

CLOSING SPEECH**E. WELTE****Vice-President of CIEC**

Mr. Chairman,
dear Ladies and Gentlemen,

I am very thankful to the Chairman of the Organizing Committee, Prof. Dr. Hüttl, for giving me the floor for the closing speech of this symposium. It is my impression that the subject of this symposium on agroforestry has documented a great potential for non-food production that can not only be utilized to meet the increasing demand for timber and other wooden products (i.e. chips for pulp and paper) and for nonfossil fuel for energy consumption, but also to protect natural forest reserves from ruinous exploitation and deterioration.

From the numerous communications and discussions, the general conclusion can be drawn that the management and economic aspects of multifunctional land-use systems have many facets and cover a wide range of strategies for biomass production from an extensive to a very intensive degree.

Agroforestry is highly relevant in this context, and is of increasing public interest the more land is taken out of food production.

The great diversity in the world market demand for non-food products needs specific land utilization methods and management systems for its satisfaction. Within this frame we have to ensure the maintenance of sound conditions of the natural environment as a compensating (buffering) medium for impacts of all kinds coming from industries, urbanization, traffic and other sources such as agriculture (i.e. pesticides, fertilizer misuse and surplus liquid manure from industrial animal production).

This makes clear that an optimal use of land for every kind of production has to take into consideration the site-specific ecological conditions under which a sustainable management has to operate and to respect the influence on soil erosion, water pollution and climate changes.

As far as forest management is concerned, the original primeval forest retains a unique position. It is the highest developed ecosystem in nature, characterized by an extraordinary complexity in the biological network between plant and animal. Its deterioration, or even its change from the natural climax into manmade climax represents the loss of an irretrievable and unreplaceable ecosystem. It also means the loss of a reference land area for investigations of natural processes without anthropogenic influences (the utilization by native indigenous people may be neglected here). The absolute protection of primeval forests can only be respected when the secondary stands on land already cultivated or suitable for recultivation (devastated land) are utilized to such an extent that products from the utilization or clearcuts of primeval forests are replaced.

In this respect, agroforestry offers a variety of opportunities for increasing the non-food production in close connection with commercial forestry.

In order to get economic results from soil management, an intensive cultivation within ecological tolerances is needed, and has to take into account of the principles of plant nutrition according to Liebig's law - namely, to replace at least all plant nutrients which have been removed by the yield (fertilization for maintenance of sustainability).

In agriculture, an adequate use of fertilizers is relatively easy to handle, but difficult and more complex in perennial stands like forestry and agroforestry.

The main reason for this is the much deeper zone of rooting and a greater soil volume for nutrient uptake, but also the heterogeneity of horizons throughout the rooted soil profile with layers different in nutrient potential and its mobilization.