

Shifting regime shifted policy—interplay of interests in sustainability discourses of forest land use

Mohammad Ali · A. T. M. Rafiqul Hoque

Received: 13 October 2007 / Accepted: 18 August 2008 /
Published online: 9 September 2008
© Springer Science + Business Media B.V. 2008

Abstract This study investigates the influence of policy interests on resource sustainability. Information on ‘colonial interest’ of the British regime and the ‘commercial interest’ of the post-colonial regimes on forest land use of Bangladesh have been drawn on to show the interplay of interests on sustainability impacts. The findings show that both colonial and commercial interests have caused intensification of forest land use for production of economic crops like teak (*Tectona grandis*) and cash crops like tea (*Camellia sinensis*), cotton (*Gossypium herbaceum* and *G. arboreum*) and tobacco (*Nicotiana tabacum*). The ‘colonial interest’ has also initiated the dispute of ownership, rights and tenure of forest land and resources. The post-colonial regimes have utilized colonial legacy as the privilege for implementing ‘commercial interests’. In both the cases traditional interests of people were disregarded. As a result, peoples’ participation in forestry was discouraged and the sustainability of forest land use was impeded.

Keywords Colonial interest · Commercial interest · Bangladesh forestry · Forest policy · Peoples participation · Policy interest · Regime change · Sustainability and tradition

1 Introduction

Sustainability concerns stem out from the work of Thomas R. Malthus (1798) ‘An Essay on the Principle of Population’. Afterwards, surges of discussions on ‘Malthus’ and ‘neo-Malthus’ theories including the Club of Rome’s Limit to Growth models have focused on scientific and

M. Ali
Department of Environmental Science and Management, North South University, Dhaka, Bangladesh
e-mail: mohammadali@northsouth.edu

A. T. M. Rafiqul Hoque
Institute of Forestry and Environmental Sciences, University of Chittagong, Chittagong 4331,
Bangladesh

A. T. M. Rafiqul Hoque (✉)
Laboratory of Ecology and Systematics, Biology Division, Faculty of Science,
University of the Ryukyus, Okinawa 903-0213, Japan
e-mail: atmrafiqul@gmail.com

technological dimensions of growth and innovations for explaining the adaptation of people to limits of resources. However, the sustainability concerns have got a political dimension since the inception of Brundtland Commission Report (1987). Although the famous definition of Brundtland Commission (WCED) on sustainability has got a link between meeting the present needs and the assurance of future supply, the carapace of the 'past' remained obscured. As a result, the sustainability concerns though demonstrated a paramount progress on resource-base issues, have not received much criticism from political foundation.

Expression of changes in political foundation has been dedicated in literature as the theories of monarchism, imperialism, colonialism, neo-colonialism, socialism, capitalism, regionalism and globalisation. Adoption of these transformations in political paradigms was accompanied with changes in states and regimes, which in this article have been termed as 'regime shift'. The regime shifts have entertained some kinds of changes in policy adaptation for justifying resource and social planning which have been termed here as 'policy shift'. Thereby, this article attempts to introduce the influences of shifting regimes and the shifted policies within the sustainability debates through bringing the case study of past forest land use policies of Bangladesh that demonstrates how the interplays of shifting regimes and policies from colonial regimes to independent states have a profound impact on sustainability concerns of forest resources.

Before starting analysing policy related contention it is important to see what is the past and present status of Bangladesh Forestry. There is no data on forest status of present Bangladesh at the time of onset of British policy. However, Stebbing (1921) quoted from the travelling report of great Chinese traveller Fa-I-tan, who travelled through India in fourth century, that most of India was covered with forests. Brandis (1897), the founder of British forestry in India, has mentioned in his reconnaissance memoir that people were integral part of Indian forests. He said—

We constantly come across evidences... fruit trees, ruins of large buildings and terraces of old fields ... that the land had been under cultivation.

From these historical expressions it is understandable that present Bangladesh, with its favourable monsoon climate, was very resourceful and forest was everywhere. However, present status of Bangladesh forestry is a sunken symbol of sustainability struggle with a very small area of forest cover facing the pressure of huge demand of large population. The total forest land is only 2.3 million hectares, 16% of total land, but the covered area is only 6–7% (Ahmed 2000). The demands of 120 million people need to be supported from this small forest. Davidson (2000) reported that forests of Bangladesh are degraded due to the pressure of people. Ali et al. (2006a) stated that the decrease of forest area can be taken as the footprint of increased population and their dispersion. On the other hand, many government reports (e.g. GOB 1995) claim that forests are expanding on marginal lands and homesteads through participation of people in forestry activities. The exhibit of contradicting statements about the contentious participation of people in forestry displays that some forces of interests have been working in the pursuit of a sustainable identity for forestry of Bangladesh, for which, it is important to know how past policy interests have failed to address the sustainability issues.

