

NATIONAL FOREST POLICY REVIEW



PAKISTAN

by

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Forest resources and the forestry sector

Pakistan covers an area of 87.98 million ha; this includes 4.57 million ha of forests, constituting 5.2 percent of the total land area (Table 1). In 1998, the population was estimated to be 130.6 million with an annual growth rate of 2.6 percent. The population density is 164 persons/km² and 33 percent of the population live in urban areas. The GNP per capita is US\$450 and the annual GDP growth rate is 3.6 percent.

Table 1. Forest area as percentage of the total area in Pakistan

Province	Total area ('000 ha)	Forest area ('000 ha)	Percentage
NWFP	10 170	1 410	13.9
Azad Jammu Kashmir (AJK)	7 040	770	11.0
Balochistan	34 720	720	2.1
Sindh	14 090	680	4.8
Punjab	20 630	630	3.1
Northern Areas	1 330	360	27.0
Total/average	87 980	4 570	5.2

Pakistan is a country with low forest cover; there are only 0.03 ha of forest per capita compared to the world average of one ha. With the population growing at 2.6 percent annually, the forest area per capita is declining. The area of public forests cannot be expanded and trees grown on private land contribute substantially to the nation's wood production; this will increase in the future. During 2000/01, Pakistan imported pulp and paper products worth Rs.7 646 million and spent Rs.915 million on wood and timber imports. Pakistan annually exports sports and furniture goods worth Rs.2 to 3 billion.

The forestry sector contributes only 0.3 percent to the GNP. This excludes the indirect benefits that forests provide. Annual wood production is 3.5 million m³, which satisfies the domestic demand for industrial wood. Forest and related small industries provide employment for more than 500 000 people. Forests and rangelands provide forage to 90 million head of livestock. Forests play a vital role in protecting the watersheds of Tarbela and Mangla reservoirs, which are very important for hydropower generation and for supplying water to extensive irrigation networks in the plains of Punjab and Sindh provinces. Annual damage resulting from floods, soil erosion and siltation of reservoirs is estimated at Rs2.3 billion.

Provincial forest departments (PFDs) are responsible for planning, execution and implementation of forest, watershed and range improvement programs. However, policy formulation is the responsibility of the federal government. Currently, the forestry sector is facing many challenges: massive degradation of watersheds, deforestation, overuse of rangelands, biodiversity and loss of natural habitats, desertification, prolonged droughts, pollution, the heavy dependence of the rural population on biomass for energy, complex land tenure systems, weak forestry institutions, ineffective enforcement of law and lack of inter-sectoral coordination.

The National Conservation Strategy (NCS) reports that 7 000 to 9 000 ha are deforested *per annum*, which corresponds to a rate of forest cover decline of 0.2 percent. A forest resource inventory (1995) for the North West Frontier Province (NWFP) estimated that the existing forests will disappear within 20 to 25 years if the present demands for fuelwood and timber continue and no substitutes for fuelwood are used.

Only 27.6 percent of the forest area is managed as production or commercial forests by the PFDs. The remaining 72.4 percent are classified as protection forest and as such are not suitable for commercial exploitation (Table 2). Coniferous forests located in the higher elevations cover 1.93 million ha and are at various stages of depletion; tree density has been reduced significantly because of inadequate protection and the complex system of land tenure. Natural regeneration in coniferous forests is lacking because of heavy human and livestock pressure.

Table 2. Production and protection forest in Pakistan

Forest type	Production forest ('000 ha)	Protection forest ('000 ha)	Total ('000 ha)	Percentage
Coniferous	867	1 092	1 959	42.8
Scrub	158	1 568	1 726	37.6
Riverine	158	138	296	6.5
Mangrove	-	347	347	7.6
Irrig. plantations	83	151	234	5.1
Linear plantations	-	17	17	0.4
Total	1 266	3 313	4 579	100.0
Area %	27.6	72.4		

According to the Forestry Sector Master Plan (FSMP 1992), fuelwood, dung and agricultural residues are the main cooking and heating fuels used by 90 percent of the rural and 60 percent of the urban households. About 32 percent of the total energy requirements in the country are met through biomass fuels. According to the Household Energy Strategy Survey (HESS), roundwood consumption was 24.4 million m³ in Punjab, Sindh, NWFP and Balochistan in 1993. The FSMP estimated that wood consumption would increase from 29.5 million m³ in 1993 to 52.6 million m³ in 2018.

Natural forests in the mountainous areas meet only 10 percent of public fuelwood requirements and 90 percent of these requirements are met from trees outside forests. Every year, PFDs organize national tree planting campaigns during the monsoon and spring seasons to enhance tree cover on lands outside forests. However, the survival rate of these plantings since 1997 has declined drastically due to prolonged droughts.

Current and emerging issues, trends and critical problems

Current issues, trends and critical problems

Multi-stakeholder approach

There is a general concern over the depletion of Pakistan's forests. The conservation of biodiversity and representative ecosystems requires a participatory approach involving all stakeholders. While a broad national commitment to the sustainable development of natural resources exists, no appropriate instruments and institutional mechanisms are in place to ensure the sustainability of wood products and environmental services.

Redefinition of rights, roles and responsibilities

Generally, it is being recognized that effective sustainable forest management (SFM) requires a redefinition of local rights, roles and responsibilities of the various stakeholders and clear land tenure arrangements. Forest ownership needs to be considered in terms of benefits to individuals, communities and the nation as a whole.

Land tenure systems in Pakistan are highly complex especially in the mountains where most natural forests are located. Many tribal communities have inhabited these areas for centuries, but tenure rights are not well defined and documented in government records. In privately owned *guzara* forests, the owners often have to contend with the needs of untitled holders or tenants. Uncertain property rights discourage tenants or landless and nomadic grazing communities to protect and conserve forest and land resources. Many forest areas managed as common property have become openly accessible. In Dir, Swat and Chitral, former princedoms, which merged with the NWFP in 1970, forest concessionaires (a term still undefined in the Forest Act) demanded a share of the sale proceeds (royalty) from natural forests. This demand was accepted by the government and a royalty of 60 percent is now paid to the forest concessionaires based on complex tribal traditions.

Competing forest uses

Agricultural expansion, mining, quarrying, tourism development, infrastructure and communication, road construction and the increase in settlements have all contributed to deforestation and forest degradation. Numerous unsustainable activities have impacted adversely on protective, productive and environmental stability functions of forests.

Law enforcement

Law enforcement for forest protection is weak and penalties devised by various legal instruments such as the Pakistan Forest Act (1927), the Hazara Forest Act (1936), provincial wildlife ordinances and related acts (Appendix 1) are ineffective. PFDs have been unable to cope with forest encroachment, theft and illegal logging. These infractions are transboundary in nature and not covered effectively by the existing laws.

Policy formulation

The policy formulation process both at the federal and the provincial level is very inappropriate and there is a lack of multi-stakeholder involvement in monitoring and evaluating policy implementation.

Trees outside forests

Trees outside forests constitute an important resource and make a significant contribution to the wood and biomass energy needs of the country. No inventory has so far been conducted to assess tree stocks outside forests and their potential as future biomass resources and carbon sinks.

Preservation of representative ecosystems

Although there is some awareness on the need to protect representative ecosystems as an invaluable cultural heritage, relict ecosystems and their biodiversity are on the verge of extinction. Protecting and regenerating these forests are only possible if the subsistence needs of communities are met and substitutes for fuelwood and fodder can be identified. The juniper, Chilghoza and blue pine forests of Balochistan as well as the mixed spruce forests in the Nalter Valley need to be protected through special legislation and the active participation of local communities.

Lack of awareness and national commitment

Public awareness related to forests and the environment, including upstream and downstream communities is very low. It needs to be enhanced in tandem with political commitment for sustainable resource management.

Institutional status quo

Institutions related to forests and biodiversity conservation have hardly changed since their establishment. Institutional reforms of provincial forestry and wildlife departments; the Federal Forestry Wing, the Pakistan Forest Institute (PFI), the Zoological Survey Department (ZSD) and the National Council for Conservation of Wildlife (NCCW) are crucial to meet emerging challenges.

Public-private partnerships

Public-private partnerships are non-existent and need to be fostered for the better management of natural resources.

Criteria and indicators for sustainable forest management

Except for a recent Provincial Forest Resource Inventory (PFRI) by the German Agency for Technical Cooperation (GTZ) in the Siran Valley forests in the NWFP, no attempt has been made to assess the forest, watershed and rangeland conditions. Criteria and indicators for SFM of

different ecosystems, mountain forests, irrigated plantations, riverine forests and coastal mangrove ecosystems do not exist.

Environmental emergencies

Preparedness for natural disasters at the national and provincial levels does not exist. Many environmental problems (e.g. water pollution, forest fires) are transboundary in nature and need the collaboration of stakeholders at local, national and international levels.

Integration of sectoral policies

Past forest policies have ignored linkages with other sectors. There is a need to integrate sectoral policies to minimize competing and conflicting resource demands and uses.

