A Review of Forest Policy Trends for Community Participation in Pakistan

Aijaz A. Nizamani and Amjad A. Shah

Sindh Forest Department, Pakistan

Abstract

Pakistan is the second largest economy in South Asia and it is largely dependent on agriculture. Much of the country's economic activities are carried out on the plains or in irrigated areas. Although forests do not figure prominently in national statistics under current systems of national accounting, the economic activities on the plains can be affected by any major disruptions in the forest-dominated ecosystems of the mountains, riverain, irrigated plains, or the mangrove swamps in the south. Since the country's independence in 1947, the government of Pakistan has time and again formulated policies without much substance or room for local participation, possibly as a continuation of its colonial legacy. The first forest policy in Pakistan was introduced in 1955 with an emphasis on forestry serving national economic development. The 1962 policy emphasized that productive forests are commercial entities and it introduced policy objectives for the management of coastal forests. A 1975 policy continued with the old rhetoric, while introducing new initiatives on sectors such as silkworm rearing. Subsequent policies were introduced in 1980, 1988, 1993, and 2001.

Although the 1993 executive order banning the commercial felling of trees turned out to have far-reaching implications for forest conservation and management, Pakistan's forest policies have relied mostly on wishful thinking and lacked achievable objectives, with almost no role allocated for communities to play. These policies failed to properly valuate forests products and services, most notably the critical role that forests play in water yields and water quality, as well as ecosystem management in all mountain, plains, and coastal areas. Policy formulation to date has been dominated by public servants with little input from public representatives, and policies have ranged from being negative to neutral for community participation.

Keywords: Forest policy, Policy evolution, Ban on commercial felling, Public servant-guided process, Community participation.

1. Introduction

Pakistan is among the ten most populated countries in the world, with a geographic area of 307,000 square miles, or 493,963 kilometers (km)—an area more than double the size of Japan—and a population of over 135 million, with a population density of 389 persons per square mile (World Almanac 1998). Forest products and services once thought to be abundant are now known to be scarce in the country; Pakistan suffers far more severe forest scarcities than most countries in South Asia. Its natural forest assets are small, with forest area and national land utilization figures ranging from 3.1 percent (State of World Forestry 2003) to 3.6 percent of total land area (Akhtar Hameed Khan Centre for Rural Development 2002). Forest or woodland area per person is one of the world's lowest—one-thirtieth of a hectare (ha)—and most forests are slow-growing. Yet Pakistan's demands on its forests and other natural resources are high. The population is growing at 2.3 percent annually (Human Development in South Asia 2002), adding a population the size of San Francisco each year. With a relatively high industrial growth rate of about 6 percent and huge construction needs, Pakistan continues to put increasing demands on its forests for timber, fuelwood, and water.

About 4.2 million ha of Pakistan is under forests and planted trees, which is equivalent to 4.8 percent of the total land area. Eighty-five percent of this is public forest under the legal categories of state reserve and state protected forests, which has implications for community rights and user participation. Over 40 percent of these forests are coniferous and scrub forests on the northern hills and mountains. The balance is made up of riverine forests and irrigated plantations along the Indus River and its tributaries on the plains, mangrove forests on the Indus Delta, and trees planted on farmland. The total area under the control of provincial forest departments in Pakistan is 10.06 million ha, of which 6.1 million ha is rangeland (State of Forestry in Pakistan 1999/2000).

Table 1. Estimates of forest/trees area (thousands of ha)

Forest/tree cover class	Azad Jammu Kashmir	Baluchistan	Northern areas	North West Frontier Province	Punjab	Sindh	Total
Coniferous forests	241	42	660	940	30	—	1913
Scrub forests	16	504	—	539	132	—	1191
Riverine forests	1	20	—	13	27	112	173
Mangrove forests	—	2	—		—	205	207
Irrigated plantations	—	1	—	—	79	23	103
Farmland trees	7	23	6	70	306	54	466
Linear planting	—	—	—	2	14	—	16
Misc. planting	10	—	—	120	20	5	155
Total area	275	592	666	1,684	608	399	4,224
Geographic area	1,330	34,719	7,040	10,174	20,626	1,4091	87,980
% tree cover	20.7	1.7	9.5	16.6	2.9	2.8	4.8

Source: Forestry Sector Master Plan Government of Pakistan, 1992.

