

# The value of Mediterranean forest ecosystems in MENA countries

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## Summary

How much are Mediterranean forests worth? This question used to go largely unanswered. Mediterranean forests provide a wide array of benefits, which are important for local communities (e.g. grazing, non-wood forest products, adaptation to climate change), the country (e.g. water quality, recreation) and the global community (e.g. carbon sequestration, biodiversity). Despite their importance, many forests in the Middle East and North Africa (MENA) are being cut or degraded, and their benefits are gradually lost. Incorporating the total forest value in decision making needs to be based on a comprehensive understanding of the magnitude of forest benefits in MENA countries.

This presentation estimates the economic value of forests in MENA and illuminates on the social costs of deforestation and forest degradation occurring in the absence of improved conservation. Estimating the value of forests in MENA focuses not only on tangible benefits (e.g. wood), but also on the less commonly-measured services (e.g. tourism and watershed benefits) that these forests provide. Based on the Total Economic Value (TEV) framework, this effort brings together forest valuations at the national level from eighteen Mediterranean countries, based on extensive local data collection.

The overall TEV of forests around the Mediterranean is estimated at about €133 per hectare. The average value is higher in the northern Mediterranean (€176 per hectare), and substantially lower in the North African (€67 per hectare) and Middle Eastern countries (€48 per hectare). Overall, forest in the Mediterranean provide annual benefits of over €50 per capita to people living in the region. Average benefits are higher in northern countries (over €70 per capita) and lower in MENA (€10 per capita). The greater degree of underestimation in the latter group suggests that the gap between the benefits in these countries compared to those in northern Mediterranean is likely to be lower in reality. Forest valuation in Morocco, Tunisia, Algeria, Lebanon, Syria and Turkey shows that watershed protection, grazing and non-wood forest products are among the most important benefits, while wood accounts for just a small share in the forests' TEV.

Failure to account for the multiplicity of forest benefits in management decisions leads to social costs of deforestation and forest degradation. In Iran, for example, the rate of deforestation is about 0.8% per year, while degradation affects more 50% of the country's most productive forests. The cost of deforestation and forest degradation are estimated at 0.7 percent of the country's gross domestic product. In other words, one hectare of deforested land today forgoes benefits valued at more than \$4,000<sup>1</sup>. This may suggest high social costs of deforestation and forest degradation also in other MENA countries.

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<sup>1</sup> present value, 25 years, 4% discount rate.

This work sheds light over the magnitude of forest benefits in MENA and indicates that watershed protection, grazing and non-wood forest products are among the most important forest benefits. However, they are not explicitly recognized and incorporated into forest management decisions, leading to potentially high social costs of deforestation and forest degradation.

## **Recommendations**

Recommendations towards incorporating forest benefits into decision-making:

- improve and expand data collection, through on-going monitoring of forest uses and studies that illuminate the cause-and-effect relationships between forests and environmental services, in particular forests and downstream water services. This will allow the identification of the areas where forests are most valuable and conservation is particularly needed.
- develop mechanisms that internalize externalities (e.g. water services) by learning lessons from their application in other regions (e.g. development of PES programs in Latin America and Caribbean).
- find mechanisms to conserve on-site benefits (e.g. grazing) by providing incentives to local communities for a more sustainable use of forests.

**Key words:** valuation, forest benefits, Total Economic Value, deforestation