Implication of international conventions and other initiatives on forest policy

Although Pakistan is a signatory to a number of international conventions related to biodiversity conservation, the implications of these conventions and responsibilities are unknown to the public. Of principal relevance to wetlands conservation is the Ramsar Convention, to which Pakistan became a party in 1978. Under this convention, Pakistan is required to promote the wise use of wetlands and waterfowl habitats and take measures for their conservation. Sixteen of Pakistan's wetlands had been declared as Ramsar sites by June 2002. Pakistan has been a signatory to the Bonn Convention on Migratory Species (CMS) since 1987 and to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since 1976.

To adhere to international conventions, forest policy provisions related to wildlife and biodiversity conservation need to be implemented by provincial governments. It is not yet sufficiently understood that forest and biodiversity conservation are not merely provincial issues but transboundary and global in nature. In order to address the global concerns for biodiversity conservation under the Convention on Biological Diversity (CBD), Pakistan prepared a Biodiversity Action Plan (BAP), which provides a framework for raising public awareness for the sustainable management of the country's biodiversity. Similarly, implementing other protocols like the Convention on Climate Change will impact on Pakistan's forest policy, as forests and related ecosystems are now considered gene pools and carbon sink repositories of global importance.

Emerging issues

Climate change impacts

Noticeable signs of climate change include droughts, desertification in arid and semi-arid areas, seawater intrusion of the Indus Delta with consequent reduction in mangrove cover, increasing summer flooding, less rain and snowfall, retreating glaciers, water scarcity and forest cover decline and a reduction in non-wood forest products (NWFPs). Persistent drought for the last three years has affected afforestation programs and natural regeneration adversely. Planting targets during the monsoon and spring campaigns have been reduced drastically as mortality rates have increased considerably in drought-prone areas. The widespread dieback of shisham (*Dalbergia sissoo*) and other trees is attributed mainly to climatic stresses and fungal disease. The recent bark beetle infestation in the Murree Hills and Azad Kashmir pine forests is attributed to the extended drought and lack of snowfall during the winter in the mountainous areas. Continued dry spells and inadequate rains during the monsoon have increased the vulnerability of trees to major termite infestations. Forest fires have occurred more frequently and their control has become difficult. These anomalies have far-reaching social, economic and environmental impacts and affect sustainable forestry development initiatives in Pakistan.

Biodiversity loss

The biggest problem is the continuing loss, fragmentation and rapid degradation of natural habitats. Species diversity and stocking density of forests is declining. Upland coniferous forests in Siran Valley in NWFP declined by 52 percent between 1967 and 1992. Riverine forests in Sindh are disappearing due to reduced water levels in the Indus River. The mangrove forests of the Indus Delta diminished from 2 600 km² in the 1970s to 1 300 km² in the mid-1990s (Table 3).

Table 3. Distribution of forests by vegetation type ('000 ha)

Category	Punjab	Sindh	NWFP	Balochistan	NAs	AJK	Pakistan
Coniferous	46	-	1 105	131	285	361	1 928
Irrigated plantations	136	82	-	-	2	-	220
Riverine	54	241	-	5	-	-	300
Scrub	324	10	115	163	658	1	1 271
Coastal	-	345	-	-	-	-	345
Mazri lands	-	-	24	-	-	-	24
Linear plantations	14	-	2	-	-	-	16
Private plantations	-	-	159	-	-	-	159
Total	574	678	1 405	299	945	362	4 263

Invasive and exotic species

The impact of invasive alien species on indigenous biodiversity is being felt in Pakistan. There is a need to make specific provisions in the forest policy and forest law to overcome the negative impacts of invasive species, which is expected to increase in the future. The effect of exotic species on native flora and fauna has not been well documented. The introduction of eucalyptus and other species may pose threats to natural habitats in the future and needs to be investigated.

Sustainable forest management

Promoting the concept of SFM is difficult in the absence of land security and conflicting demands on forest resources by many stakeholders. Private forest owners are more interested in commercial harvesting and are insensitive to the requirements of natural regeneration and restoration of the logged-over areas. The same situation exists in forests in inaccessible areas in Northern Areas (Darel and Tangir) that are owned jointly by the tribal communities.

Stakeholder fora

Forest policy formulation and revision is a continuous process. In order to involve all stakeholders in policy planning and formulation it is felt that stakeholder fora should be established at national and provincial levels to serve as think tanks. These fora could also be involved in monitoring policy implementation, deforestation and land-use changes. They may also play a role in forest certification and the wood products trade.

Current national forest policies

Policies related to the Constitution, national development plans and external influences

1973 Constitution

The scientific management and protection of the forests is the responsibility of the PFDs. However, policy formulation continues to be the responsibility of the federal government. All sectoral policies are a corollary of the "Principles of Policy" enshrined in Chapter 2 sub-section (1) of the 1973 Constitution of Pakistan (Appendix 2).

In *Review and analysis of forest policies in Pakistan 1992* Abeedullah Jan [Rtd] (Inspector-General of Forests) states: "All policies of the government including forest policy draw strength and authority from the 'Principles of Policy'. Although the word 'forest' as such does not appear in the 1973 Constitution of Pakistan, foresters are of the opinion that "environmental pollution and ecology" listed under the Concurrent Legislative List in the 1973 Constitution covers forest ecosystems.

The first Forest Policy (1955) was framed under the forum of the Central Board of Forestry (CBF) constituted in 1952. This board, despite having wide representation of both elected representatives and experts from different fields did not play an effective role in monitoring policy processes and their implementation. The forest policies continued to be influenced by foresters trained in British and Indian fashion. The CBF was reconstituted in 2001 (Appendix 3) and renamed the Federal Forestry Board (FFB) to make it a broad-based multi-stakeholder forum to debate on forest policy and sustainable management related issues.

Five-year National Development Plans

The government's Planning Commission is the highest forum to prepare national development plans on a five-yearly basis. These plans detail the measures to be taken by various economic sectors during the plan period. The Five-year National Development Plan coincided with the 1955 Forest Policy focusing on the role of forestry in economic development. All successive plans also contain a chapter on forestry (see Appendix 4 for the forestry issues contained in the Eighth Plan, 1993 to 1998).

External influences on policy formulation

The merger of provinces into "West Pakistan" and some other developments necessitated the issuance of the 1962 forest policy statement. In 1972, after the dismemberment of Pakistan in 1971, a National Enquiry Committee was constituted to submit its recommendations to the Council of Common Interest that was answerable to parliament. The 1975 Forest Policy originated from the recommendations of the National Enquiry Committee. Again in 1980, a forest policy statement formed part of the 1980 National Agricultural Policy. The National Commission on Agriculture, constituted by the government in 1988, also contained specific recommendations on forestry. This was followed by the first consultative international seminar in 1989 in Karachi organized by the Office of the Inspector-General of Forests (OIGF) and FAO under the aegis of the USAID Forestry Planning and Development Project (1986 to 1994) to formulate a new forest policy. The draft policy was circulated to all provinces and approved by the Prime Minister at a farmers' conference in May 1991. This policy was discussed and approved by the National Assembly in June 1991.

Sometimes new policy directions are the result of unprecedented events such as improper commercial exploitation of forests by forestry cooperatives in the NWFP or the catastrophic floods of September 1992 in northern Pakistan. These floods caused enormous damage to human settlements in fragile mountain ecosystems and disrupted infrastructure and communication networks. The flood damage was attributed to heavy deforestation in mountainous areas by forestry cooperatives from 1980 to 1991. The government established a committee to examine the causes of deforestation, which recommended a ban on commercial logging of forests in 1993. The ban continued until December 2000 when the federal cabinet, while lifting the ban for one year, also provided guidelines to the PFDs for regulating the commercial harvesting of forests. The federal cabinet's decisions (Appendix 5) serve as policy directives for the provinces to ensure the sustainable management of forests. The one-year lifting of the ban is conditional to the adoption of measures that lead to the sustainable management of forest resources and stop illegal harvesting of forests.

Manifestos of political parties

The manifestoes of major political parties (e.g. the Pakistan Muslim League, the Pakistan People's Party and Islami Jamhoori Ittehad) also make special mention of forestry. They include measures like the scientific management of forests, social forestry and environmental protection to develop the country's land, water and forest resources. Relevant articles are given in Appendix 6.

It is evident that in Pakistan, forest policies comprise statements, directives and guidelines. National- and provincial-level policy and planning documents such as the NCS, FSMP, Sarhad Provincial Conservation Strategy (SPCS) and Balochistan Conservation Strategy (BCS) also

highlight national and provincial policy issues related to various sectors of economic development.