However, Forest Department official site provides information regarding the land and forest area of Bangladesh. Of the total area of Bangladesh, agricultural land makes up 65% of its geographic surface, forest lands account for almost 17%, while urban areas are 8% of the area. Water and other land use account for the remaining 10%. The total forestland includes classified and unclassified state lands and homestead forests and tea/rubber gardens. In case of private forests, the data represent the tree-covered areas. Of the 2.52

million hectare Forest Land, Forest Department manages 1.52 million hectare which includes Reserved, Protected and Acquired forest and Mangrove forest on the newly accreted land in estuaries of major rivers. The remaining 0.73 million hectare of land designated as Unclassed State Forest (USF) are under the control of Ministry of Land. Village forests (homestead land) form the most productive tree resource base in the country and accounts for 0.27 million hectare (Table 1; Bangladesh Forest Department 2008). A latest map showing forest coverage of Bangladesh is shown in Fig. 1. Banglapedia also provides the authentic and latest information regarding the total forest area in Bangladesh including unclassified state forest land is about 2.25 million hectares. A large part of the area, however, has no tree cover. Over the last three decades, forest cover declined by 2.1% annually. Village groves or village forests play a very important role in the economy of the country. The area covered by village groves or forest is estimated to be about 0.27 million hectares. This is not forest as per definition. However, in the Bangladesh context this tree cover is very significant in many ways. Tea garden is another category which needs mention. A good quantity of tree resources is available within the tea garden. The tree cover areas of tea gardens are fast depleting. Approximately 2,800 ha. are available under this kind of tree cover, and distributed in Chittagong, Sylhet and Rangamati. A third category of forest which is fast emerging is the plantations on non-forest public land, such as road side, railway embankment, and canal banks. These marginal land plantations in one way are

Table 1 Area distribution of different land use category

Land Use Category	Area (Million Hectare)	Percent
Agriculture	9.57	64.9
State Forest		
Classified		
Hill Forests	0.67	4.54
Natural Mangrove Forests	0.60	4.07
Mangrove Plantations	0.13	0.88
Plain Land Sal Forest	0.12	0.81
Classified Total	1.52	10.3
Unclassified	0.73	5
Private Forest		
Homestead	0.27	1.8
Tea/Rubber Garden	0.07	0.5
Urban	1.16	7.9
Water	0.94	6.4
Other	0.49	3.2
Total	14.75	100
Total Forest Land of Bangladesh		
Category of Forests	Area (Million Hectare)	Percentage
Forest Department managed forests	1.52	10.30
Unclassed state forest	0.73	4.95
Village forest	0.27	1.83
Total	2.52	17.08

Source: Bangladesh Forest Department (2008); data checked on 2.56 AM, Japan Time, 29.07.2008)

