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***The Meaning of Forests  
in a Perspective of Social  
and Political Development***

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## **THE MEANING OF FORESTS AS AN EXPRESSION OF CULTURE**

Forests cover a large proportion of land on earth and show great variety. They represent an abundance of life, contain many possibilities for living beings and provide habitat for many forms of life. Abundance, growth and continuity are prominent features in man's perception of a forest.

Some regions are covered by forests with interspersed settlements and fields. In others they form a mosaic amidst intensively populated areas, or are characteristic elements of the landscape following rivers or covering mountain ridges. The spatial distribution of forests, and the degree of their transformation by man are the result of physical conditions and of varying cultural patterns. This applies to forests that have been intensively used over centuries and show profound changes in vegetation.

Cultural developments also apply to forests which still appear to be in a natural state. They may have been left free from human interventions due to many reasons, e.g., physical inaccessibility, economic conditions or because they represent particular social and spiritual values. The border between intensively used forests and those showing little or no traces of human interference reflects social considerations, economic possibilities and political decisions. In this respect all forests, including those which we consider still as natural, are cultural phenomena.

It is not easy to give reliable figures on the world's forest area in view of varying definitions of forests and forest lands and different assessment and inventory techniques. The most consistent data base, especially for time comparisons, is that of the forestry department of the Food and Agriculture Organisation FAO. According to this source forests and woodlands cover slightly more than 30% of the world land area. About half of the world's forest and woodlands is situated in the boreal and temperate zones, whereas the other half is in the tropics and subtropics.<sup>1</sup>

Human activities influence forests in a rhythm which is sometimes difficult to assess at any particular time. Some of the changes are immediate and occur in the short term. Others, and often more important ones, are of an indirect nature and can only be seen in longer, historical dimensions. Natural forests have been or are changed in varying degrees into forests shaped by the influence of man. The forests of today show how people have been dependent on forests, and how they have used them at different times. The transformations of forest vegetation that we observe indicate the impact of social needs and changing economic and technological processes. Forests represent a testimony of the evolution of societies and cultures.

Major changes in land use result from clearing forests for agriculture and settlements, grazing and pasture, and man made forest fires. Large scale clearing for agriculture and pasture occurred

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<sup>1</sup> FAO: Production Yearbook, Rome 1990. More detailed information on forests in the respective ecological zones in: CEE-ONU/FAO: Les ressources forestières des zones tempérées, New-York, 1993. FAO: Forest Resources Assessment 1990, - Tropical World, "Forestry Paper" Nr. 112, Rome 1993. A summary of the information in: FAO: Forest Resources Assessment 1990 - Global Synthesis, "Forestry Paper" Nr. 124, Rome 1995.

during certain periods in Europe and North America and occur at present in tropical regions with deforestation rates of 1-3% for individual countries.<sup>2</sup> Grazing and forest fires are usually slower and less spectacular processes with nevertheless important effects on arid and semi-arid areas as well as in mountainous regions.

Changes in forests result from continuing practices of local uses. It requires detailed studies in order to assess their impact on the supposed natural vegetation. More visible and sometimes profound changes are due to intensive silvicultural practices, change of tree species, tree breeding and to large scale afforestation. If such developments have in the past mainly occurred in Europe and North America they become increasingly important in the tropical and subtropical belt and in particular in Asia and Latin America.<sup>3</sup>

The meaning of a forest is reflected in its human perception which is culturally formed. Societies have developed their notions of what forests mean to them. Whatever the particular representation of forests in a society is, it would certainly have a different relevance to what others can see and interpret in the dimensions of their own culture. Whereas the earlier literature focussed on particular mythological and religious aspects of trees and forests in local knowledge, belief and tradition,<sup>4</sup> more recent studies are concerned with trees and forests as a representation of culture and spirituality in a more general way. They examine the changes of the meaning of forests and the fundamental differences with which forests and trees may be perceived in different societies as part of evolutionary cultural processes.

Forests mean different things to different people in modern societies. If one would individually ask people what aspects of forests are important to them, which is rarely done, we would get answers

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<sup>2</sup> For the extent and speed of actual deforestation processes in the tropics see: M. PALO, G. MERY and J. SALMI: Deforestation in the Tropics: Pilot Scenarios based on Quantitative Analyses, in: FINNISH FOREST RESEARCH INSTITUTE (ED.): Deforestation or Development in the third World, Helsinki 1987.

<sup>3</sup> FAO: Management of Tropical Moist Forests in Africa, "Forestry Paper" Nr. 88, 1989; FAO: Review of Forest Management Systems of Tropical Asia, "Forestry Paper" Nr. 89, 1989. FAO: Aménagement et conservation des forêts denses en Amérique tropicale, "Forestry Paper" Nr. 101, 1992.

<sup>4</sup> Mannhardt's monumental work based on many individual studies, presents forest trees as mythological and religious representations and testimonials of divination, and describes their place in religious and traditional beliefs and practices of people in the ancient germanic world as well as the influence of greek, roman and asian mythology on it. W. MANNHARDT: Wald- und Feldkulte, Band I: Baumkultus der Germanen und ihrer Nachbarstämme, Band II: Antike Wald- und Feldkulte aus Nordeuropäischer Überlieferung erläutert, Berlin 1904 und 1905 (2nd edition). Another fundamental reference and source of incredibly rich information on trees and forests in magic and religion in European cultures, but also with reference to cultures in other parts of the world is: J.G. FRAZER: The Golden Bough - A Study in Magic and Religion, Volume I, Abridged Edition, New York 1944 (Macmillan). A reprint of the 3rd edition of the original work (1911) appeared in London/New York 1966, Macmillan/St. Martin's Press and contains 13 volumes. Religious and spiritual aspects of forests and trees have also found considerable interest in the forest science's literature of the second half of the 19th century as for instance in: A. DI BERENGER: Dell'Antica Storia e Giurisprudenza Forestale in Italia, Treviso e Venezia, 1859-1863, Roma 1982 (Reprint by the Italian Forest Service). A. SEIDENSTICKER: Waldgeschichte des Alterthums - Ein Handbuch für akademische Vorlesungen, Frankfurt a.O. 1886.

reflecting contradictory interests and convictions. The inhabitants of large cities would perhaps stress the importance of forests for leisure and recreation, people in mountainous areas might value them for protection and as an attraction to tourists, and farmers might refer to the income generated from forestry activities. Some people would stress the uniqueness and beauty of forests and the need to preserve them, and others would insist on economic benefits and employment opportunities which result from their use. Evolving attitudes and perceptions, changing opportunities and specific user groups determine the social importance of forests. To local communities they represent opportunities of many uses and values, whereas at the national level, commercial wood production and the development of a forest industry sector may be considered as important.