The systems of national accounting do not properly valuate forestry services, with sector contributions shown as only 0.2 percent of gross national product (GNP). This does not include the environmental services provided by watersheds in Pakistan's northern mountains for water yields, as well as the immensely important role of trees in maintaining the precious soils on the irrigated plains, where over 90 percent of national crop value is produced (Irrigation planning with environmental considerations, World Technical Study 166, 1992). Forest products include 3.5 million cubic meters (m^3) of timber and industrial wood produced annually, as well as fuelwood that meets 32 percent of national energy needs. Forests and related industries employ 500,000 workers involved in activities ranging from logging to village carpentry and making timber components for the construction industry (Forestry Sector Master Plan 1992).

2. FOREST TYPES IN PAKISTAN

2.1 Natural forests

The natural forests in Pakistan, to a large extent, depend on the hydrological cycle of the Indus River, starting 2,000 km upstream in the north of Pakistan, bordering China and Tibetan Himalaya, and flowing through parts of Kashmir to the southern most delta of mangrove forests along the Arabian Sea near the port city of Karachi. Between these two distant forest ecosystems lies yet another natural marvel—the riverine forests. Following is a brief description of the types of natural forests in Pakistan (both Indus River systems as well as non-Indus systems).

2.1.1 Mountain and foothill natural forests

a) **Coniferous forests.** These make up the bulk (55 percent) of natural forests in Pakistan (State of Forestry in Pakistan 2001). The natural range of these forests begins below the glaciers and grasslands between elevations of 900 to 3,800 meters, located along the lower ranges of the Himalayas and Hindukush in the north.

b) **Sub-alpine and Himalayan temperate forests.** The tree species growing here are *Abies pindrow* (fir), *Pinus wallichina* (blue pine or kail), *Picea simithiana* (spruce), and *Cedrus dodara* (deodar). Broad-leaved species include *Betula utilis* (birch), *Aesculus* indica (chestnut), *Junglans* regia (walnut) *Populus* spp. (poplar), *Quercus* spp. (oak), *Acer pictum* (maple), and *Prunus padus*.

The forests of North West Frontier Province and Azad Jammu Kashmir are managed under the selection system, based on long rotations of 100 to 120 years and regeneration periods of 20 to 30 years. Mature trees over 60 centimeters in diameter and dead and dying trees are removed to make way for established regeneration underneath. These forests are largely state reserve forest with no rights assigned unless specifically allowed. The private forests in these areas are managed under working plans prepared by forest departments with strict rules on cutting and regeneration.

c) **Sub-tropical chir pine forest.** These forests are found at lower elevations than the moist sub-alpine and Himalayan temperate forests. This forest type is less diverse in species, with *Pinus roxburghii* (chir pine) and *Quercus* (oak) species predominating. Chir

pine forest is managed under the uniform shelterwood system, in which its canopy is opened up uniformly and gradually over the area of a whole section. At final felling, 20 seed trees per ha are left to provide seed for natural regeneration. Once this is established, the seed trees are removed. Private forests in this ecosystem are also maintained under the uniform shelterwood system with forest management plans made by the respective provincial forest departments. The community has no legal rights in the chir pine reserve forest areas.

d) **Dry subtropical broad-leaved forest.** These forests are found on the foothills and lower slopes of the Himalayas, Salt Range, Kala Chitta, and the Sulaiman Range. They represent a transition between the hill forests and the thorn forests on the plains. There are many species here, but the three main ones are *Acacia modesta*, *Olea ferruginea,* and *Acacia nilotica*.

e) **Dry temperate coniferous forest.** These forests occur in the winter rainfall mountains of the northern areas, bordering India and China in the north, and on the cold, dry Baluchistan plateau in the west, bordering Afghanistan. Their main species *Juniperus exelsa* (juniper), *Pinus gerardiana* (chilghoza), and *Quercus ilex* (oak) grow slowly and do not regenerate easily in this dry climate. Remnants of juniper forest around Ziarat in Baluchistan form a unique ecosystem growing in calcareous soils at an elevation of 3,000 meters with rainfall as little as 300 millimeters.

