Department of Science for Nature and Environmental Resources of the University of Sassari

Forestry and Wood Research Centre of the Italian Council for Agricultural Research and Economics

Institute of Ecosystem Study of the National Research Council, organization unit of Sassari

INTERNATIONAL CONGRESS ON CORK OAK TREES AND WOODLANDS

Conservation, Management, Products and Challenges for the Future

3° National Congress of Cork

Sassari, May 25 – 26 2017

SPONSORSHIP

Ministero dei beni e delle attività culturali e del turismo

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

Comune di Sassari

Fondazione di Sardegna

Camera di Commercio Sassari - Nord Sardegna

CONFINDUSTRIA Centro Nord Sardegna

CORPO FORESTALE E DI VIGILANZA AMBIENTALE

Forestas
Agentzia forestale regionale pro s'isvilupu de su territòriu e de s'ambiente de sa Sardigna
Agenzia forestale regionale per lo sviluppo del territorio e dell'ambiente della Sardegna
REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

E F I
European Forest Institute

SERVA ME · SERVABO TE
Accademia Italiana Scienze Forestali

SISEF
Società Italiana di Selvicoltura ed Ecologia Forestale

ITALUS HORTUS SOI
Società di Ortoflorofrutticoltura Italiana

ISBN **978-88-907678-0-7**

DOI **https://doi.org/10.14275/978-88-907678-0-7**

Tipiditappi

Sughero d'albero fatto a pezzetti,
tipi di tappi , quelli che vuoi.
Tagliali lunghi, tagliali stretti,
tipi di tappi, fatti da noi.
Taglialo bene, taglialo tondo,
tipi di tappi, quanti ne vuoi.
Tappi di sughero per tutto il mondo,
tipi di tappi fatti da noi.
(Cecchi-Tognolini, Filastrocche e Canzoni)

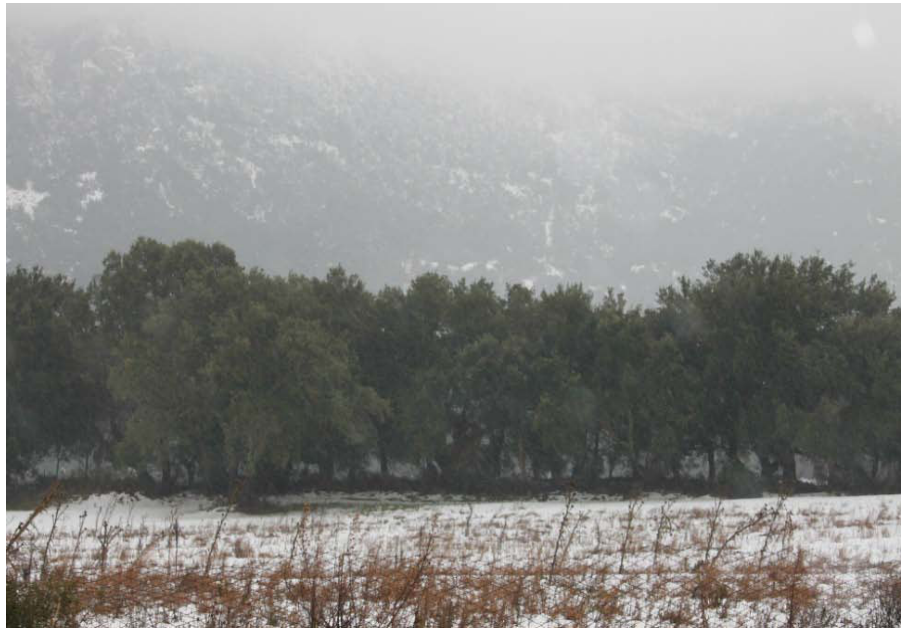
Dettori S., Fligheddu M.R., Cillara M. Editors

Printed by

Università degli Studi di Sassari
Centro Stampa

ORAL PRESENTATION

Session 3: *Multifunctionality of cork oak systems, biodiversity, climate change mitigation and landscape/ecosystem services*



MODELLING GOODS AND SERVICES FROM CORK OAK FORESTS

Puletti N.[1*], Schirru M.[2], Dettori S.[2], Corona P.[3], Quatrini V.[3]

[1] Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria, Unità di Ricerca per il Monitoraggio e la Pianificazione forestale (CREA-MPF), P.za G. Nicolini, 6, 38123 – Villazzano (TN) Italy
[2] Dipartimento di Scienze della Natura e del Territorio - DipNeT, University of Sassari, Italy
[3] Consiglio per la Ricerca in Agricoltura e l'analisi dell'Economia Agraria, Forestry Research Centre (CREA-SEL), Via Santa Margherita 80, 52100 Arezzo, Italy

* Corresponding Author: nicola.puletti@crea.gov.it

Forest ecosystems provide multiple essential ecosystem services (ES) for ecological and human well-being. In forest management, understanding of the services and functions distribution, interactions and assessing the economic value of forest ES represent an important future challenge to balancing trade-offs among them. In this study we consider three ES related to cork oak forest management: (i) carbon storage and sequestration, (ii) water yield, and (iii) cork production. We used the InVEST (Integrated Valuation of Environmental Services and Tradeoffs) model to compare current forest management (business as usual) with alternative management options over about 2,300 ha of cork oaks forests owned by Sardinia Region (Italy) and managed by the public Forestas Agency. Taking into account four carbon pools (above ground biomass, below ground biomass, dead organic matter, soil organic carbon), the current carbon stock value of the considered cork oak forests is estimated in about € 15 millions. Regarding the water yield assessment, we have considered two destinations, namely domestic and agricultural: a total of more than 120,000 m^3 of water yield was reached. Finally, the number of stems, the period between two cork extractions, and the presence of pasture were used as factors affecting cork production. This approach, applied for the first time worldwide in cork oak forests, appears to be feasible and useful to support forest management and planning strategies in environmental contexts with similar characteristics.

Keywords: Spatial Decision Support System, InVEST model, carbon storage and sequestration, water yield, cork production.