The contrast between forests as a means of production and as a particularly valued element of the physical environment has developed in societies in which culture and nature are often believed to be in opposition to each other.<sup>5</sup> The specificity and the historic dimensions of this thinking become visible, if one compares it with the meaning of forests and nature in societies with different cultures and spirituality. In some of them nature and forests are not considered primarily as resources that may be disposed of for social and economic purposes and can be used at the discretion of individual and collective decisions. They represent a reality with gods and spiritual powers, in which man has to find his place and which may be harmful and at the same time helpful to him. In the thinking of people in cultures with traditional land-use systems nature and man may form parts of distinct realities which leave space for the beings of the present generations and for the world of the ancestors. Forests may represent the space of wilderness which is the realm of the ancestors and which gives to living beings cultural orientation and identity.<sup>6</sup>

A wealth of knowledge, transmitted from generation to generation, has been accumulated indicating the meaning of trees and forests and the uses of particular species and products as well as the technologies which enable such uses. Experience has taught users how trees and forests should be managed in the interest of the community and how to develop practices that ensure their protection. Research on local knowledge of conservation practices shows its ingenuity, cultural

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<sup>5</sup> For the representation of forests in the evolution of European cultures and the changes in their perception during the Enlightenment see: R.P. HARRISON: Forests. The Shadow of Civilisation, Chicago and London 1992 (The University of Chicago Press). German Edition: Wälder. Ursprung und Spiegel der Kultur, München und Wien 1992, (Carl Hanser Verlag). The forest as a culturally formed element, protection and management as part of the culture of a society are discussed in: K. SEELAND: Der Wald als Kulturphänomen - von der Mythologie zum Wirtschaftsobjekt, "Geographica Helvetica" 48(1992)2: 61-66. As an example of a more recent text on spiritual aspects associated with trees see: J. BROSSE: Mythologie des arbres, Paris 1989 (Plon).

<sup>6</sup> Schefold examines relationships between nature and culture as related to the spirituality of different societies. He describes the meaning of wilderness and forests to a tribal group on the Siberut Island (Mentawai-Archipelago, Indonesia) as an example of societies with traditional land use systems. R. SCHEFOLD: Natur und Kultur im Weltbild indonesischer Stammesgesellschaften, in: W. BOEHM und M. LINDAUER (Hrsg.): Woher, Wozu, Wohin? Fragen nach dem menschlichen Leben, Stuttgart 1990 (E. Klett Verlag): 285-308.

uniqueness and social usefulness. Local or in a more specific sense indigenous knowledge is of particular importance in traditional societies because the local context is an universal frame in which knowledge matters. It is bound to local experiences, frequently of a forest environment, and takes the local world perhaps not as the only one existing, but as the most relevant of all.<sup>7</sup>

### **FORESTS AS LOCAL SURROUNDINGS**

In societies of a Western contemporary culture, there may be different opinions about what forests represent, but most people can agree on the difference between forested lands and lands without forests. Forests are perceived as a distinct element of the landscape with clearly demarcated borders and a defined range of uses. Their protection and the regulation of access are largely determined by considerations of economic utility. Forests are means of production for goods and services satisfying individual and collective needs, and their management can be optimized in relation to prevailing opportunities and requirements. Forests and forest lands are a property which the owners may, within certain limits, use freely. They may be cleared due to collective and individual necessities, and land may be planted with trees if this promises to be a useful undertaking.

To people in societies with traditional land management systems, to answer the question what forests are and where they begin and end may be difficult. They would wonder whether this is a meaningful distinction. Is the area covered with trees, in which their animals graze, a forest, a pasture, perhaps both or perhaps something quite different? Does it make sense to separate trees and fields if cultivation is done for a few years only, and forest vegetation will come back in order to be cleared again for subsequent food crops? Are forests and fields not part of the same space which is used at different times in different ways? After some reflection they may tell us it is more important to distinguish the space formed by the village and its adjacent permanently cultivated land from the surroundings that serve different needs and have a distinct spiritual significance. And they may point out that forests as local surroundings may only be used in accordance with certain customs and with respect and consideration.

The meaning of forests as local surroundings may thus reflect many different situations. Communities may actually live in forest environments which provide a livelihood and represent an element of their cultural identity. In agrarian and pastoral societies, forests are part of a continuum of complementary and often interchangeable uses. The use of local resources is largely based on rotational systems with alternating phases of agriculture and forest regrowth on the same patch of land or on combined agroforestry and silvopastoral practices.

Trees and forests supply a large range of products used for food, medicines and daily needs, for fodder and local handicrafts, and they contribute to maintain soil fertility for an increased agricultural output. Wood is an important, but by no means the only component providing energy

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<sup>7</sup> K. SEELAND: What is Indigenous Knowledge and Why does it matter today? Paper presented at the Seminar on Indigenous Knowledge on Forests. Max Mueller Bhavan, New Dehli, March 1995.

and material for local construction. The variety and importance of uses to local communities and in particular to the poor and disfavoured groups has for a long time been underestimated. By referring to forest products other than wood as secondary forest produce, they have been systematically undervalued and neglected. Studies, undertaken at the local or regional level show that the economic weight of the non-wood forest products is sizeable and that collection and processing provide considerable employment opportunities. However, management and tenurial regulations are in most cases still inappropriate to favour and sustain such uses.<sup>8</sup>

Within the various production systems, trees and different stages of forests are dynamic elements of a common and continuously changing resource's potential. It is this aspect which represents their usefulness to people in developing countries and which has influenced the social meaning of forests in our own history. A study on land use developments for 5'000 km<sup>2</sup> in the Black Forest (Germany) shows that the classified forest area increased from 1780 to 1985 from 32% to 53%, whereas the land surface for combined uses decreased from 30% in 1780 to 13% during the second half of the 19th century, and to nil beyond 1902.<sup>9</sup> If in this case the separation between forests, pasture and agricultural land has been shown to be complete, there are many other examples, especially in the Alps and the Mediterranean region, where combined uses continue to exist frequently in spite of efforts to reduce them.