2.1.2 Riverine forests

Riverine forests mostly grow along the Indus River in the Punjab and Sindh and along its main tributaries in the Punjab: the Jhelum, Chenab, Ravi, and Sutlej. Their existence depends on natural annual inundation between June and September, not only for water but also for the alluvial silt that provides rich nutrients for tree growth. The main species are *Dalbergia sissoo* (shisham) in Punjab, while *Acacia nilotica* (babul/kikar) and its associate species *Populus euphratica* (bahan), *Tamarix dioica* and *Prosopis cineraria* (Kandi), are predominant in Sindh. *Prosopis specigera* and other xerophytic species colonize higher-elevation areas now less frequently flooded. The entire area is designated as reserve forest with no legal rights provided for local communities and their participation.

2.1.3 Mangrove forests

The mangrove forests in the Indus Delta are the sixth largest in the world, occupying nearly the entire southeastern coast in Sindh province from north of Karachi to the Indian border in the southeast. To a much lesser extent they occur along the Baluchistan coast. Due to being subjected to human pressure and ecological changes, however, Sindh's mangrove forests have been irreversibly degraded. By comparison, those in Baluchistan are in almost pristine condition.

The mangrove ecosystem supports a complex marine food chain and a large seafood industry, comprising shrimp and fish products, which annually earns over US$70 million from overseas exports. Regional ecological changes and selective heavy exploitation, however, have already depleted tree cover, caused stunted growth, and eliminated three of the original eight tree species. According to the latest international publications, the mangrove forests in Pakistan have shrunk from 345,000 ha in 1980 to 176,000 ha in 2000 (State of World Forests Report 2003). Unlike reserve forests, mangroves are protected forests, with full community rights of grazing and fodder collection unless prohibited.

Diminished freshwater flow from the Indus River into the estuary has caused salinity along the coast to rise above what some mangrove species could tolerate, and loss of silt from the Indus has deprived the mangroves of their main source of nutrients. Of the five species still remaining, one species, *Avicennia marina* (timer), is 90 percent dominant.

2.1.4 Man-made forests

Man-made forests in Pakistan include plantations established on regular irrigation supplies of canal water. The irrigated plantations of the Punjab were originally established in the 1800s to provide fuel for colonial railways. Fuelwood is still the main output, but plantations are now managed for the production of wood for quality furniture and a variety of other industrial uses, including sporting goods. The irrigated plantations are the mainstays of the Punjab province's forest economy, while in southern Sindh province they take second place in importance to riverine forests.

3. Forest policy evolution in Pakistan

Pakistan, like any developing country, is at the bureaucratic stage of policy formulation. National development policies are conceived and planned by public servants rather than public representatives. Apart from vested interests and corruption, the policies are aimed at protecting the institutional interests of the department or the organisation as an end in itself, with the welfare of the people and sustainability of the resource taking a lower or zero priority.

Pakistan's forest policy has suffered from lack of proper reforms, and maintaining the status quo has been the main theme of the country's forest policies. Public sector institutions consider policy changes a lengthy, painstaking, and expensive job, and they lack the funds and the incentive to change them. In addition, any change could mean challenging the existing status quo, which is guarded by interest groups from within the same institutions.