Guiding principles

The guiding principles of Pakistan Forest Policy are:

- Forests and rangelands together with the biodiversity that inhabit these ecosystems are part of the ecology and economy of Pakistan, and an important national heritage that needs to be conserved for present and future generations.
- Sustainable management of natural resources through active partnership with communities and various stakeholders for goods and services to support community livelihood systems; revenue generation shall not be the principal motive for their management.
- Ecosystems and habitats that are unique in their biodiversity and face extinction need to be conserved through a well-managed protected area management system and legislation.
- Alleviation of poverty in fragile ecosystems and watersheds through small income-generating schemes like cultivation of medicinal plants and NWFPs.
- Promote NGOs to educate the masses and create public awareness for environmental improvement.
- Strengthen existing institutions in natural resource management (NRM) particularly in participatory NRM; encourage private sector participation in forestry through the establishment of multi-stakeholder fora at various levels.
- Regular monitoring of the health and condition of forest and grassland ecosystems.
- Management of renewable natural resources with their associated biodiversity in accordance with international conventions and treaties.

Forest policies: thrust areas

An overview of the main thrust areas of various forest policies is presented below.

Forest resource and land-use change

The management of forest resources, especially public forests, is central to all forest policies. The first forest policy of Pakistan issued in 1955 accorded high priority to forestry in national development plans and recommended that forests should be classified on the basis of their utility and management objectives. It emphasized the need for developing management plans to ensure sustainable supplies from forests to earn revenue for the state. This policy also provided an increase in forest area by reserving 10 percent of land and water in agricultural areas for irrigated plantations.

The Forest Policy of 1962 recommended that state grass- and pasturelands (*rukhs*) and land adjoining canals should be transferred to PFDs for management. This policy also provided for the development of forest resources alongside agricultural practices. The 1991 policy recommended integrated use of forest resources in conformity with wildlife conservation, environmental and social needs.

Forest management, including timber harvesting

Most forest policies have emphasized the need for scientific forest management and commercial harvesting on a sustained yield basis. In irrigated plantations in the Punjab, harvesting was done by the PFDs but in natural forests in the NWFP and Azad Kashmir harvesting was done through contractors until 1970. The contractors had a vested interest, first gaining entry into forests and then having a free license to cut additional (unmarked) trees, by offering rates that were higher than the market price of timber. The period for timber leases invariably was prolonged for up to 15 years with staff connivance. Although the illegal cutting of forests by contractors was an issue in the 1955 policy, the problem persisted. The 1962 policy recommended that logging by private contractors should be stopped. In 1975, the PFDs in the NWFP and Azad Kashmir took over timber extraction and subsequently established semi-autonomous corporations – the Forest

Development Corporation (FDC) in the NWFP and Azad Kashmir Logging and Saw Milling Corporation (AKLASC). Thus commercial logging was entrusted to state-run corporations. The policy of 1991 recommended the continuation of logging by public sector.

Although the public sector corporations still exist, their work has remained confined to commercial logging without any value addition. The work of these corporations has been reduced further due to the ban (1993-2000) on commercial timber harvesting. There is a growing concern that public sector logging corporations are unable to improve forest management and their future remains uncertain.

Forest and biodiversity conservation

Pakistan has some of the world's rarest floral and faunal species but they are now in danger from habitat loss and overexploitation. During the last few decades, the high population growth rate has increased the pressure on the country's natural resource base. In the past, economic policies have widened income disparities and forced people to overexploit biodiversity. As a result, deforestation, pollution, overgrazing, soil erosion, salinity and waterlogging, changes in riverflow regimes, excessive use of agrochemicals and weak enforcement of conservation-related legislation have become major threats to the remaining biodiversity.

The 1955 forest policy provided for the protection of wildlife and conservation of their habitats. The 1991 policy dealt with wildlife conservation and recommended awareness raising and collaborative management of wildlife. Increased national and international attention to wildlife conservation resulted in donor assistance to formulate national conservation strategies for the NWFP, Balochistan and Northern Areas.

The National Council for Conservation of Wildlife (NCCW), working under the administrative control of the Inspector-General of Forests, was established in July 1974. It is responsible for policy-making, inter-provincial coordination and international liaison, monitoring and implementation of international protocols such as the CBD, the Ramsar convention, CITES and the Convention on Migratory Species (CMS). At the provincial level, wildlife departments are responsible for enforcing legislation and the management of wildlife.

The key to protecting the biological heritage of Pakistan lies in the involvement of the local people and agencies competent in the conservation and sustainable use of biodiversity. The government recognized the importance of these measures in the preparation of the NCS and in becoming a signatory to the CBD in 1994. The BAP was prepared in collaboration with IUCN-Pakistan. This plan provides a brief assessment of the status and trends of the nation's biodiversity, outlines strategic goals and objectives and provides a plan of action that includes coordination, arrangement and implementation measures. The process leading up to the preparation of the BAP involved broad participation of representatives of the government, academia and civil society through national and regional consultative workshops.

Forest industries

The wood-based industries focus on furniture, plywood, particleboards, sporting goods and paper and pulp. The 1955 policy recommended leasing of forestland to industries for growing industrial wood, and expressed the need to involve NGOs in extension. However, the support of forest industries did not receive much attention in previous forest policies because of the paucity of natural forests and the limited supply of raw material for wood-based industries. However, the policy guidelines of 1980, that were issued as part of the National Agriculture Policy, included provisions related to the planting of fast-growing tree species in areas outside forests and increased production of industrial wood to meet the requirements of wood-based industries gradually.

Non-wood forest products

NWFPs are an important forest resource, which did not receive attention in early forest policies. NWFPs include medicinal plants, mushrooms, honey, wild fruits, resin, mazri (*Nonnorrhops ritchieana*) and a variety of other products. Indigenous knowledge related to medicinal plants is on the verge of vanishing. There are 10 leading *dawakhana* (small enterprises making herbal drugs) that use about 20 million rupees worth of medicinal herbs annually. There are 50 000 registered *tabibs/hakims* (village doctors offering herbal medicines). NWFPs offer income-generating opportunities to communities in fragile ecosystems.

The 1980 policy recommended increasing the production of medicinal herbs. The 1991 policy encouraged greater productivity of minor forest produce (e.g. resin, medicinal plants, edible mushrooms and mazri) to develop the economy and enhance employment opportunities in rural areas. These policies also recommended the promotion of sericulture. The revised policy of 2002 has a provision to promote NWFPs for poverty alleviation in rural areas.

Trees outside forests

More than 90 percent of the fuelwood requirements are met by trees outside forests (Table 4). The promotion of tree plantations by the private sector has been recognized for a long time as an option to narrow the gap between supply and demand. Since independence tree planting has been promoted by providing the general public with seedlings free of charge (from PFDs). The 1955 policy recommended public support through education and extension to encourage block plantations by farmers' cooperatives.

The 1962 policy also recommended supplying seedlings to the public at nominal rates and institutionalizing farm forestry by making it a function of the Agriculture Department. This policy also encouraged farm forestry research and research on shelterbelts and windbreaks by establishing pilot projects on farms. A number of development projects supported the establishment of woodlots on degraded farmlands, waterlogged and saline soils and denuded upland watersheds, especially under the USAID-funded Forestry Planning and Development Project (1986-1994). Influenced by the success of the USAID project, the 1991 policy emphasized the promotion of afforestation on marginal farmlands, supplying seedlings at nominal cost and an effective outreach/extension program.

There is a need to develop cost-effective methods to conduct an inventory of trees outside forests.

Table 4. Estimated growing stocks on private farmlands

Provinces	Area of private farms (ha)	Growing stock on private farmland			Reported removals from private farmlands			
		Timber	Small wood	Total	For sale	Own use	Total	% of prov stock
		Millions of m ³			Millions of m ³			
Azad Kashmir	171 523	1.23	0.83	2.06	0.00	0.02	0.02	0.9
Balochistan	1 575 898	1.97	1.46	3.43	0.01	0.00	0.01	0.3
NWFP	1 658 680	3.70	4.86	8.56	0.07	0.00	0.07	0.8
Punjab	12 099 508	22.14	23.96	46.10	1.57	0.16	1.73	3.8
Sindh	3 725 884	4.95	3.58	8.53	0.72	0.03	0.74	8.7
Northern Areas	500 000	4.16	3.80	7.96	0.00	0.02	0.02	0.3
Total	19 730 493	38.15	38.49	76.64	2.37	0.23	2.60	3.4

Source: FSMP Farm Forestry Survey. Reid, Collins and Associates (1992).

Wood energy

Wood is and will continue to be used as a major source of energy in most rural areas (Table 5). Most of the early forest policies had provisions for enhancing the production of trees outside forests to meet fuelwood demands. The development programs of the PFDs are centered on large-scale afforestation of private farmland and mountainous watersheds. However, lack of financial resources and prolonged droughts have affected afforestation efforts negatively.

Table 5. Projected consumption and growth of wood

	Units	1993	1998	2003	2008	2013
Population						
Rural population	million	81.4	90.9	101.1	111.6	122.1
Urban population	million	41.8	52.5	66.2	83.3	104.7
Total	million	126.8	147.6	172.2	200.6	233.5
Fuelwood consumption						
Rural	'000 m ³	36 578	40 385	44 587	49 228	54 353
Urban	'000 m ³	6 917	7636	8431	3909	10 187
Total consumption	'000 m ³	46 455	51 289	56 626	61 521	67 028
Industrial wood						
Total consumption	'000 m ³	3 549	4 280	5 339	6 419	7 933
Consumption of all wood	'000 m ³	50 004	55 569	61 065	68 940	76 967
Projected sustainable supplies from forests	'000 m ³	8 847	9 506	12 802	16 099	19 395
Required from other sources	'000 m ³	41 157	46 063	49 163	52 841	57 572

Source: Statistics compiled from FSMP plans of all provinces, Northern Areas and AJK, 1992.