The most widespread form of using forests as local surroundings is collective tenure of common property resources. It occurs in agricultural and pastoral societies in which forest and trees are important for the community to subsist and survive. Collective forest tenure does not mean an indiscriminate access to resources. It is based on elaborated tenurial arrangements carefully regulated by customs and rules. It provides different benefits to different groups of people, but even if restrictions for some groups are severe, they do not exclude any one completely from forest use. This is important in times of scarcity and natural disasters when trees and forests are one of the last resorts for subsistence to peasants and herders.<sup>10</sup>

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<sup>8</sup> J. FALCONER: The Major Significance of "Minor" Forest Products - The Local Use and Value of Forests in the West African Humid Forest Zone, "FAO, Community Forestry Note" Nr. 6, Rome 1990. For the importance of changes in land use, combined and complementary uses in agriculture, and of wood as a source of energy and local construction material during the middle ages and the early modern times in Europe see for instance: K. MANTEL: Wald und Forst in der Geschichte - Ein Lehr- und Handbuch, Alfeld-Hannover 1990 (M. und H. Schaper): p. 58f, 89f, 202f.

<sup>9</sup> U.E. SCHMIDT: Entwicklungen in der Bodennutzung im mittleren und südlichen Schwarzwald seit 1780, "Mitteilungen der Forstlichen Versuchs- und Forschungsanstalt Baden-Württemberg" Heft 146, Freiburg/Brsg. 1989.

<sup>10</sup> For the role of trees and forests in times of food scarcity, diminishing agricultural crops and lack of fodder in drought periods see: FAO: Forestry and Food Security, "Forestry Paper" Nr. 90, Rome 1989. The effects of declining common property resources on pauperisation of the rural population and in particular of disfavoured groups in a semiarid environment are described in: N.S. JODHA: Population Growth and the Decline of Common Property Resources in Rajasthan, India, "Population and Development Review" 11(1985)2: 247-264. N.S. JODHA: Rural Common Property Resources: A Growing Crisis, "International Institute for Environment and Development, Gatekeeper Series" Nr. 24, 1991.

Collective tenure systems of common property resources have found an increasing attention both from an economic and from an institutional and social point of view.<sup>11</sup> Within the political and economic context which they have developed, they offer a reasonable arrangement for resource management. A combination of restrictions and obligations protects trees and forests to varying degrees and allows for some form of continuing use. However, collective tenure is slow in adapting to change, and may lose its regulatory force and provoke exploitative uses, if confronted with new forms of resource appropriation. In developing countries the appropriation of land through a process of acquiring private ownership rights as part of agricultural expansion, and the claim of forests as a domain of the state are major reasons for the discrimination of local uses, for the disappearance of collective tenure and for the clearing of forests. Similar processes of expansion and land colonization have led to large scale deforestation in European and North American countries in the past.

### **FORESTS AS RESOURCES FOR INDUSTRIAL WOOD PRODUCTION**

During the last century a change in emphasis has taken place in the Western hemisphere from multiple forest uses in a local area to a single and economically important use, usually for timber production. In a first stage forests were exploited with little regard for their long-term timber production potential and for soil conservation and water regimes. But soon it became evident that the prospects of an expanding wood products industry required a lasting forest productivity, and this required investment in forestry and an adjustment of timber harvest scheduling.

In Europe this evolution was preceded by a long period in the 17th and 18th centuries when the sovereign and the nobility had claimed wood resources for operating local industries and long distance trade. They had established juridical control over certain forest lands, forest administrations controlling local uses, and supervision of management practices in communal and, to a lesser degree, private forests.<sup>12</sup> The growing influence of the state on production objectives and management practices led to controversies and resistance in particular on the side of large forest

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<sup>11</sup> For general references see: B. McCAY and J. ACHESON (eds.): The question of the Commons, Tucson 1987 (University of Arizona Press). The concept of common property and open access regimes, and the management effects which result from different tenurial systems are discussed in: D.W. BROMLEY and M.M. CERNEA: The Management of Common Property Natural Resources, "World Bank Discussion Paper" Nr. 57, Washington 1989. For prevailing tenurial systems and country policies on land tenure in African countries where French is spoken as lingua franca see: E. LE ROY: La réforme du droit de la terre dans certains pays d'Afrique francophone, "FAO Etude Législative" Nr. 44, Rome 1987. For a review of tenurial aspects including customary use rights and communal tenure in the context of forest policy development see: Ch. DU SAUSSAY: Statuts fonciers et politique forestière, "FAO Etude Législative" Nr. 41, Rome 1986.

<sup>12</sup> For France see: A. CORVOL: L'homme aux bois, Fayard 1987. Examples of similar processes in two regions in Germany in: J. ALLMANN: Der Wald in der frühen Neuzeit - eine mentalitäts- und sozialgeschichtliche Untersuchung am Beispiel des Pfälzer Raumes 1500-1800, Berlin 1989 (Duncker und Humblot). I. SCHÄFER: Ein Gespenst geht um. Politik mit der Holznot in Lippe 1750-1850 - Eine Regionalstudie zur Wald- und Technikgeschichte, Detmold 1992 (Naturwissenschaftlicher und Historischer Verein für das Land Lippe).

owners. It also created continuous tensions between the forest administration and the peasants and villagers being more concerned with local uses than with commercial wood production.<sup>13</sup>

The emphasis on the importance of forests for commercial production has had important consequences with regard to the role of communities in the management of resources. In several countries it has been a deliberate and forcefully implemented policy to restrict existing collective uses. Usufructuary rights were abolished in areas classified as state forest domain and collective tenurial arrangements were transformed into clearly defined categories of forest ownership. In some cases this has favored the constitution of communal forest ownership whereas in others it has increased the state forest domain. Part of the forests used in common have been distributed among the previous collective users and became private ownership. Very often a combination of tenures has developed. The present ownership pattern in European forests is to a large extent the result of this transformation process.