Community participation can improve the management of forest resources if participation is broadly based, beginning at the planning stage, and involves real devolution of authority. Participation processes will be needed in resolving the two principal problems facing forests and people in Pakistan. First are the legal and institu-

tional problems that give local populations little incentive to improve forest conditions and instead lead to the overuse of forests. The principal change required here is in attitude on the part of government towards public participation in the policy formulation process. Second are the economic and political interests that stand in the way of ensuring that those locals with forest-use rights can exercise them and gain their full benefits. Here, entrenched interests both in forest departments and on the part of concessionaires still block progress.

Public participation should proceed in a supportive policy environment that properly values the environmental services provided by forests; in Pakistan's context, the most important are watershed services that yield water for irrigating over 40 million acres (16 million ha) of land downstream that contribute one-quarter to the country's $274-billion national gross domestic product (GDP). The environmental and economic values of other forest-based ecosystems, such as the mangroves in the Indus Delta, need to be studied and ascertained with the support of international research institutes for proper resource allocation and sustainable management.

3.1 The forest policies of Pakistan

The preparation of forest policies in Pakistan began right after the nation's creation. The first Forest Policy Resolution was declared in 1955 and then revised and updated in 1962, 1975, 1980, and as late as 1988 as part of the National Agricultural Policy.

A detailed literature review of Pakistan's forest policies, however, does not reveal any details on the process and methodology followed to frame them. We can only assume that all policies have been created with minimum consultation and whatever consultation that has taken place is at the government's intra-institutional level. It is therefore viewed as non-participatory and out of context.

It is critically important for sustainable forest management to identify local user groups and involve them in policy planning. This could be a major tool for the development of local communities and a prerequisite for effective, sustainable forest policy in Pakistan. Following is a brief analysis of the forest polices tried so far in Pakistan.

3.1.1 Forestry Policy Resolution of 1955

Adopted by the Constituent Assembly after eight years of Pakistan gaining independence, the first-ever forest policy made forestry programmes subservient to national development plans. Among other things, it emphasized the need to provide technical and financial assistance to private owners of forestlands and stipulated that 10 percent of the canal irrigated lands on the plains be designated as forest plantations. Most significant was the exclusion of any mention of coastal or mangrove forests. The following are the policy's elements or most salient features:

- Give high priority to forestry programmes in national development plans.
- Ensure sound management of privately-owned forests by legislation or other means, and provide technical and financial assistance for this purpose.
- Obtain power to control land use under a coordinated programme of soil conservation in areas where soil erosion is rampant or likely to occur as a result of defective cultivation practices.
- Enlist public support through education and extension for the conservation of forests.
- Classify forests on the basis of their utility and management objectives.
- Subordinate commercial aspects of forestry to its role in the economic development of the country.
- Undertake a bold programme of increasing forest area by methods most appropriate to local conditions. For West Pakistan, the following points were outlined:
    - o Reserve at least 10 percent of canal irrigated land for plantations in new colonies.
    - o Plant trees along canals, roads, railway tracks, and on arable wastelands.
    - o Encourage farm forestry by village communities on compact blocks of cropland on a co-operative basis.
    - o Develop existing forests by encouraging the most economic utilization of timber and other forest products.
    - o Manage all forests under working plans to ensure sustained yields.
    - o Create a properly constituted forest service staffed by trained personnel responsible for the execution of the forest policy.
    - o Organise forestry research and education.
    - o Afford adequate protection to wildlife and maintain their forest/habitat.

Source: Unpublished government papers, 1955.

3.1.2 1962 Policy Directive on Forestry, Watershed Management, Range Management and Soil Conservation

The 1962 forest policy had different objectives of specialization, such as forestry, farm forestry, and watershed management. Compared to the 1955 policy, this one looked for ways and means to manage each forest as a commercial enterprise and to increase utilization efficiency and reduce rotation age, including the stipulation that each landowner should grow a specific number of trees. The policy aimed to reduce the rights of local communities and called for the creation of a central forestry board, as well as the physical fencing-off of forests. Coastal forests and range management were mentioned in the policy objectives for the first time. The following sections contain the translated text of the policy.

a) Forestry

- Examine ways of managing each forest as a commercial tree farm under working plans for maximizing the yield of timber and fuelwood, and protect them effectively from threats such as fire.

