A Conceptual View of the Development of Mediterranean-Type Ecosystems in Europe

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While we were working on the water economy of trees and shrubs in the Macchia of Southern Turkey, Province Antalya, we received an impression of the basic constraints for an overall development of this landscape. Because of the short duration of our stay in Turkey (3 1-month periods, October-November 1978, April-May 1979 and July-August 1979) and because of budgetary limitations, we were unable to undertake a comprehensive research effort on an ecosystem level. Therefore, important biological aspects such as nutrient cycling and socio-biological aspects such as urbanization trends, rural land use, etc. were not studied. So our contribution at this conference is based almost entirely on personal impressions of the environment as an entity, while being convinced that a better knowledge of the water economy of Macchia plants is at the moment of minor importance for the people living in this ecosystem.

The Mediterranean in North Africa, Southern Europe and parts of the Near East is very much different from all other mediterranean-type ecosystems of the world in some major respects:

- It has by far the longest history of very intense human use.
- It is still an area of underdeveloped countries with millions of people depending on this vegetation type more or less directly for their entire livelihood.
- There are very strong social, religious and economic dichotomies.
- Much of this land is an interface between semi-nomadic and subsistence farmers with their associated values and the tourist and associated tourist industries.
- There are substantial gradients in income and standards of living.

Major development trends in these countries do not meet the needs of the people living in the rural Macchia environment. These trends include, to name but a few:

- Further urbanization with major social changes occurring in both rural and urban environments.
- Unwise development of tourism, thereby steepening and making gradients of income and social behavior increasingly significant.
- The use of high technology-energy intensive developments such as road construction, export crops and timber production which consume badly needed foreign money, reduce local employment and increase the dominance of foreign goods.

In summary, these developments bring "western" ideas without appreciating the needs, existing skills and available resources. We, as ecologists, claim a holistic view of our discipline and, therefore, should be involved in these problems. In fact, we seem entirely bound to academics and offer little help or insight. We erroneously hope and feel that other people are responsible for the transfer of our scientific knowledge to such special problems.

Today, ecological thought regarding Macchia vegetation is still bound to the idea of degradation from a much more desirable climax situation. Most people even tend to make the goat a classical symbol of this degradation. One might just as appropriately take another view.

The Macchia is an amazing, genetically diverse resource which at least partly originated through "disturbance" by man. This human-induced environmental stress definitely was and still is a driving force in the evolution of this ecosystem during the last 10,000 years. We have to bear in mind that disturbance by man was and is a major agent in such high species diversity and site heterogeneity. Man himself probably should be looked upon as living more or less in harmony with this environment except perhaps during times of major social shifts. Therefore, the Macchia as a whole should be regarded as a system in equilibrium for long intervals. Although we do not presently know the role of Pinus brutia under premanagement conditions, we can assume that plantations of Pinus brutia on former Macchia landscape represent a possible major biotic degeneration and an apparent social alternation.
What we want to point out is not a new philosophy in dealing with man-landscape-ecosystem interactions, but perhaps a different focus for ecologists and land managers dealing with mediterranean ecosystems. We would encourage them to view the problem in a different way, focusing on people as well as on the environment.

If we took such an approach, the first conclusion would be a reevaluation of existing resources and, as a consequence, the development of new management concepts for Macchia vegetation types. The next conclusion would be a translation of successional studies on heavily disturbed sites into practical reclamation work.

Regarding the people, there is a very strong need for alternative strategies. One possible strategy involves more labor-based concepts such as those championed by the International Labour Office in Geneva, Switzerland. This may apply to road construction, handicrafts and other activities. This low energy, low investment concept will lead to a new evaluation of labor and might change the balance of an underdeveloped country in the long run.

Developing more diverse concepts for afforestation could be another objective for future development. We think especially of afforestations with indigenous Macchia shrubs and trees serving for hardwood, firewood and browsing material if properly managed. Here the scientific work on the water economy of plants could be of some practical importance.

The development of tourism should first respect the physical constraints of the environment. Second, we need to know possible schemes for coupling touristic interests with the problems of the region. Tourism in itself may not solve economic or social problems. It may have a positive impact on some economical aspects, but may also cause more problems in the long run.