Market economies, the change from subsistence to commercial and highly productive agriculture and the introduction of industrial production, have changed the social relevance of forests. They were now considered as a "resource" with a specific meaning, a resource for the production of wood. Growing wood products market, based on long distance exchanges, made wood a major national economic option.<sup>14</sup> The concept of forestry as a sustainable timber production activity became the principal objective of forest conservation. In Europe and in parts of North America, where these conservation practices had been introduced, the sustainable production of timber has increased considerably due to an improved productivity of forest stands and large scale afforestation.

Forest policies as a national issue developed in Europe in this context. They were induced by an experience of timber shortages or an anticipated scarcity of future supply in economies that were

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<sup>13</sup> For Austria during the 19th century, in particular the regulation of ownership and usage rights, and the conflicts between public and private interests determining the adoption of the forest law of 1852 see: H. FEICHTER: Regelung von Eigentums- und Nutzungsrechten als Voraussetzung für die Entwicklung der österreichischen Forstwirtschaft in der Zeit von 1750 bis 1870, and H. FEICHTER: Öffentliche und private Interessen an der Waldbewirtschaftung im Zusammenhang mit der Entstehung des österreichischen Reichsforstgesetzes von 1852, both in "Forstwissenschaftliche Beiträge der Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. 11, 1992 and Nr. ... (forthcoming).

<sup>14</sup> For the development of pre-industrial and industrial commercial wood utilization, timber prices, and long distance trade of wood see: K. MANTEL: Wald und Forst in der Geschichte, p. 209f, 246f, 277f, op. cit. The importance of wood as a technological raw material and energy source, and strategies to overcome wood shortages in the 17th and 18th centuries are discussed in: J. RADKAU and I. SCHÄFER: Holz - Ein Naturstoff in der Technikgeschichte, Reinbek bei Hamburg 1987 (Deutsches Museum/Rowohlt). R.P. SIEFERLE: Der unterirdische Wald - Energiekrise und Industrielle Revolution, München 1982 (C.H. Beck). The expansion of the forest sector was correlated with economic growth and in return contributed to economic and social development. Economic growth and sector development created favourable conditions for maintaining forests and for sustainable forest management. M. PALO: The forest-Based Development Theory Revisited with a Case Study of Finland and Prospects for Developing Countries, in: Deforestation or Development in the Third World?, Volume II, Helsinki 1988 (The Finnish Forest Research Institute).

still depending in many ways on locally available raw material. At the same time the improving economic prospects, demonstrated by new wood products demands and technologies, as well as by rising timber prices, made it attractive to governments and land owners, to promote timber production in expanding market economies. Policy programs, determined by the legislatures and governments, set the framework for development of forestry and the wood products industry. The principal actors in elaborating and implementing the programs were governmental forest services and major user groups such as forest owners and wood products industry associations.

Policy objectives focused on the protection of forest lands, the regulation of harvesting practices, the establishment of a viable sector economy organized by forest enterprises, and the promotion of large-scale afforestation programs.<sup>15</sup> Yield regulation, silvicultural measures such as thinning and tree improvement, planting of high-yielding tree species and site melioration became a progressive and acknowledged means to increase wood production. To some extent policy targets also included protection, in particular in mountainous areas. National programs were on the whole fairly simple, but for that reason effective. They prohibited forest clearings, restricted clear cutting, provided technical advice and, to a lesser degree, financial support to forest owners.

A somewhat comparable evolution took place in North America, perhaps with a stronger emphasis on large-scale industrial development. Forest resources were to finance new infrastructures and settlements. Capital intensive, high-yield forestry regimes developed in some regions. Certain forest areas were excluded from commercial wood production mainly as parks. By 1900 the United States had adopted conservation programs for federal forest lands that combined sustainable timber production with the preservation of certain areas as parks and wilderness. The policy framework that had developed around the turn of century and continued to evolve emphasized protection of forests from wildfire and management based on scientific principles. Its implementation implied a strong public sector role in forestry research; the protection of forests from wildfire and disease epidemics regardless of ownership; the productive management of federal and state forests; the promotion of improved resource utilization on private forest lands through technical and financial assistance and tax incentives; the adoption and enforcement of state and federal wildlife conservation laws; and the acquisition of public lands for stream-flow protection. Policy implementation was largely based on cooperative efforts among federal, state and private sector interests.<sup>16</sup>

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<sup>15</sup> Examples of this evolution in Switzerland, one for communal forest management (Canton Nidwalden) and one for state afforestation programmes on public and private lands (Canton Fribourg) are given in: H. KASPER: Der Einfluss der eidgenössischen Forstpolitik auf die forstliche Entwicklung im Kanton Nidwalden in der Zeit von 1876 bis 1980. "Forstwissenschaftliche Beiträge der Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. 7, 1989. U. MÜLLER: Schutzwaldaufforstungen des Staates Freiburg im Senseoberland, Kantonsforstamt Freiburg 1990.