- Undertake studies to reduce the length of rotations, ensure prompt regeneration, and improve techniques of wood utilization.
- Transfer to the forest departments the government-owned wastelands for afforestation and government-owned lands along canals, roads, and railway tracks for planting trees unless already planted.
- Start pilot projects in low rainfall zones to develop techniques for their afforestation.
- Include irrigated plantations in new colonization plans to the extent determined by the Government of West Pakistan, primarily for producing industrial wood.
- Enact legislation to secure a national effort for tree growing and require each landowner to grow a specified number of trees per unit area of landholding.
- Constitute a working party to prepare programmes for accelerating the pace of timber harvesting, transportation, and regeneration in the Chittagong Hill Tracts and Sundarbans forests (now Bangladesh).
- In West Pakistan, study the feasibility of afforesting riverain lands in consultation with the Flood Commission.
- Start pilot projects to determine grazing capacities of forestlands in various ecological zones.

b) Farm forestry

- Make farm forestry the concern of existing agricultural departments in non-project areas and of the Agriculture Development Corporation in project areas. Conduct research to select fast-growing tree species from various ecological zones for planting on shelterbelts and windbreaks, and on planting trees on saline and marsh lands.

c) Watershed management

- Make forest departments responsible for ensuring soil conservation in forests under their control. For soil conservation on private land, entrust the responsibility either to the Agriculture Development Corporation or to a specifically-constituted soil conservation organisation comprising personnel from all the concerned disciplines (forestry, agriculture, animal husbandry, cooperatives) and require the preparation of watershed management programmes along the following lines:
    - Survey entire watersheds.
    - Gradually shift people from mountain areas to new canal colonies.
    - Supply electricity to hill populations, where possible, and subsidize kerosene oil stoves.
    - For monitoring the programme of forestry development, revive the Central Board of Forestry.
    - In the provinces, review forest organisations and formulate proposals for making necessary changes.
    - If needed, amend forest laws to make them more effective by enhancing penalties and removing procedural hurdles.
    - Extend the Pakistan Forest Act to the Malakand Civil Division of North West Frontier Province and examine possibilities for its application to the northern areas.
    - Appoint special forest magistrates for expeditious addressing of over 150,000 pending forest offence cases.
    - Start timber harvesting by forest departments instead of selling standing trees to forest contractors until public sector corporations are established for this purpose.
    - Review forest management (working) plans to make them more efficient and comprehensive.
    - To prevent the destruction of natural vegetation in the mountains, concentrate scattered populations in centrally-located villages, construct houses in such villages and provide them on a rent or purchase basis to the local inhabitants. Locate wood-based industries in forest areas to redirect the attention of mountain populations from the theft of forest trees to legal and productive activities.
    - Launch massive programmes of planting fruit trees in the mountains, supported by the free supply of planting stock and suitable subsidies to cover costs of land development and planting. Start an ambitious programme of soil conservation to prevent soil erosion and to generate employment.
    - Fence-off forests to prevent human and livestock damage. Subsidize cooking stoves and kerosene oil for the mountain people in order to reduce pressure on forests for firewood. Plant trees in all areas under the control of forest departments and in the compounds of all government buildings. Consider acquiring unculturable land along riverbanks for planting. Complete tree planting on all plantable stretches along roadsides, canal banks, and railway tracks.
    - Promote farm forestry through extension. Stipulate that village bodies require residents to plant trees around their homesteads.
    - Implement the range management programme formulated by the National Committee.
    - Prepare a plan for planting coastal areas as extensively as possible.

Source: Policy directive on forestry, watershed management, range management and soil conservation, 1962, Government of Pakistan.