The National Forest Policy of 2002 emphasizes the provision of substitutes for fuelwood in the mountains by all federal and provincial governments as their contribution to rehabilitating the environment. The policy provides piped gas, LPG, solar energy and micro-hydropower to reduce the dependence on biomass.

Investment in forestry and wood processing

Due to financial constraints, development programs and investments in forestry continue to have low priority. The forestry sector is not organized and prepared for large-scale investment projects to be financed through loans. The financial resources of the PFDs are only sufficient to cover staff salaries and to implement small afforestation and nursery schemes. However, over the years, the growing supply of wood from private farmlands has increased the number of small wood-based industries.

People's participation, decentralization and devolution of forest management responsibility

National- and donor-assisted social forestry projects implemented during the last decade, which covered integrated land-use management activities in private, communal and state forests in Pakistan with community participation, have challenged forest policy and legislation. These projects have generated interest in alternative approaches to forest management. All policy and planning documents now identify social and participatory forestry as a workable approach to achieving SFM.

The participatory projects have had a positive impact on forestry institutions in several ways. They have helped to introduce new working methods that consider the needs of local people and their livelihoods in forestry. Institutional change at the local level has been most notable in the development of diverse participatory village organizations. These organizations have assumed certain roles that were missing earlier in these projects. In many areas, community rules and a code of conduct for resource protection, and sharing and management of common assets has been developed by these institutions. New ways of working with local people have evolved and new functional units within the PFDs dealing with participatory planning have been set up.

The recently announced Devolution Plan aims at decentralizing administration and empowering local people at the grassroots level. At the district level, planning, implementation and monitoring of all development activities by line departments will be coordinated by a district coordination officer working under the district *nazim*, an elected representative of the people. Financial allocations will be made directly to the districts. Under this scheme, line department activities at the district level have been integrated for developing natural and other resources at the local level.

Although devolution is still in its infancy, it is hoped that eventually it will initiate a new era, in which the people at the grassroots level will not only have the ownership of their resources but also the power to take decisions to manage them and formulate policies for their sustainable use.

Reorganization of forestry institutions

In the early days of independence, the need for the reorganization of forestry agencies was expressed and reflected in the 1955 policy. The PFDs were under the administrative control of the Department of Agriculture until the early 1970s, which meant that forestry received less attention than agriculture. The Sindh Forest Department emerged as an independent body of the Forestry and Wildlife Department in the early 1970s. This had a bearing on the 1975 policy that recommended similar administrative arrangements in other provinces.

At the provincial level, PFDs are responsible for the management of forests and irrigated plantations through development programs. At the federal level, the OIGF is responsible for the formulation, coordination and monitoring of forest policy. The FFB was reconstituted with new terms of reference (Appendix 3).

Since 1947, the administrative structure of PFDs has not undergone any major change. However, in the NWFP institutional reforms are under way. Once the institutional reforms are finalized they may be adopted by other PFDs.

Forestry research, education and extension

Research on fast-growing tree species, to increase production and provide quick returns to farmers, received priority in the 1962 and 1975 policies. These efforts led to the introduction of exotic species like eucalyptus and poplar on an experimental basis in different parts of Pakistan. There is growing concern that exotic species have not only changed the landscape but suppressed the promotion of indigenous species that are well adapted to various ecological zones. The introduction of poplars has been more successful in the Peshawar Valley and Rawalakot. They are planted largely along field boundaries and have a ready market in the sport and matchmaking industries.

With a view to intensive management of hill forests to increase production, the 1962 policy recommended studies to shorten rotations. Other areas of research emphasized finding suitable species for saline and waterlogged soils (1962), studies on demand and supply (1975) and improvement in wood utilization (1962). Research focused mainly on technical issues. The 1991 policy recommended research on social aspects of forest management, involvement of industry and the private sector in research, establishment of regional research centres and coordination among provincial forestry research units, universities and the PFI.

The 1991 policy also recommended the need for periodic monitoring of forest conditions and the establishment of a geographic information system (GIS). Presently, limited data on timber stocks and flows from public forests are being collected. As a result, information on the environmental and social values of forests remains inadequate. The 2002 policy recommended a GIS-based forest resource accounting system and monitoring for future planning and implementation.

The PFI has been providing training and education in several forestry disciplines to foresters to meet the needs of the PFDs. There is a growing realization that the curriculum for graduate courses at the PFI needs to include subjects such as GIS, GPS and computer information systems to meet the emerging challenges. Continuing education through refresher in-service courses needs to be established at the PFI so that foresters are kept abreast of the changes in the management of renewable resources. Training at the PFI needs to include new skills for SFM, business management, environmental impact assessment and participatory methodologies.

Forest fires

Forest fires are frequent in Pakistan and about 50 000 ha of forests (1.27 percent of the total forest area of 3.95 million ha surveyed) are affected annually. Scrub forests, because of their location and climatic conditions, are most prone to fires and about 2.1 percent of the area is burnt annually. About 1.85 percent of irrigated plantations is affected by fires. Coniferous and riverine forests are comparatively safe and suffer less (Table 6).

Climatic conditions, the presence of combustible material and human activities are the main causes. Forest fires usually break out during the dry and hot summer and autumn months. Local people mostly set fires for mischief or to burn the ground vegetation to improve grazing conditions. Other causes are accidental (unextinguished cigarette ends, camp fire cinders or rifle shots during celebrations). The cross-border fire exchanges along the line of control in Kashmir is the main reason for forest fires in Jammu and Kashmir (e.g. the 1998 fire that affected 51 639 ha or 9.1 percent of the total forest area).

Table 6. Forest types and area burnt each year

Forest type	Total area (000 ha)	% of area burnt	Area burnt (ha)
Coniferous	1 911	0.74	14 141
Plantations (all types)	431	1.86	8 017
Riverine	297	0.10	297
Scrub	1 311	2.10	27 531
Total			49 986

Climate change

Environmental forestry appeared as a theme in the 1991 policy, which highlighted problems such as acid rain, rising sea levels, devastating floods and desertification. The policy recognized the importance of forests for improving the global environment and sequestering carbon. The policy provisions included: implementation of programs to minimize pollution through tree planting; establishing green windbreaks on arid lands; establishing green areas in all cities, reserving 25 percent of the area of new townships and industrial estates for parks, recreational spaces and green belts; formulating and enforcing pollution standards for emissions that impact on protected wildlife areas and wetlands; and strengthening the capacity to implement anti-pollution measures.

Forest plantations

Forest plantations include all planted forests in the mountains, irrigated plains, riverbanks, along canals, railway lines and highways, and trees planted in urban areas, and on homesteads and farmlands. As Pakistan is forest-deficient, tree plantations play an important role in enhancing the environment and there is vast potential for expanding tree plantations to increase the national forest endowment. Use of exotic and alien species should be discouraged. Some alien species such as poplars have done well but others like mesquite (*Prosopis juliflora*) have become invasive. Preference should be given to indigenous species. Similarly, paper mulberry has become an invasive species and is believed to cause high pollen counts during spring in Islamabad. Therefore, there is a need to quarantine, monitor and eradicate invasive alien species. For forest plantations, the future policy focus should contain the following elements:

- Forest plantations should have a mix of indigenous species to avoid risk from diseases and pests and to enhance their ecological and biodiversity values;
- Fast-growing indigenous species with proven commercial value and local usefulness should be promoted for planting on farmlands and homesteads;
- Exotic species of doubtful ecological value, such as eucalyptus, should be planted in saline and waterlogged areas only;
- The plantations along highways should be planned properly in terms of species composition and aesthetic considerations; and
- Irrigated plantations in the public sector should be managed for the production of high-quality timber for furniture and sporting goods industries.

Watershed management

Ninety percent of the water in Pakistan originates from the northern upland watersheds. With the construction of dams and reservoirs to generate hydropower and supply water to the massive irrigation works that support the national agricultural economy, watershed management in the mountains has become a national priority. Loss of vegetation cover in the watershed areas seriously impairs the hydrological cycle resulting in landslips and flashfloods, causing damage to infrastructure, settlements and loss of human and animal lives. The main causes of watershed degradation are forest conversion, improper agricultural practices and fragmentation of land, complex land tenure arrangements and poverty. During the last three decades, watershed management has assumed special significance and received attention in federal and provincial governments. A number of integrated watershed rehabilitation projects with a focus on community organization and participation have been implemented with considerable success.