<sup>16</sup> An excellent overview of the development of the conservation movement during this century leading to sustainable forest production, of the changes in land use practices which resulted from new policy and legislation, and of the achievements in improving forest and range conditions as result of a more

In Canada forest policy development of the federal government and of the provinces has followed, probably with some delay, a pattern similar to the USA. Due to the large proportion of public forest land owned by the provinces, policy and resource management are to a large extent concerned with joint land utilization and management, involving the public sector as land owner and the private sector's timber production and wood processing. The provinces have developed a range of permits, licenses and forest leases and modified the applicable regulations and contractual arrangements in order to improve forestry practices and to enforce nature and environmental protection.<sup>17</sup>

In the developing countries it has been more difficult to introduce sustainable wood production practices. Under the conditions of tropical and subtropical forest zones only a small proportion of the exploited natural forests are utilized in a sustainable manner so far. Silvicultural efforts have largely concentrated on plantation forestry which is replacing the natural forest stands in some areas. The priority given to industrial forest development has in many cases detracted governmental action and policy options from local uses, that are important to people.<sup>18</sup> This widened the gap between the reality of rural populations strongly depending on trees and forests and national objectives which too often have only induced an exploitative extraction process.

Rotational and combined land uses which are still dominant in many regions of the world have been officially acknowledged only recently and "reinvented" under such terms as agroforestry,

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intensive land management is presented in: D.C. LE MASTER, J.T. O'LEARY and A. SAMPLE: Forest Service Response to Changing Public Values, Policies and Legislation during the Twentieth Century in the United States, "Forstwissenschaftliche Beiträge der Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. ... (forthcoming).

<sup>17</sup> A review of timber allocation and forest management practices on public forest land and the characteristics of different tenurial arrangements in the provinces is presented in: D. HALEY and M.K. LUCKERT: Forest Tenures in Canada - A Framework for Policy Analysis, "Forestry Canada", 1990. For the Province of British Columbia which under the term tree farm licence has developed a joint long term management system of particular interest see: G. McG. SLOAN: The Forest Resources of British Columbia, 2 Vols., Victoria B.C. 1957. W. McKILLOP and W.I. MEAD (eds.): Timber Policy Issues in British Columbia, Vancouver 1974 (University of British Columbia Press). Forest policy developments in the Province of Ontario in: MINISTRY OF NATURAL RESOURCES: Developing a New Timber Production Policy, Ontario 1993. J.-L. WALLACE: Evolution of Timber Revenue Policies on Crown Land in the Province of Ontario, "Forstwissenschaftliche Beiträge der Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. ... (forthcoming).

<sup>18</sup> An analysis of the early stages of national forest policies in developing countries and of the increasing influence of international development programmes on policy objectives are given in: H. STEINLIN and J. PRETZSCH: Der tropische Feuchtwald in der internationalen Forstpolitik, "Holzzentralblatt" Nr.138, 1984. A case study of the impact of a wood export and processing policy in the Ivory Coast gives: J. PRETZSCH: Die Entwicklungsbeiträge von Holzexploitation und Holzindustrie in Ländern der feuchten Tropen dargestellt am Beispiel der Elfenbeinküste, "Schriftenreihe des Instituts für Landespflege der Universität Freiburg im Breisgau" Nr. 11, 1987. A study of exploitation effects on the depletion of forest resources in the Philippines in: A.V. REVILLA: Effective Forest Conservation Requires more than Good Laws - The Case of the Philippines, "Forstwissenschaftliche Beiträge der Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. 10, 1990.

rural forestry or forestry for community development. But such concepts still determine only very few policies at national and regional levels. It will demand more consistent efforts of governments to design and implement forest and rural development programs which contribute to an improvement of the living conditions of local communities.<sup>19</sup>

A process of state appropriation extending to ownership, usage rights and management control has taken place in many countries. Ownership of forest lands for which no land title could be produced, was claimed to belong formally to the state. The application of this principle, already introduced by the colonial powers and subsequently retained by many forest and land tenure legislations of the independent states, created a new situation.<sup>20</sup> The governments saw an opportunity to obtain fiscal revenues from commercial logging operations, to promote log and wood product exports in order to improve trade balances, and to develop a modern forestry and forest industry sector. Since forest administrations were usually not in a position to organize large-scale forest resource utilization, governments relied on the private, and in many cases expatriate sector.<sup>21</sup> They usually granted different types of permits and contracts for timber extraction and forest management.

In countries, in which the principle of collective local ownership on forest lands has been retained or in which the forest area has been recognized to be under communal tenure, state intervention and more subtle forms of appropriation operate. This refers, for instance, to regulations which invest the right to contract with industrial operators in the state acting in trust for local owners and to sharing of timber revenues between the communities and the government. It also refers to the strict management rules which usually limit the decisional powers of the land owners.

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<sup>19</sup> An analysis of the role of agroforestry and community forestry in governmental policies and changes of administrative behavior gives: M.R. DOVE: The Theory of Social Forestry Intervention - The State of the Art in Asia, "Agroforestry Systems", 1995.

<sup>20</sup> As an example of the institutional and social aspects of property rights and the conflicts between historically prevailing customary tenure and the evolution of state forestry based on enforced forest reservation and demarcation policies see: M. CHAKRAVARTY KAUL: Forest Rights and Forest Laws in the Indian Himalayas during the Second Half of the 19th Century, "Forstwissenschaftliche Beiträge der Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. ... (forthcoming). The influence of the forestry regulations 1935 on state appropriation of utilization rights in West and Central African countries where French is spoken as lingua franca and their continuation in national forest legislation is discussed in: F. SCHMITHÜSEN: Vom kolonialen Forstgesetz zum nationalstaatlichen Wirtschaftsrecht. Die Entwicklung der Forstgesetzgebung in frankophonen Westafrika, "Allgemeine Forst- und Jagdzeitung" 147(1976)6/7: 130-142.

<sup>21</sup> Developments in the African region concerning different categories of forest domains, customary rights and local uses, state and communal land ownership, and resources allocation methods are reviewed in: F. SCHMITHÜSEN: Forest Legislation in Selected African Countries, "FAO Forestry Paper" Nr. 65, Rome, 1986. For the regulatory framework of state-granted industrial forest utilisation agreements in the Asia Pacific region see: F.v. SCHLABRENDORFF: The Legal Structure of Transnational Forest-Based Investments in Developing Countries, "Forstwissenschaftliche Beiträge der Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. 5, 1987.