3.1.3 1975 Decision of the Council of Common Interest

This policy continued in almost the same mode of progressive reduction of local participation as the previous one. It mentions as one of its objectives to "extin-

guish the rights of local people" and to establish new, specialized forestry aspects like silkworm rearing. It also called for environmental planting on slopes over 50 percent. The following outlines the details of the 1975 policy:

- Expedite implementation of the government decision to entrust timber harvesting either to forest departments or autonomous bodies.
- Improve timber-harvesting methods for better regeneration and to reduce timber wastage and damage to soil.
- Increase forest productivity through introduction of fast-growing tree species and wider use of artificial regeneration using high-quality nursery stock. Extinguish the rights of local people in forests. Make alternative feasible arrangements for meeting the bonafide requirements of the use-right holders. Provincial governments may consider providing adequate quantities of water for irrigated plantations.
- Investigate the feasibility of providing increased water supply to riverain forests by lift or tubewell irrigation.
- Arrange adequate water supply for linear plantations. Locate forest industries as close to forests as possible to reduce the pressure of people on adjoining forests and to provide them employment and increased income.
- Provide funds to forest departments for developing plantations for meeting the needs of wood-based industries.
- Encourage silkworm rearing on a cooperative basis and the creation of special mulberry plantations, provide training facilities and disease-free silk seed, and arrange for product marketing.
- Launch a massive drive for fruit tree planting in suitable mountain areas. Supply seedlings at nominal cost and provide assistance for the construction and improvement of terraces.
- Entrust management of privately-owned forests to cooperative societies, with technical assistance and guidance provided by forest departments and timber harvesting by public sector corporations.
- Encourage farmers to plant trees on their land at suitable locations, such as around village habitations and tubewells, without obstructing the flight paths of plant protection aircraft. Forest departments should continue to provide plants and technical assistance to farmers.
- Since existing forest legislation provides adequate powers to governments to take measures to arrest soil erosion in the hills and to restrict cultivation on slopes exceeding 50 percent, emphasize positive measures such as watershed management, afforestation, and education of farmers, and use negative legal sanctions as a last resort.
- Since both the forest and agriculture departments have a role to play in soil conservation, delimit areas for each in accordance with the nature of the problem.
- Do not permit deforestation of wooded areas.
- The governments of North West Frontier Province and Baluchistan may consider creating separate forest departments at the secretariat level, in order to focus specialized attention on specific problems of forestry. Also strengthen the forestry set-up of the federal government.
- Transfer linear plantations to forest departments.
- Strictly enforce forest laws and appoint special forest magistrates to reduce the occurrence of forest offences.
- Transfer control of the Pakistan Forest Institute, Peshawar, from its board of governors to the Ministry of Food and Agriculture of the federal government.
- Orient forest education towards producing specialists in different fields.
- Further liberalize provisions for advanced education abroad for forest officers.
- Step up research by the Pakistan Forest Institute on introduction of fast-growing species, problems of watershed management, and demand and supply of forest products.

Source: Unpublished government policy papers, 1975.

3.1.4 1980 Relevant Provision of National Agricultural Policy

The 1980 policy mentioned a focus on fast-growing tree species as a new objective or element and the production of industrial wood as part of the government's plan. The following are the elements of the policy:

- Launch a bigger thrust on planting fast-growing tree species in areas outside forests.
- Grow fuelwood plantations in areas of wood scarcity on wastelands through motivation of people including the use of incentives.
- Make effective arrangements for motivating people to participate in massive tree planting and nature conservation.
- Manage wild lands in accordance with their potential for optimum utilization in various forms, including recreation and wildlife management.
- Harvest timber through public sector corporations or by forest departments, using modern methods.
- Increase production of industrial wood to progressively meet the full requirement of wood-based industries.
- Coordinate and integrate development of forestry and wood-based industries.

Source: Unpublished papers of the Government of Pakistan, 1980.