Experience has shown that the sectoral approach to mountain development has to be replaced by an integrated NRM approach with multi-stakeholder participation to address the special environmental values of mountain watersheds. Prolonged drought and a reduced amount of snowfall in the mountainous areas have decreased water availability in major rivers considerably, creating water scarcity in the country. Since water-related issues and conflicts are expected to worsen due to the effects of climate change, the management of upland watersheds will become the policy thrust area during this century. Pakistan, like other countries, is celebrating the International Year of Mountains 2002 under Agenda 21. There is a need to prepare a strategic plan for sustainable mountain development in partnership with local communities and the private sector.

The 1955 policy recommended coercive measures to control land use. However, plans to construct dams in the late 1950s brought the need for large-scale watershed management programs to the fore. Recommendations on watershed management have been an integral component of forest policies since 1962. Large-scale afforestation, planting of fruit trees, and soil and water conservation measures have been major recommendations. The policies also recommended the provision of incentives to farmers and subsidies on cooking stoves and kerosene to reduce the use of fuelwood. The 1991 policy recommended watershed planning and coordination as a federal function, with implementation continuing to be the responsibility of the provinces.

Instruments for implementation

Regulatory and administrative instruments

The main function of forest legislation has been to prevent the misuse of forests. Basic legislation, primarily regulatory and punitive in nature, does exist to prevent and punish the abuse of public forests. Almost exclusive reliance on the force of law has been the strategy to achieve the main policy objectives. Public education and participation were neither conceived as policy instruments nor provided for in the law. Legislation has done little for supporting the private sector and privately owned forest make up only about one-third of the total forest cover (Table 7). The privately owned and community forests have remained under the control of the government in one form or the other and are subjected to similar laws.

Table 7. Distribution of state and privately-owned forests in Pakistan ('000 ha)

Category	Punjab	Sindh	NWFP	Balochistan	Pakistan
State-owned forests					
Reserved	329	172	94	1 087	1 682
Protected	646	344	4	-	994
Unclassed	23	-	20	-	43
Municipal	116	-	92	-	208
Resumed	8	57	35	-	100
Sub-total	1 124	573	245	-	3 027
Percentage					66
Privately owned forests					
Guzara	37	-	585	-	622
Chos Act	3	-	-	-	3
Section 38	6	-	42	-	48
Communal	69	-	809	-	878
Sub-total	115	-	1 436	-	1 551
Percentage					34
Total	1 237	537	1 681	1 087	4 578

Note: Private farm forest is not a recognized legal category. It was not, therefore, taken into account in computing the forest area.

The enactment of forest legislation in the form of principal laws and acts used to be the concern of the federal government, even when forestry was a provincial subject. In notification No. S.R.O 1328 (I) 73, dated 7 September 1973, the President of Pakistan authorized governors of provinces to adapt federal laws under the Constitution. The provinces thus have been empowered to adapt and amend previous federal laws on forestry and to formulate new laws. Recently, however, in Punjab Province, the Law Ministry has observed that the provincial government is not authorized to make an amendment to the 1927 Forest Act, which is a federal act.

An analysis of existing legislation on forestry in Pakistan divides forest legislation into three categories (see also Appendix 1):

Common Principal Legislation comprising laws and acts made by the federal or previous West Pakistan government, which are applicable to more than one province. They include the Forest Act (1927), the Punjab Land Preservation (West Pakistan Amendment) Ordinance (1963), the Forest (West Pakistan Amendment) Act (1964), the West Pakistan Firewood and Charcoal (Restriction) Act (1964).

Primary Provincial Legislation comprises provincial statutes of the first rank that rarely need revision. They include the Baluchistan Forest Regulation (1890), the Baluchistan Forest Regulation (Amendment) Act (1974) and the Punjab Land Preservation (Chos) Act (1900).

Secondary Provincial Legislation comprises provincial legislation derived from primary or principal statutes.

Over the last two decades, regulatory and administrative instruments in the form of legislation have lost much of their power. Laws like the West Pakistan Goats (Restriction) Ordinance (1959) and the Punjab Plantation and Maintenance of Trees Act (1974) are obsolete. Under the prevailing

socio-economic conditions, enforcement of forest laws and rules is problematic. Issues related to forest law are held in low esteem and have remained unresolved for a long time. Some forestry laws clash with non-forestry legislation like laws on mines and minerals and corporate laws on regional development. The working group on forestry-related legislation at the 1989 Forest Policy seminar in Karachi made the following recommendations that are still valid:

- Dependence on punitive legislation may be reduced gradually and more reliance placed on education, cooperation and participation of the people;
- Prevention rather than punishment should be the future guideline. In serious forest offence cases, foresters may be made as accountable under the law as the offenders;
- Farm forestry should be encouraged on a purely voluntary basis and there should be no legislation (on it) about tenure, tree ownership and tree cutting.

Voluntary instruments

In the existing forest law there is a provision that communities living in the vicinity of forests may be involved in forest fire suppression in private or state forests. Traditionally, local communities have assisted the local forest department in fire suppression voluntarily. Villagers also assist the forest department in clearing roads after landslides in mountainous areas. Donor-assisted community forest projects have been able to revive some of the old traditional of “asher” (collective labour). Many community organizations voluntarily contribute to afforestation and watershed rehabilitation programs. The concept of Joint Forest Management Committees, in which all the stakeholders are involved through dialogue and consensus, of sustainable forest and watershed management is also gaining momentum. The revised Forest Policy 2002 seeks to strengthen local institutions for the protection and management of natural forests.

Non-forestry policies affecting forest and tree management

Agriculture and mining

Trees outside forests meet more than 90 percent of the timber and fuelwood needs in the country. They have saved Pakistan from an energy crisis. However, sharecropping arrangements in many areas discourage tenants from tree planting. Agricultural extension agents also restrain farmers from planting trees for various reasons such as inhibiting aerial spraying, shading and damage to irrigation channels. This interference impacts forest policy implementation to enhance tree cover on farmlands. Similarly, mining activities result in damage to mountain ecosystems, as restoration activities are not included in mining policies.

Rural development, tourism, and infrastructure

Rural development affects forestry through the construction of infrastructure and communication networks in forested areas. Unplanned construction of residential buildings and hotels as part of initiatives to enhance the rural economy also damage natural resources and affect environmental stability in mountain areas.

The construction of dams and barriers on the Indus River has reduced the natural flooding of river banks and freshwater inputs into the Indus Delta. This affects the health of both riverine plantations and mangrove forests severely and has disturbed river ecology. The reduced level of water in the Indus River is becoming a threat to the survival of the Indus dolphin. Some important wetlands like Haleji Lake are also affected.

Infrastructure development to promote tourism in Northern Areas is attracting more international trekkers and mountaineers. Many porters who accompany the mountaineers destroy trees, alpine bushes and plants in search of fuelwood. Many northern mountain wooded areas have become tourist destinations, increasing pressure on wood for construction and fuel. Problems of waste disposal are often associated with increasing numbers of tourists in hill stations during the summer months. On the positive side, deforestation has been noted by tourists and there is a strong lobby against cutting down forests.

Industrial development

Wood-based industries have triggered a sharp increase in farm forestry in the plains. As it is lucrative, more farmers are growing trees despite weak support services. However, in major cities like Karachi, industrial pollution has become a serious threat to the survival of mangrove ecosystems and marine life. The restoration of mangrove ecosystems is important for the fishing industry, which earns considerable foreign exchange.

Employment

Lack of employment opportunities also impacts on forestry. In many tribal areas, forests are still jointly managed or considered an open access resource. Daily, hundreds of woodcutters visit adjoining forests and collect fuelwood for domestic use and retail at the market. In Buner, NWFP, woodcutters use camels to extract fuelwood by uprooting *Dodonea* bushes and selling the leaves at local markets for tobacco curing.

Trade

Many forest products remain free of import duties due to the shortage of raw materials in the country. However, excessive import of some products is controlled through tariffs because of the paucity of foreign exchange. The duties on logs, timber and wood products range from 50 to 125 percent. Such high tariffs restrict the import of high-value timber and wood products such as tropical timber, chemical pulp and newsprint.

Forest policy formulation

Forest policy formulation process

In Pakistan, there are no specific procedures prescribed for policy formulation, consultation and implementation. In the past, forest policy formulation was an episodic activity initiated by personal intervention or a consultative process involving various stakeholders. Until 1991, the forest policies were based on technical knowledge and practical field experience of senior officers. As the word “policy” means a set of guidelines to pursue a course of action to meet a desired goal, policy formulation should not be a static but a dynamic process that involves the participation of all stakeholders who are directly or indirectly concerned.

Forest policies have been formal as a policy statement issued by the government, or informal in the form of *ad hoc* directives or guidelines by the political leadership and issued from time to time. The first policy agenda of Pakistan was issued in 1955 through the Central Board of Forestry constituted in 1952. With the merger of provinces in West Pakistan into one unit and other external influences, the policy statement of 1962 was issued by the federal government. The 1975 Forest Policy was approved by the Council of Common Interest as part of agricultural policy. The 1980 policy was initiated by the Inspector-General of Forests through a consultation with provincial governments and issued after approval by the federal cabinet as a part of the 1980 National Agriculture Policy.