The concentration of benefits from forestry at the national level and the centralization of land-use decisions have important consequences. The groups using forest surroundings traditionally tend to feel deprived of what they consider as their own resource. A process of the transfer of resources from the poor to the rich and from rural to urban areas is initiated. The breakdown of customary rules protecting forests as part of the local space and the failure of modern forest laws that were adopted to replace them, may be explained in this manner. The lack of local opportunities to use forests, combined with often short term industrial exploitation, contributed considerably to deforestation, since this appears to many people as the only possible alternative to draw some benefits from the available lands.<sup>22</sup>

### **THE PERCEPTION OF FORESTS AS ENVIRONMENT AND WILDERNESS**

Forests have still another meaning in society. They are a representation of nature which is supposed to be largely free from apparent human disturbance, some free of it altogether. Forests mean unfettered natural processes and wilderness, something very different from surrounding intensive urban and rural land-use patterns. The efforts to limit forest uses, to set aside areas without apparent human disturbance, and to preserve biodiversity in managed forests are the result of a growing concern to maintain forests as a representation of nature and wilderness.

During the last three decennia, a wider perspective on the value of forests has emerged with important challenges to forestry and forest policy. Three causes have been at work. The first came from the rapidly increasing demand in industrialized countries for recreational activities in open landscapes and forests. A second cause, which now can be characterized as having world-wide dimensions, developed from the environmental and nature-protection movement. A third cause superimposed on the other two, derived from a growing number of people identifying forests as wilderness providing a place for spiritual freedom, solitude, and contemplation.<sup>23</sup>

Local knowledge of the meaning of forests, of prevailing socio-cultural values and uses, and of management performance becomes more important for the efficiency of participatory resource management policies. In increasingly urban and periurban societies, knowledge and personal

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<sup>22</sup> Deforestation in the tropics varies widely in space and time according to variations in socio-economic and natural factors. An analysis focussing on land tenure, distribution of benefits and institutional weaknesses is given in: M. PALO: Deforestation Perspectives for the Tropics: A Provisional Theory with Pilot Applications, in: DYKSTRA et al. (eds.): The global Forest Sector: An Analytical Perspective, London 1987 (John Wiley). For country studies on the adverse effects of forestry policy but also of policies promoting agriculture and livestock development on conserving forest resources see: R. REPETTO and M. GILLIS (eds.): Public Policies and the Misuse of Forest Resources, Cambridge University Press, 1988 (World Resources Institute).

<sup>23</sup> For general aspects of nature and wilderness as cultural representation see: M. OECHSLE: Der ökologische Naturalismus - Zum Verhältnis von Natur und Gesellschaft im ökologischen Diskurs, "Campus Forschung" Vol. 52, Frankfurt/Main 1988. M. SILVAR (Hrsg.): Kultur und Natur - Berner kulturgeschichtliche Vorlesungen 1990-1991, Bern 1992 (Peter Lang Verlag). B. GRÜNIG: Natur, Baum, Mensch - Zur Entwicklung des Verhältnisses des Menschen zur Natur am Beispiel der Bäume, Kassel 1989 (Zentraldruckerei der Gesamthochschule Kassel).

experiences on forests as influenced by evolving attitudes and perceptions are in a state of change. Available research indicates that knowledge on traditional uses is still present, but fading and with little relevance to the context in which actual problems of protection and management are seen and assessed. Some findings suggest that forests represent a space for leisure and personal reflection.<sup>24</sup> Visible expression of changing attitudes and a need for more knowledge is on the increase. Educational activities in forests try to introduce people to the abundance of nature and to make their surroundings and history more meaningful to them. On the other hand, there are indications that the understanding of forests as a source of raw material and of forestry as a productive land-use activity is diminishing and that these aspects are increasingly considered as expert issues left to the small group of specialists competent in forest management. The indications confirm the need to place timber production more clearly into the context of global sustainability and to explain to the public its social usefulness in utilizing renewable resources.

New elements that appear are an evolving perception of citizens on the urgency of conservation needs and to maintain future options. There is an increasing involvement of interest groups articulating conservation demands more forcefully, and the insistence of the public to see more effective policy measures for the preservation of nature and landscapes. The environmental movement has also made it clear that espousing conservation as a principle does not necessarily prevent degradation and waste of resources. It targets for specific measures and regulations based on a more precise understanding of how resources can be used in a sustainable manner and which elements of our environment must be protected and preserved. Value changes from a largely resources utilization oriented to an environmental perspective have been particularly pronounced and visible with regard to future management options on federal forest land in the United States. This process led to serious confrontations between different user groups followed by policy changes and new legislation as well as by an increasing influence of local groups on management decisions on forest conservation and preservation.<sup>25</sup>

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<sup>24</sup> Perception of and local knowledge on trees and forests in urban and periurban areas have found considerable attention among several French researchers: B. KALAORA: Le musée vert ou le tourisme en forêt - Naissance et développement d'un loisir urbain, le cas de la forêt de Fontainebleau, 1981 (Editions Anthropos). L'arbre en ville, "Revue Forestière Française" (Numéro special), 1989. La forêt, les savoirs et le citoyen - Regards croisés sur les acteurs, les pratiques et les représentations, Communications présentées au colloque européen organisé à Montceau-les Mines et Le Creusot en novembre 1993 par l'Agence Nationale de la Création Rurale, ANCR, 1995.

<sup>25</sup> For the evolution of the political and legislative processes of adaptation see: D.C. LE MASTER, J.T. O'LEARY and V.A. SAMPLE: Forest service response to changing Public Values, Policies and Legislation during the Twentieth Century in the United States, op. cit.. W.C. SIEGEL and Ch.E. MARTUS: Local Government Forest Regulatory Ordinances in the United States, "Forstwissenschaftliche Beiträge, Professur Forstpolitik und Forstökonomie, ETH Zürich" Nr. ... (forthcoming). For the implications on management practices with greater emphasis given to non-commodity uses such as recreation and wildlife: L.A. CRAMER, J.J. KENNEDY, R.S. KRANNICH and T.M. QUIGLEY: Changing Forest Service Values and their Implications for Land Management Decisions Affecting Resource-Dependent Communities, "Rural Sociology", 58(1993)3: 475-491.

