CO2 emissions is needed to quantify sources and sinks of carbon (C) in national ecosystems. In this study, a national forest inventory database was used to estimate the past and current pools and fluxes of C in deciduous and coniferous forest and woodland ecosystems (207 × 106 ha) of Turkey. Growing C stock was 12.631 t C ha ⁻¹ in 1960 and 16.55 t C ha ⁻¹ in 1995. Total C store in the whole live woody biomass was estimated at 22.771 t C ha ⁻¹ in 1995. The total flux of C from the atmosphere into the forest and woodland ecosystems driven by primary productivity was about 1.461 t C ha ⁻¹ (or 30.2 Mt C) in 1995. The estimated net release of C from the forest

Figure 4. Summary table for each publication

- 11 keywords were selected as search filters : *Carbon; Climate change; Drought; Ecosystem valuation; Forest fires; Governance and policies; Growth; Land cover / Land use; Modelling; Sustainable management; Water*

This database will provide a free-access tool to be used by experts, policy makers, forest owners, managers and relevant stakeholders throughout the Mediterranean Basin to support decision making with regards to adaptive management of Mediterranean forest ecosystems to climate change