In 1988, the government created a National Commission on Agriculture, which made some recommendations related to forestry. The Inspector-General of Forests under the aegis of the USAID Forestry Planning and Development Project organized an international seminar on forest policy in Karachi in March 1989. Based on the recommendations of the seminar a draft forest policy was developed and distributed to the participants. The draft was then discussed at a farmers’ conference chaired by the Prime Minister. The policy was approved and announced in May, 1991. The salient features of the Forest Policy (1991) were discussed in the National Assembly during the budget session of June 1991; and the policy was approved by a majority vote.

Formalizing policy formulation

Since 1994, the organizations responsible for formalizing policy are the OIGF, the Ministry of Environment, Local Government and Rural Development and the PFDs. On the issuance of a directive by the political leadership or the minister, the Inspector-General of Forests has a

coordinating role to involve all the PFDs through consultations that include inter-provincial meetings, seminars and workshops. A draft policy prepared by the OIGF is then reviewed by provincial governments and the policy guidelines are finalized through discussions at the FFB.

The Forest Policy (2002) is now in the final stages of preparation after a dialogue involving many stakeholders in different fora. The formulation of the policy involved the following steps:

- A directive by the federal cabinet to revise forest policy ensuring the sustainable management of forests and preventing illegal damage;
- The creation of a technical sub-committee by the ministry to draft a revised forest policy;
- Inter-provincial workshops involving professional foresters of all the PFDs to review the draft policy prepared by the technical sub-committee;
- A multi-stakeholder national workshop to review the draft policy and to incorporate the views on the policy draft;
- Promulgation of the draft policy by the minister to the press;
- Soliciting the views of federal ministries on inter-sectoral linkages; and
- A final draft to be submitted to the federal cabinet for approval.

Stakeholder involvement

Until 1991, all forest policies were prepared by professional foresters with no or very little input by other stakeholders. Therefore, early forest policies were normative and autocratic in their approach, focusing on technical issues. The concept of stakeholder participation evolved during the implementation of donor-assisted social forestry projects in the last decade. An important lesson learned was that all stakeholders, irrespective of land ownership, need to be involved in planning, policy-making, implementation and monitoring for the sustainable development and conservation of the nation's forests.

A number of developments have taken place at the provincial levels. A multi-stakeholder forum of forest owners, users and other interested groups has been established in the NWFP. This and similar fora at the grassroots level need to be institutionalized. The FFB also needs to take a more active role and effectively coordinate consultations on emerging issues related to international conventions, trade and climatic change between provinces and the federal government. While the FFB is mandated to discuss policy-related issues, the NCCW since its establishment in 1974, has been instrumental in promulgating provincial wildlife acts. The NCCW meets twice annually under the Chair of the Federal Minister for Environment. The council serves as a multi-stakeholder forum that debates issues related to biodiversity conservation and recently initiated community-managed trophy-hunting programs to promote community initiatives in the conservation of wildlife.

Although the country has the relevant expertise to review policies critically, currently the office of the OIGF is understaffed and overburdened by the work of three attached departments – the PFI, ZSD and NCCW; policy reviews and analyses are conducted rarely and are often externally driven.

Since policy-making processes involve much coordination and consultation, a forum to carry out critical reviews as a regular function not only at the federal level but also at the provincial level needs to be established. At the federal level, a core group of specialists representing various sectors that impact on forest policies has to be established to assist the OIGF's office to review policies regularly. The process should also have an effective data management system or a forest resource accounting system to monitor forest cover changes, a monitoring system to report the outcomes of activities and investments, active participation by stakeholders and inter-sectoral linkages.

Within the broad objectives and parameters set in the national forest policies, and obligations to meet international commitments, all provincial governments are now developing their own policies, specific to their situations. Multi-stakeholder fora have been established in the NWFP for

a public debate on issues related to forest management and protection. Forest legislation is being amended to ensure effective law enforcement and swift trials of forest offence cases.

Forest policy implementation and impacts

Early forest policies relied on command-and-control measures and outlined restrictions, punitive measures and strict law enforcement by the PFDs. Policies lacked vision and comprehension of local-level problems and were deficient in the human dimension. Hence, forest policy implementation has only been partially successful.

Many past forest policies also provided ambitious provisions that were beyond the capacities of the provincial governments to implement. Most policies constituted a wish list without prescribing any mechanisms for achieving objectives. Not comprehending forest-related environmental issues at national policy and planning levels, low priority and insufficient budget allocations by provinces to forestry sector development impeded the realization of policy goals. As such, past national forest policies have been treated as mere recommendations by the PFDs, with no legal binding to implement them.

An important shortcoming of the past policies was the lack of feedback from the field to policy-makers. Actions in accordance with provisions seldom occurred because of the policy itself. An inherent weakness in policy implementation at the federal and the provincial levels is the lack of institutional mechanisms for overseeing implementation and initiate legislation necessary to assist policy implementation. As there is no adequate forest data compilation and accounting system, it is difficult to monitor forest conditions. Insufficient financial resources and the low priority given to forestry in the national development plans, political instability and weak law enforcement capacities are common barriers to policy implementation. Some shortcomings of past policies are:

- Many policy statements contained unrealistic provisions such as increasing the forest area by 10 percent when 88 percent of the area is arid and semi-arid receiving less than 25 mm of annual rainfall;
- The establishment of public sector corporations for the harvesting of natural forests and forestry cooperatives in the NWFP was not planned properly and led to massive irregularities and excessive cutting of trees contravening working plan prescriptions. In guzara and communal forests, royalties that had to be paid to local forest concessionaires (a term still undefined in existing law) benefited forest contractors but disadvantaged communities;
- None of the past forest policies identified unsustainable commercial timber harvesting and forest depletion by the powerful “timber mafia” patronized by politicians and vested interests as problems. No remedy to overcome this problem was suggested in any policy;
- Past forest policies focused on realization of goods and services from forests, rangelands and biodiversity within the sector and did not attempt to enlist the support of other sectors that promote the depletion of natural resources;
- The role of community participation for SFM was not recognized in earlier policies;
- Policies in the past did not address the fundamental causes of forest depletion that relate to the struggle of the communities to earn their living from resources that have been overexploited for decades;
- The colonial and corporate culture of the PFDs has not been changed to meet the emerging challenges of managing renewable resources.

Conclusions and recommendations

No mechanism for conducting policy reviews exists in Pakistan. There is a need to develop multi-stakeholder fora at federal, provincial and local levels to carry out policy reviews. Such fora will also help in resolving conflicts between the provinces and the federal government related to issues such as taxes on inter-provincial movement of timber, compensation for watershed protection, compensation for the negative effects of the ban on timber harvesting in protected areas, conflict

between various federal agencies and conflict between the energy sector and biodiversity conservation.

In the past, forest policies have been prepared in isolation from wildlife, fisheries, tourism, agriculture, education, population planning, water and the energy sectors. There is a need to develop close linkages with other sectors for sustainable resource development. Extra-sectoral influences are not considered in formal forest policies.

There is insufficient capacity to incorporate provisions of the CBD and the UN Framework Convention on Climate Change into forest policies. Many foresters have poor understanding of issues related to forest biodiversity, management of forests as carbon sinks, international trade in forest products, and forest certification; as such they are inadequately reflected in forest policy contents and processes.

There is no consensus on the definition of SFM. The lack of criteria and indicators for the management of forests in different ecological zones is problematic. The existing forest classification is based on the 1935 description and classification. There is a need to undertake an ecosystem-based classification according to the accepted international system.

Stakeholders (local communities, other government departments, NGOs and biodiversity specialists) are not involved in the preparation of management plans. The subject of invasive and alien species has not been covered in earlier forest policies.

Strengthening of the OIGF and PFDs for policy implementation, monitoring and review is required. Support is also needed for conducting reviews to collate scattered items of forest legislation into a uniform format in accordance with international conventions.

At the federal level, policy goals should be confined to the security of forest goods and services at the national level and basic principles and criteria for SFM. The subjects of international protocols, nationally important issues such as biodiversity conservation, watershed rehabilitation and a broad monitoring system of forest stocks and flows that draws upon provincial forest resource accounting systems should continue to remain with the federal government.

The provinces should focus on all aspects of forest investment and management, including the preparation of working plans, harvesting, sale, afforestation, credit, research and training. Provincial multi-stakeholder fora should be institutionalized as the primary means of policy review and debate. They should be linked to village- and district-level organizations involved in forest management. Provinces should set up forest resource accounting systems to provide information on forest stocks.

Appendix 1 FOREST LEGISLATION

1. Common Principal Legislation

- I. The Forest Act, 1927
- II. The Punjab Land Preservation (West Pakistan Amendment Ordinance, 1963)
- III. The Forest (West Pakistan Amendment) Act, 1964.
- IV. The West Pakistan Firewood and Charcoal (Restriction Act, 1964)
- V. Other Laws.