These developments, representing a fundamental current in many societies, have put forests in a much broader political context. The evolution of a network of policy programs addressing conservation and management corresponds to evolving perceptions and new political demands. In addition to sustainable wood production, forest policy considers the objectives of infrastructural protection, recreational use, nature and landscape protection and spiritual and aesthetic values more systematically. These objectives are increasingly superimposed by those of cross-sectoral policies, addressing nature and landscape protection, environmental protection and land-use planning. In the beginning, they concentrated on general principles of resources utilization, but over time they also become concerned with the regulation of specific forest uses. As a result, forestry matters are now the subject of several programs which for historical reasons have developed in a different manner and which, to some extent, compete with each other.<sup>26</sup> Sectoral forest policies tend to integrate more protective aspects, while cross-sectoral policy objectives provide benchmarks for forest production.

The process of adapting forestry practices to a broader range of social demands and of developing management systems, adjusted to varying local conditions, has not taken place without difficulties. It still results in divergent positions. The identification of forest development with the production of industrial wood had made it difficult, for instance, to integrate the demands of nature conservation groups representing an evolving public perception. This may explain the lack of flexibility in adjusting to a changing political context and the confrontations between representatives of the forest sector and those of the environmental movements.

### **FORESTS AS A GLOBAL ISSUE**

The social meaning of forests reflects many values which go beyond the specific uses that prevail at a time. In a global perspective they are perceived as an important element of the physical and social space in which societies develop. Their potentialities leave options to present and future generations, some of which we may already be aware of and some of which we cannot yet foresee. The social meaning of forests reflects the specific realities of different cultures in their prevailing stage of evolution. At the same time the political discussion on their role is influenced by a perception of forests as a representation of nature and environment that is, to a large extent, an expression of the internationally distributed concepts of Western culture.

The session of the UN Commission on Sustainable Development held in April 1995, was the first occasion at which forests and forestry have been the exclusive subject of a world-wide political debate. It followed the Conference on Environment and Development in Rio in 1992 which discussed forestry matters as part of a larger context. Both events are part of a process reflecting

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<sup>26</sup> The aspect of forests being addressed by several policy programmes and laws is emphasised in: M.R. de MONTALEMBERT and F. SCHMITHÜSEN: Legal and Institutional Aspects of Sustainable Forest Management, in: "FAO Forestry Paper" Nr. 122: 153-171, Rome 1994. For the linkages between conservation and forest policies see: F. SCHMITHÜSEN: Evolution of Conservation Policies and their Impact on Forest Policy Development: The example of Switzerland, "Commonwealth Forestry Review" 74(1995)1.

divergent positions and a considerable amount of disagreement with regard to what forests mean to the interest groups involved, their role at present and in the future, and their protection and management in different societies and in different parts of the world.<sup>27</sup>

The controversial nature of the international discussion was well demonstrated during the preparatory process for Rio. The proposal to provide for an international framework in order to protect tropical forests was seriously contested by countries from that region. They insisted on their sovereignty to use forests according to their own needs and challenged the attitudes of the industrialized countries with regard to environmental protection and sustainable development. There was controversy whether efforts to support conservation were parts of environmental and biodiversity protection policies or whether forests were primarily considered to be economic resources which, if appropriately managed, would yield other desirable benefits.

The struggle whether forestry issues should be dealt with in a convention on environment, on biodiversity or in a separate agreement, reflected global aspirations that were in conflict with the importance of forests as national resources and as local surroundings. The lacking consensus on a balance between global, national and local demands continues to be a major obstacle for advancement of international cooperation in forest policy.

The outcome of the Rio Conference is an indication for the lack of a common ground in perceiving forestry problems internationally and for the inability to agree on workable solutions.<sup>28</sup> The statement on forests, as adopted by the conference, is to be authoritative, but by no means legally binding. It provides principles for a consensus and presents a global view on uses and values, many of which are contradicting. It refers to all types of forests without recognizing geographic and socio-economic specificities. Forests are of importance to the international community, but states claim their sovereign right to exploit them. Forestry issues are put in a holistic vision, but the focus of the timidly advanced recommendations is resource use.

The international community is not, or at least not yet in a position to agree on workable measures, to coordinate the many multilateral and bilateral initiatives, and to ensure the implementation of a

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<sup>27</sup> For general aspects of this process such as principal events, actors and main issues involved see: Ch. BARTHOD: La Conférence des Nations Unies sur l'Environnement et le Développement de la Forêt, "Revue forestière française", XLV(1993)1: 7-25. P. GLÜCK: Entstehung eines internationalen Waldregimes, "Centralblatt für das Gesamte Forstwesen", (1994)2: 75-92. F. SCHMITHÜSEN: Forest Policy Development in an International Perspective, "Nederlands Bosbouw Tijdschrift" 65(1993)3: 150-159.

<sup>28</sup> There is a large output of international reports and declarations. Relevant documents which allow to assess the evolution of the international debate on forests and the efforts for coordinated measures of protection are for instance: UNCED: Conservation and Development of Forests- Report of the Secretary-General of the Conference, (1991); Agenda 21, Chapter 11 - Combating Deforestation, (1992); Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests, (1992). HELSINKI CONFERENCE: Conference Resolutions, (1993). FAO MINISTERIAL MEETING: Rome Statement on Forestry (1995). COMMISSION ON SUSTAINABLE DEVELOPMENT: Review of Sectoral Clusters/ Land, Desertification, Forests and Biodiversity, (1995)

common strategy which is commensurate with the global character of the social and political demands towards forests. An interesting development in this context are the efforts of the European Parliament, the Council of Europe and of national parliaments to define political strategies for global and regional forest protection and development.<sup>29</sup>

The disagreement on many forestry issues continues to exist in spite of a growing public perception to see the forests of the world as a common heritage. The large-scale deforestation in the tropics implies social and political problems for the countries in which they occur, and is at the same time perceived as an example of the negative effect of human intervention in forests. However, one should also be aware of the fact that the protection of forest lands, sustainability of forest uses and preservation of biodiversity are challenges of equal importance in the industrialized countries. The conflicts which arise place forests in the context of fundamental controversies on social justice, self-determination and sovereignty, democracy and local participation as well as of the unbalanced economic development between different parts of the world.

