“Using payment for ecosystem services to promote the conservation of cork oak woodlands”

Miguel Bugalho
WWF Mediterranean Program and University of Lisbon
Science Adviser for Forests and Biodiversity
Outline:
• Forests and the conservation of biodiversity and ecosystem services;

• Forest conservation tools: *High Conservation Value Forests, Forest Certification* and *Payment for Ecosystem Services*;

• Integrating conservation tools: A case study in the cork oak woodlands of Portugal

• Conclusions
Ecosystems sustain societies that create economies

Source: OLPR, WWF 2014
Sustainable Forest Management

Forest ecosystems harbour more than half of all terrestrial vertebrate species and generate essential ecosystem services.
Sustainable Forest Management:

• sustainable use and conservation of forests with the aim of maintaining and *enhancing multiple forest values* through human interventions (FAO 2014).

• stewardship and use of forests (...) in a way (...) that maintains their (...) potential to fulfill (...) *relevant ecological economic and social functions*(...) (http://www.fao.org/docrep/003/x6896e/x6896e0e.htm).

• dynamic and evolving concept which aims to maintain and *enhance the economic, social and environmental value* of all types of forests, for the benefit of present and future generations (UN 2008, Resolution 62/98).
Sustainable Forest Management

- Ecological Values
- Economic Values
- Social Values

SFM

Biodiversity and Ecosystem Services

Adapted from: http://www.for.gov.bc.ca/
Forest Certification
A proxy of sustainable forest management?

• Program for the Endorsement of Forest Certification (PEFC): 186 million ha or 4.5% of world forests (PEFC 2014)

• Forest Stewardship Council (FSC): 251 million ha or 6.1% world forests (FSC 2014)
FSC forest certification

• Aims to promote the sustainable management of forests;

• Forest landowners must comply with environmental and socio-economic management standards;

• Compliance with standards is third party audited.
Is forest certification delivering environmental benefits?


• Medjibe, Putz, Romero (2013) Environ Manage 51: 524-540: Stand structure, species, biomass


High Conservation Value Forests

HCV1 Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.

*E.g.* the presence of several globally threatened bird species.

HCV2 Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

*E.g.* a large tract of Mesoamerican flooded grasslands and gallery forests with healthy populations of Hyacinth Macaw, Jaguar, Maned Wolf, and Giant Otter, as well as most smaller species.

HCV3 Rare, threatened, or endangered ecosystems, habitats or refugia.

*E.g.* patches of a regionally rare type of freshwater swamp.

HCV4 Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

*E.g.* forest on steep slopes with avalanche risk above a town.

HCV5 Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or indigenous peoples.

*E.g.* key hunting areas for communities living at subsistence level.

HCV6 Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

*E.g.* sacred burial grounds within a forest management area or new agricultural plantation.

Source: [www.hcvnetwork.org](http://www.hcvnetwork.org)
HCVF explicitly integrates HUMAN NEEDS into a conservation framework.
HCVF explicitly addresses *ECOSYSTEM SERVICES* as conservation attributes.
HCVF explicitly considers **LAND MANAGEMENT** to maintain or enhance conservation attributes

“All Wealth Comes From The Land”

http://www.ag.ndsu.edu/
HCVF formally incorporates *PUBLIC PARTICIPATION PROCESSES* (increased power and legitimacy as a conservation tool)

PUBLIC MEETINGS .......THE LAST OF THE BLOOD SPORTS

THE CORRID COLLECTION NO 3
Application of HCVF, at the regional level, to southern Portugal

**HCVA1:**

1. **Protected Areas**

2. **Endangered and critically endangered species**

3. **Endemic species**

4. **Important areas for seasonal use**

**HCVA4:**

1. **Areas important for water basin protection**

2. **Areas important for preventing soil erosion**

3. **Areas important for fire prevention**

4. **Areas important for carbon storage**
Regional, significant large areas, of cork oak woodlands

Cork oak woodland and aquifer recharge rates

Priority habitats

Areas of potential occurrence of threatened bird species

WebGIS tool: HABEaS [www.habeas-med.org](http://www.habeas-med.org)
(Hotspot Areas for Biodiversity and Ecosystem Services)
Payment for Ecosystem Services

Adapted from Wunder 2009
Case study: Cork oak (Quercus suber) in Southern Portugal

- Endemic from Western Mediterranean Basin (Portugal, Spain, France, Italy and Algeria, Morocco and Tunisia) covering 2.5 million ha;

- Classified Habitat under pan European network of protected areas Natura2000 and of high conservation value;

- Cork harvesting is main economic activity, but also grazing, cereal crops, hunting;

- 100 thousand ha certified by FSC in Portugal the country with largest cork oak cover (736 thousand ha).

Photo: Miguel Bugalho
Payment for Ecosystem Services case in cork oak woodlands

The Green Heart of Cork project

The Coca-Cola Portugal – APFCertifica PES case

Type:
Payment for bundle ecosystem services in voluntary market

- Partner providing the service: APFCertifica Group Scheme - Forests landowners formed an association and adopted sustainable forest management practices in order to receive Forest Stewardship Council (FSC) certification.

- Beneficiaries: Coca-Cola Portugal – Refrige, beverage factory, located over the Tagus Aquifer (T3), consuming 500,000 m³/year of groundwater.

Services: Forest landowners committed to maintain good forest management practices within the 16,000 ha FSC certified areas. FSC certification places a strong focus in criteria related to biodiversity conservation and watershed protection. Approximately 600 hectares (ha) were considered to be of critical importance for biodiversity and water recharge of the aquifer T3 and therefore were considered High Conservation Value Areas.

<table>
<thead>
<tr>
<th>HCV</th>
<th>High Conservation Value Areas (HCVA) identified by APFC (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal Concentrations of Species</td>
<td>24.79</td>
</tr>
<tr>
<td>Watershed Protection</td>
<td>569.63</td>
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</tbody>
</table>

Location: Portugal, Alentejo and Ribatejo regions
Payment for Ecosystem Services in cork oak woodlands: Coca-Cola and APFC landowner association

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<tbody>
<tr>
<td>Biodiversity + Water</td>
<td>Responsible management practices</td>
<td>Coca-Cola Portugal</td>
<td>Regional and local community</td>
<td>Association of certified landholders</td>
<td>Voluntary market</td>
</tr>
</tbody>
</table>

Bugalho and Silva 2014 Unasylva
Take home message

Integrating HCVF, PES and Forest Certification:

• Generates a framework allowing clear identification of target areas for PES implementation;

• Ensures rewarding of those forest landholders effectively complying with sustainable management practices;

• Can be used elsewhere for similar conservation initiatives.

Thank you!