2. Primary Provincial Legislation

A. Balochistan

- i. The Baluchistan Forest Regulation, 1890
- ii. The Baluchistan Forest Regulation (Amendment) Act, 1974)

B. Punjab

- i. Punjab Land Preservation (Chos) Act, 1900
- ii. The Punjab Forest (Sale of Timber) Act, 1913.
- iii. The Punjab Plantation and Maintenance of Trees Act, 1974.
- iv. The Cholistan Development Authority Act, 1976.
- v. The Murree-Kahuta Development Authority Act, 1986

C. North West Frontier Province

- i. Hazara Forest Act, 1936
- ii. The North-West Frontier Province Protection of Trees and Brushwood Act, 1949.
- iii. The Kohat Mazri Control Act, 1953
- iv. The North West Frontier Province Hazara Forest (West Pakistan Amendment) Act, 1974.
- v. The North-West Frontier Province Laws (Amendment) Ordinance, 1980
- vi. The Provincially Administrated Tribal Areas (Conservation and Exploitation of Certain Forests) Regulation, 1980.
- vii. The North West Frontier Province (Conservation and Exploitation of Certain Forests in Hazara Division) Ordinance, 1980.
- viii. The North-West Frontier Province Forest Development Corporation Ordinance, 1980.

D. Northern Areas

- i. Adaptation of Law, Order, 1975

E. Azad Kashmir

- i. Jammu and Kashmir Forest Regulation, 1930
- ii. The Jammu and Kashmir Forest (Sale of Timber) Act, 1930
- iii. The Azad Kashmir Logging and Sawmill Corporation Ordinance, 1968.
- iv. The Azad Jammu and Kashmir Plantation and Maintenance of Trees Act, 1977
- v. The Azad Jammu and Kashmir Protection of Forests and Distribution of Timber Ordinance, 1980

Appendix 2 The Constitution of the Islamic Republic of Pakistan

Chapter-2- Principles of Policy

- 29 (1) The principles set out in this chapter shall be known as the Principles of Policy, and it is the responsibility of each organ and authority of the State, and of each person performing functions on behalf of in organ or authority of State, to act in accordance with those Principles in so far as they relate to the functions of the organ or authority.**

CONSTITUTION OF PAKISTAN (PAGE. 249)

Concurrent Legislative List.

1. Criminal law, including all matters included in the Pakistan Penal Code on the commencing day, but excluding offences against laws with respect to any of the matters specified in the Federal Legislative List and excluding the use of naval, military and air forces of civil power.
2. Criminal procedure, including all matters included in the Code of Criminal Procedure, on the commencing day.
3. Civil procedure, including the law of limitation and all matters included in the Code of Civil Procedure on the commencing day; the recovery in a Province or the Federal Capital of claims in respect of taxes and other public demands, including arrears of land revenue and sums recoverable as such, arising outside that Province.
4. Evidence and oath; recognition of laws, public acts and records and judicial proceedings.
5. Marriage and divorce; infants and minors; adoption.
6. Wills, intestacy and succession, save as regards agricultural land.
7. Bankruptcy and insolvency, administrators' general and official trustees.
8. Arbitration.
9. Contracts, including partnership, agency, contracts of carriage, and other special forms of contracts, but not including contracts relating to agricultural and
10. Trust and trustees;
11. Transfer of property other than agricultural; and, registration of deeds and documents.
12. Actionable wrongs save in so far as included in laws with respect to any of the matters specified in the Federal Legislative List.
13. Removal of prisoners and accused persons from one Province to another Province.
14. Preventive detention for reasons connected with the maintenance of public order, or the maintenance of supplies and services essential to the community; persons subjected to such detention.
15. Persons subjected to preventive detention under Federal authority.
16. Measures to combat certain offences committed in connection with matters concerning the Federal and Provincial Governments and the establishment of a police force for that purpose.
17. Arms, fire-arms and ammunition.
18. Explosives.
19. Opium, so far as regards cultivation and manufacture.
20. Drugs and medicines.
21. Poisons and dangerous drugs.

22. Prevention of the extension from one Province to another of infections or contagious diseases or pests affecting men, animals or plants.
23. Mental illness and mental retardation, including places for the reception or treatment of the mentally ill and mentally retarded.
24. Environmental pollution and ecology.
25. Population planning and social welfare.
26. Welfare of labour, conditions of labour, provident funds, employees' liability and workmen's compensation, health insurance including invalidity pensions, old age pensions.

Appendix 3 TO BE PUBLISHED IN THE GAZETTE OF PAKISTAN PART-II

Government of Pakistan
Ministry of Environment,
Local Government & Rural Development

Islamabad 26 February 2001

RESOLUTION

1. No. F.6-7/72-IGF/F-I (Vol-III). In supersession of Ministry of Food and Agriculture (Agriculture Wing)'s Resolution No.F.6-7/72-F.I, dated the 10th December 1985, the Federal Government is pleased to reconstitute the Federal Forestry Board and shall be deemed to have been reconstituted with effect from the 17th November, 2000, which shall consist of:

(1)	Minister for Environment, Local Government and Rural Development	Chairman
(2)	Secretary for Environment, Local Government and Rural Development	Vice Chairman
(3)	Secretary Finance Division	Member
(4)	Secretary Economic Affairs Division	Member
(5)	Secretary Planning and Development Division	Member
(6)	Secretary, Food, Agriculture and Livestock	Member
(7)	Secretary, Water and Power	Member
(8)	Secretary Ministry of Kashmir and Northern Areas	Member
(9)	Secretary Ministry of Commerce	Member
(10)	Secretaries or Representatives of Provincial Forest and Wildlife Departments including Northern Areas and Azad Jammu and Kashmir,	Member
(11)	Inspector General of Forests, M/O Environment Local Government and Rural Development	Member Secretary
(12)	Chief Conservator of Forests, one from each Province including Azad Jammu and Kashmir and Northern Areas	Members
(13)	Director General, Pakistan Forest Institute, Peshawar	Member
(14)	Tree Farmers (One from each Province)	Members
(15)	Forest Professionals of outstanding repute (Four)	Members

2. The tenure of members will be for two years.

3. Terms Of Reference. Terms of reference for Federal Forestry Board shall be:

- (a) formulate and review of Forestry Sector Policy, impact analyses of policies of other sectors and removal of constraints and obstacles that continue to impede progress in realizing national goals and policy objectives and future change processes;
- (b) identify sources of financial support and harness them to ensure availability of funding for development programmes in Forestry Sector;
- (c) propose measures, develop plans for improvement of Forestry Sector and promote strategies for sustained increase in forest cover to satisfy the requirement of wood and non-wood forest products for domestic consumption and export; and to meet international commitments/obligations for environmental management, protection of services geared towards forest, watershed, range and wildlife management etc;
- (d) examine long-term potential of Forestry Sector and propose measures to ensure optimum utilization and development of land, water, forest and range resources with a view of promoting welfare and prosperity of dependent communities in particular and country in general;
- (e) provide guidance and overall direction for management practices, developmental thrusts and priorities in Forestry Sector;
- (f) create task forces or committees necessary for sustained development and management of forest, watershed, range-land and wildlife resources, which will analyze trends in

marketing of forest produce, pricing, human resource development, research, development of technologies and structural changes;

- (g) review and assess legislation and management to facilitate preparation and approval of comprehensive reforms suited for sustainable management of Forestry Sector resources;
- (h) assess and review development projects and propose measures for their smooth implementation;
- (i) put in place a system for financing forestry sector programmes on sustainable basis and management of sustainable Forestry Trust Fund;
- (j) approve and recommend forestry sector development programmes and projects out of Forestry Trust Fund; and
- (k) approve Criteria and Indicators (C&I) for Monitoring and Evaluation (M&E) of forestry sector, management, plans, programme and projects.

4. The Board shall meet at least once a year and it may appoint such technical committees consisting of such persons, as it may consider necessary and also have powers to co-opt members.

5. Ordered that a copy of the resolution be communicated to the Provincial Governments and all Ministry and Divisions of the Government of Pakistan.

6. Ordered further that the Resolution be published in the gazette of Pakistan for general information.

(Ghulam Mustafa Kazi)
Deputy Secretary (Admn.)

The Manager,
Printing Corporation of Pakistan
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1. Minister for Environment, Local Government and Rural Development Islamabad
2. Secretary, Ministry of Environment, Local Government and Rural Development, Islamabad
3. Secretary, Finance Division, Islamabad
4. Secretary, Economic Affairs Division, Islamabad
5. Secretary, Planning and Development Division, Islamabad
6. Secretary, Ministry of Food, Agriculture & Livestock, Islamabad
7. Secretary, Ministry of Water and Power, Islamabad
8. Secretary, Ministry of Kashmir and Northern Areas, Islamabad
9. Secretary, Ministry of Commerce, Islamabad
10. Secretary, Forest, Wildlife, Fisheries and Tourism Department,
Government of the Punjab, Lahore.
11. Secretary, Forest and Environment, Government of Sindh, Karachi.
12. Secretary, Forestry, Fisheries & Wildlife, Government of NWFP, Peshawar.
13. Secretary, Forests, Government of Balochistan, Quetta.
14. Secretary, Forests, Government A.J.K. Muzaffarabad.
15. Secretary, Forests, Northern Areas, Gilgit.
16. Director General, Pakistan Forest Institute, Peshawar.
17. Tree Farmers (one from each Province)
18. Forest Professionals of Outstanding Repute (two)
19. Representatives of Forest Industries (four)

(Ghulam Mustafa Kazi)
Deputy Secretary (Admn.)