### **AN EXPANDING AGENDA IN FOREST POLICY RESEARCH**

Forest policy as a subject of academic teaching and research has developed over the last 100 years in a specific socio-economic context in which forests were principally valued as a resource for commercial timber production and the development of the wood products sector. Policy research emphasized the evaluation of production objectives, the design of governmental regulations as instruments to control forest owners' activities and the role of public forest administrations. In countries like Switzerland with large mountainous areas, research also addressed, but probably to a lesser degree, the protective role of forests and their importance as an infrastructural element of the rural space.

The almost exclusive focus on national policy development, regulating forest protection and utilization does not correspond any more to the reality of today. Social and political processes at the level of local communities reflecting different interests in forests require more attention in research analysis. National programs can only be successfully implemented, if they are meaningful to and accepted by local groups and communities. At present, forests have become of world-wide public concern and subject to political efforts in order to develop consistent cooperation for their protection. Policy research has to address such developments and their impacts at the national and local levels.

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<sup>29</sup> COMMUNAUTES EUROPEENNES - PARLEMENT EUROPEEN: L'Europe et la forêt, Tome 1 et 2, Luxembourg 1994 (Office des publications officielles des Communautés Européennes). COUNCIL OF EUROPE: A Political Plan for the Preservation of the World's Tropical Forests and their Biodiversity, Strasbourg, 1989. ENQUETE COMMISSION "PROTECTING THE EARTH'S ATMOSPHERE" OF THE GERMAN BUNDESTAG (ed.): Protecting our Green Earth - How to Manage Global Warming through Environmentally Sound Farming and Preservation of the World's Forests. Third Report submitted by the Enquete Commission, Bonn 1995 (Economica Verlag).

It is necessary to extend the research agenda in order to gain a more fundamental understanding of the political relevance of forests as related to social evolutions and to specific socio-cultural values. The understanding of this broader context is indispensable in order to compare different situations, to discuss measures for the conservation of forests, and to evaluate experiences in forest policy developments. Research has to examine the changing role of forests for their respective societies, the variations of the political context and the common denominators which determine conditions for their conservation. Many of the issues involved have been of importance during historical evolution; some of them are new or appear at least in a new perspective.

A subject of particular interest is research on local knowledge on forests which represents the specific situation of a particular culture. So far its focus has been on situations in the developing world, but there exists an increasing awareness that research on local knowledge on forests is important in all countries. The advancement of knowledge, induced by changes in attitudes and perceptions, may help to adjust the prevailing use patterns in a social evolution of changing potentials of resources. In many cases local knowledge and experiences are not considered, but opposed to national resource concepts and to governmental management regulations. The results are obvious: local knowledge and social obligations are bypassed, and the management schemes introduced from outside remain inapplicable and of little significance to the local setting.

Policy research on forests has come to critical juncture. If it is to remain meaningful in a changing social reality, it has to embrace the full perspective of forests as an essential, many faceted component of man's environment, as well as of forestry as an economic and production-oriented land use. It is this twofold and ambivalent relationship that research has to consider by analyzing individual and collective forest uses, attitudes and perceptions with regard to various resource options and contractual forest management arrangements involving different sections of the community.

## **CONCLUSIONS**

The changing perceptions on what forests represent in society and their importance in different cultures are the result of certain physical and material, socio-cultural and spiritual considerations. The relevant physical and material considerations are the existence and potentiality of forests as a critical component of man's environment, the variety of plant and animal communities and the capacity of regeneration and self regulation. The pertinent socio-cultural considerations are present and anticipated human needs and values, prevailing and potential uses as related to the development of technology and life styles, entitlements to the access of resources and the social regulations on sustainable management. Spiritual considerations as apparent in myths, religion and personal notions, show the place of trees and forests in man's vision of his world and of himself.

Forests are a space which societies develop and interpret as local surroundings and cultural identification, as resources for commercial and industrial development and as a representation of

nature and environment. What forests mean in a particular situation varies with local knowledge, but also with the perception of people in a larger and increasingly world-wide context. In such a perspective it is questionable whether one should continue to perceive forests as rural and urban in societies in which space forms an entity and represents distinct but complementary social, economic and spiritual potentialities.

The political relevance of forests and the performance of a society in developing sustainable-use patterns are evolutionary processes. The knowledge of such processes reveals the reasons for protection and management, but also the causes for the disappearance of forest vegetation as well as for the creation of new forests. Historical developments show changes in the importance of forests in different societies, varying perceptions of forests as cultural phenomena and evolving social attitudes in dealing with perceived problems and opportunities. From a political perspective, fundamental issues which have been important during the course of time and which are relevant today are appropriation patterns, tenurial systems and changes in land use. Institutional solutions have been established in order to find a socially acceptable balance between conflicting private and collective demands, between local and national resource's appropriation, and between benefits accruing to different user groups and their responsibility in protecting forests.

If general developments have led from local to national use regulations, many considerations appear now in favor of reconsidering the need for local participation in political decisions and for joint management systems. This is of particular relevance in the context of international efforts to deal with forests globally. Whatever the envisaged measures in order to maintain forests would be, they have to be performed as national policies. This again can only happen if they are consistent with local knowledge and experience, and if they are supported by people to whom the forests are meaningful and matter.

Social and political issues in a perspective of historical developments have played a more prominent role in the beginning of forestry sciences in the 19th century, but have been considered to be of less importance during 20th century. There is a need to reinforce again the cultural and socio-economic aspects of forests and forestry in both teaching and research.