3.1.5 1988 Recommendations of the National Commission on Agriculture

This policy came into being as a result of a commission constituted by the government to improve agriculture; an earlier agriculture commission was formed in 1959. The 1988 commission called for higher-level posi-

tions for forestry and watershed management personnel and in its policy called for the creation of a long-range policy for the management of forestlands in Pakistan and the establishment of a watersheds and arid lands development authority under the Ministry of Food and Agriculture (National Commission on Agriculture 1988).

3.1.6 1993 Policy Banning the Commercial Felling of Trees

This policy came in the form of an executive order by the caretaker government in 1993. Although it can be said that all Pakistan's forest policies came into being without following proper processes (and the 1993 policy is not an exception), this policy, which consisted of a single piece of paper, may have been the most far reaching. Initially it ordered a complete ban on commercial forest exploitation for two years. The ban was successively extended by following governments and was still in force until 2001. Although the policy had a neutral impact on communities, owners of private forests in North West Frontier Province were said to have been unhappy with it.

Source: Unpublished record of Government of Pakistan, 2002.

3.1.7 2001 National Forest Policy of Pakistan

The most recent forest policy under consideration of Pakistan's federal government is the 2001 National Forest Policy. The process has been initiated but has not yet been completed. Its goal is to foster the sustainable development of Pakistan's renewable natural resources, the maintenance and rehabilitation of its environment, and the enhancement of sustainable livelihoods of its rural population, especially women, children, and other minority groups.

The following is a list of the 2001 forest policy objectives under consideration:

- Reduce negative socio-economic impacts.
- Reduce political interference in forestry and wildlife departments.
- Renovate and re-invigorate the institutions involved in the management of renewable natural resources.
- Support local governments in the sustainable development of their renewable natural resources.
- Institute policies to protect fragile ecosystems.
- Improve and sustainably manage riverine forests and irrigated plantations.
- Achieve the preservation of old-growth and other unique forests.

Source: Unpublished record of Government of Pakistan, 2002.

4. Conclusion

The existing situation in Pakistan on the forest policy front calls for a complete turn-around in the approach to policy formulation. In general, the objectives of a policy are a direct outcome of the processes followed to frame it, and in Pakistan there are multiple users of the forest and its products, and forest uses vary in scope and nature. Large communities residing close to forest areas often depend on them for their survival, while others use forests for commercial purposes only, and yet another large portion of the population does not use forestlands directly but is influenced by them in one way or another. The last category includes people living below watersheds, institutions such as government wildlife departments, and the international community concerned about global environmental issues. Pakistan is a signatory to many international treaties that hold it responsible for managing its natural resources, particularly its forests, in a certain manner. Thus forest policy should incorporate the binding agreements made with the international community. All these various parties are considered stakeholders in national forest reserves, and their concerns and opinions should be reflected in policy objectives. Only then will Pakistan be able to safeguard the integrity of its environment and conserve its forests in all ecologically valuable areas of the country.

References

Akhtar Hameed Khan Centre for Rural Development. 2002. Statistical Highlights of Pakistan, Ministry of Environment, Local Government & Rural Development, Government of Pakistan, Islamabad.

Human Development in South Asia. 2002. Agriculture and Rural Development Mahboob-Ul-Haq Human Development Centre, Pakistan.

National Commission on Agriculture (NCA). 1988. Ministry of Fisheries, Agriculture and Livestock, Government of Pakistan.

Policy directive on forestry, watershed management, range management and soil conservation 1962, Government of Pakistan.

State of forestry in Pakistan, 1990. Pakistan Forest Institute, Peshawar, Ministry of Environment, Local Government & Rural Development, Government of Pakistan, Islamabad.

State of World's Forests. 2003. Food & Agriculture Organization (FAO) Rome.

World Almanac. 1998. The World Almanac and Book of Facts, Reference Cooperation One International Boulevard, Suite 444 Mahawah, New Jersey USA.

Unpublished forest policy papers. 1955. Government of Pakistan.

Unpublished forest policy papers. 1980. Government of Pakistan.

Unpublished forest policy papers. 2002. Government of Pakistan.