Appendix 4 EIGHTH FIVE YEAR PLAN (1993-98)

GOVERNMENT OF PAKISTAN PLANNING COMMISSION

JUNE, 1994

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Forestry

43. The total area under forests is estimated at 4.20 million hectares or 4.8 per cent of the total geographical area of the country which is quite inadequate to meet the growing demand for timber and wood, as well as, conservation and protection of the environment. The existing forests are classified as 42.8 per cent coniferous, 37.6 per cent scrub, 7.6 per cent mangrove and 6.5 per cent riverine. Irrigated forests account for 5.1 per cent and linear plantation 0.4 per cent of the area. A long-term goal of the forest policy would be to increase the forest area from the current level of 4.8 per cent to 10 per cent in the next fifteen years.

44. The productivity of forests is low. Some of the important factors for low productivity are, poor regeneration and low stocking of coniferous forests, faulty logging practices, deterioration of soil fertility, inadequate irrigation, poor quality of planting material, overgrazing and demand for arable land for crop cultivation.

45. There is considerable gap between the wood requirement and sustainable supplies. According to the Forestry Master Plan, the requirement for timber and fuelwood in 1997-98 would be 4.29 million cubic meters and 28.70 million cubic meters, respectively. Against these projections, the current estimates of consumption are 3.53 million cubic meters of timber and 26.02 million cubic meters of fuelwood. The deficit is roughly equivalent to a million hectares of land or 2.5 billion fast growing trees for fuelwood alone. However, the forests are capable of producing more wood per unit area as compared to what is harvested under the present system of management.

46. During the Eighth Plan, high priority will be accorded to the development of forestry, watershed and rangelands. Intensive forest management will be carried out on Government forests and farm forestry will be promoted on private lands to meet the growing demand for timber and firewood. The degradation of watersheds will be arrested through afforestation, soil conservation and proper management practices. In case of rangelands, programmes for reseedling of depleted areas with nutritious, high yielding grasses and plantation of fodder trees will be promoted to meet the feed requirement of livestock. A comprehensive Forestry Master plan is under preparation and its implementation will be started during the Eighth Plan. An environment protection project would also be implemented to reduce the degradation of land and water resources and conserve the environment. The physical targets for forestry are given in Table-1.5.

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Table-1.5**Physical Targets for Forestry Sub-Sector**

	1987-88 (Actual)	1992-93 (Benchmark)	1997-98 (Projection)	Annual growth rate	
				1988-93	1993-98
Wood production (000 m ³)	779	832	958	1.3	2.8
Fuelwood (000 m ³)	357	438	505	4.2	2.9
Timber (000 m ³)	422	394	453	(-) 1.04	2.8
Compact plantation (ha)	33 000	46 755	58 000	7.2	4.4
Nursery raising (ha)	375	1 006	1 200	21.8	3.6
Linear plantation (av. km ²)	2 000	1 677	2 000	(-) 3.5	3.6
Distribution of plants (million no.)	180	245	500	6.4	15.3

47. The management of wildlife will be given due attention. Many animal species are endangered because of pressures from hunting, poaching and habitat destruction. A high priority will be given to habitat preservation and restoration in order to ensure conservation of the whole ecosystem including fauna.

Appendix 5 DECISION OF THE CABINET MEETING HELD ON 6-12-2000 REGULATING COMMERCIAL HARVEST OF FORESTS

1. Pakistan has a meager forest cover of 4.22 million ha. (4.8 percent of 88 million ha). About 80 percent of these forests are dispersed in the northern upland watersheds of Pakistan including AJK and N.As. These forests are burdened with multiplying rights of timber, firewood and grazing etc. Forests and trees in watersheds play a significant role to conserve soil and water to enhance life span of Tarbela and Mangla Dams for sustained supply of irrigation water and hydropower generation.

2. With very limited forest cover in Pakistan, the task of sustainable forest management fulfilling the multiple and conflicting needs including ecological protection of highland watershed areas, commercial timber demands and subsistence requirements of local forest communities, demands high level policy commitment coupled with sound and elaborate planning framework, implementation mechanisms and effective monitoring and evaluation systems. These strategic objectives require the following pre-requisites:

- i. Development of a sustainable forest planning and management framework taking into consideration the diverse demands on the existing forest resources; and
- ii. Participation of communities in forest protection, management and development with a view to creating their stake in the forest management system.

FEDERAL CABINET DECISION

3. The Federal Cabinet in its meeting on 06.12.2000 after reviewing the existing situation with regard to forest management approved the following measures to ensure sustainable forest management, rapid afforestation and enforcement of forest laws:

- i. Long-term forest working plans should be prepared in consultation with the local communities and in accordance with the guidelines issued by the Federal Government from time to time. The implementation of the working plans will be reviewed periodically by the Federal Government in consultation with the Provincial Forest Departments. The Federal Forestry Board (FFB) will be activated for this purpose as well as to monitor changes in Forest Cover and to formulate and review Forest Policy, institutional arrangements, etc;
- ii. Commercial felling of trees from any forest area without a sustainable working plan should not be carried out;
- iii. The depleted forest areas should be protected and a programme of afforestation be developed;
- iv. Forest harvest shall only be carried out when funds to regenerate the cut-over area are assured. Reforestation of cut over areas shall be carried out immediately after the completion of felling operations along with strict enforcement of protection measures;
- v. Reserved forests of conifer types are not burdened with rights of the communities. Harvest of trees from these natural forests should be restricted to hygienic felling only through Joint Forest Management Committees where such committees exist. Rights of easement in such forests may be maintained;
- vi. Timber of dead, dry and wind fallen trees should be immediately salvaged. In AJK, about 12 million cft of timber is lying in forests logged by Azad Kashmir Logging and Saw Milling Corporation (AKLASC). No commercial felling of forests in AJK may be undertaken till the timber is salvaged;
- vii. In Northern Areas, movement and disposal of timber will be rationalized in consultation with the office of I.G. Forests to avoid illicit cutting of forests;
- viii. Where private ownership rights in forests are 60% or more, protection/management mechanisms may be left to the communities under legal cover, which will be based on

working plans. Management cost of such forests should be borne by the communities out of income from timber sales. Forest Departments will continue to assist the village communities in preparation of sustainable working plans and to monitor the activities regarding protection and management of their forests;

- ix. A system of forest check posts should be strengthened with the assistance of civil administration and Civil Armed Forces to monitor the movement of timber within the province. For inter-provincial movement of wood, office of IGF will regulate in consultation with Provincial Forest Departments including N.As and AJK;
- x. The forest offenders may be strictly dealt with in accordance with the provisions of Forest Laws. To deal with forest offence cases, schedule of compensation and fines will be revised/rationalized; and
- xi. A system of Monitoring and Evaluation of Forest Management may be established to monitor change in forest cover in consultation with Ministry of Environment, Local Government and Rural Development and Provincial Forest Departments.
- xii. All Government Departments, NGOs, Educational Institutions, Local Communities and Forest owners be involved in afforestation activities so as to increase the forest cover in the country.
- xiii. Institutional strengthening of Forest Department through necessary reforms focusing on transparency, effective enforcement of laws, community participation and strict action against corrupt elements.
- xiv. Progress on implementation of the above decisions will be reviewed by the Federal Cabinet after one year.

Appendix 6 Political Party Manifestos

It is interesting to note the views of Pakistan's Political parties on the conservation, management and development of forest resources. The views of the Pakistan People's Party (PPP), Pakistan Muslim League (PML), and the Islamic Jamhoori Ittehad (IJI) as included in their manifestoes are reproduced below:

Pakistan People's Party

Forest Management.

The main object of forest management policy will be maximum public welfare rather than maximum yield. Short-term profit will not be a parameter in determining forest management policy.

Pakistan Muslim League

(a) Rural Transformation.

Encourage ecological sound development policies to preserve and develop the country's natural land forest resources and provide incentives for farmers to adopt social forestry on a commercial basis, rather than depend on restrictive laws for this purpose particularly in border areas.

(b) Industrial Development.

Provide the full energy needs of an expanding industrial sector.

Encourage the rapid development of small industries particularly agro-based industries in rural areas through fiscal and other incentives and an extended system of promotion and guidance.

(c) Energy

Evolve short, medium and long-term energy plans to ensure that there is adequate supply of energy in the country to support the required expansion in agriculture, industry and transport and to meet growing domestic requirements.

Islamic Jamhoori Ittehad

Agriculture and Rural Development

- (a) A major programme of rural industrialization to provide employment and higher incomes to the rural population.
- (b) A comprehensive programme of environmental protection to conserve and develop the country's land, water and forest resources.