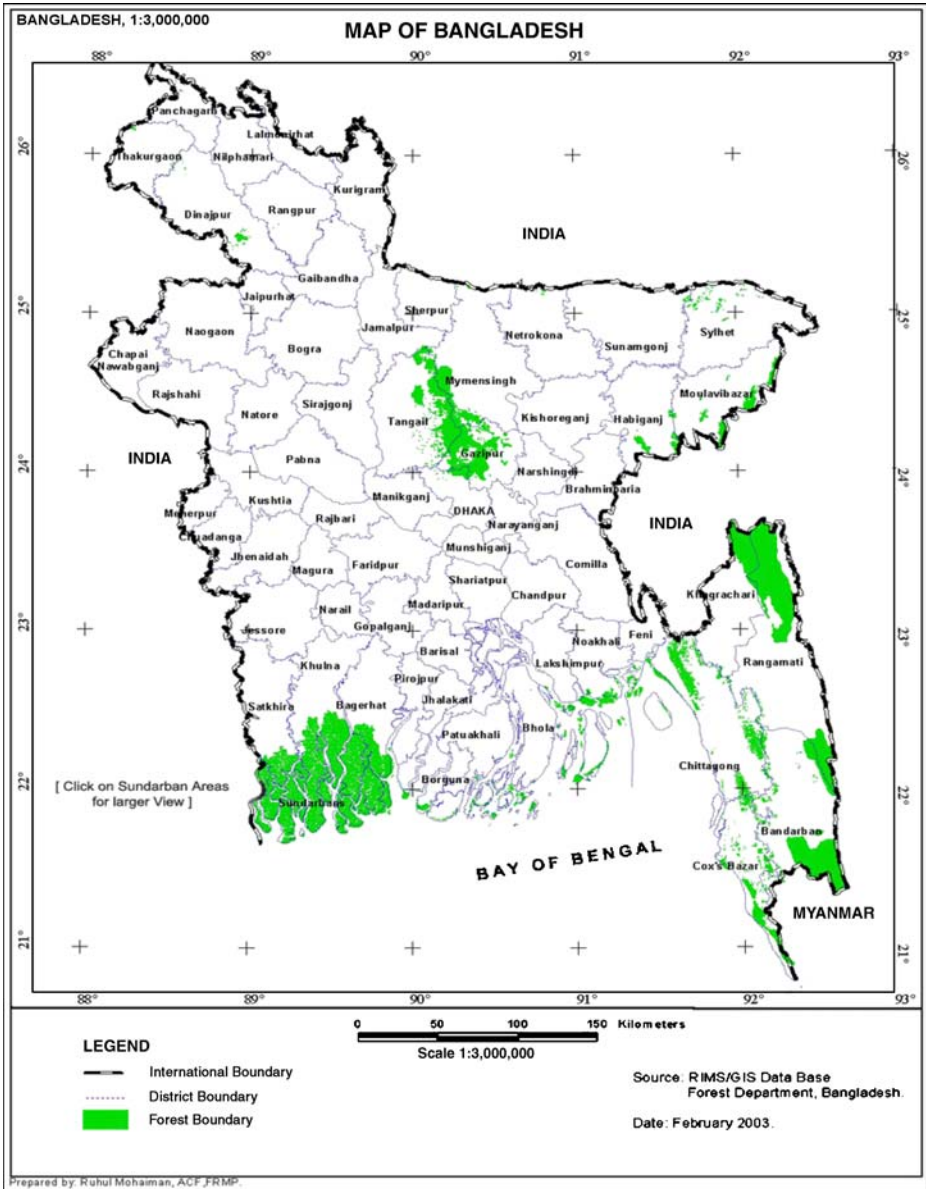


Fig. 1 Forest coverage of Bangladesh (Source: Bangladesh Forest Department 2008)

substituting for the decreasing village forests, and are adding a new dimension to fallow land utilization. The state owned forests of Bangladesh are distributed in three zones: (a) Hill forests in the greater districts of Chittagong, Chittagong Hill Tracts, and Sylhet; (b) Inland forests in the central and northern zones; and (c) Littoral forests in the delta and coastal regions (Anonymous 2006)

This pursuit of sustainability identification in Bangladesh forestry is not an isolated attempt from the global endeavour of adaptation to a sustainable situation. Existing situation of state responses to global protocols demonstrates how the interests of economic

dominance and political hegemony affect the quest of global sustainability. Kumari (1996) has stated that forest land use of developing countries of the present world is mostly affected by the narrow concerns of past policies. Researchers such as Guha (1989), Saldanha (1998) and Kathirithamby-Wells (1998) have outlined specific cases of colonial tyranny in South and South-east Asia. They observed that the forest policies introduced by colonials were alien to the colonised societies, and thus there was a shift of community intention and interest of resource control. Present Bangladesh, as a part of greater British India, was under active administration of Indian Forest Service and thus forest land use of Bangladesh could have been affected in similar ways of other parts of South Asia. However, during the post colonial regimes the condition of the forest land and the forest people of Bangladesh had not been improved much. Therefore, it is reasonable to assume that although the regimes have changed, the forest interests of the policies of the British regime and the post-independence regimes of present Bangladesh did not change much to serve the causes of the people and to improve the sustainability situation of forest environment. The main objective of this study is, therefore, to make an investigation into the interest of the policies of British regime and that of the post-colonial regimes to configure the political interplay of forest management for sustainability.

The interest of administration on forest resources has a genesis, however, formally vested as a policy interest since the introduction of scientific forestry during the British rule in Bangladesh (Ali 2002). The blame to the policies of British regime was that the people were alienated from the forest to serve the interest of the administration, which Chandran (1998) termed as 'Colonial interest'. Khan (1998) considered that the legacy and orientation of post-independent administration did not change much from that of the British period. As a result, during the post-colonial period a similar blame came to the independent regimes that the state departments were depriving people from enjoying traditional benefits from the forest and thus continued to keep people alienated from the forest (Ali et al. 2006b). Following Bhuiyan (1984) this article adopts the term 'commercial interest' for presenting the post-colonial interests. Therefore, while peoples' pressure is popularly blamed for degradation of forest sustainability, the assumption of this study is that there could have potential role of both colonial and commercial interests in configuring the present status of sustainability of forest land use. This article investigates the comparatives between colonial and commercial interest to explore how they have deprived the people from enjoying their age-old forest rights and how those interests have affected the participation of people for sustainability of forest land use.

2 Materials and methods

The methodology of this study was set assuming that a story line of specific linkages of policy stimuli to the social and physical phenomena of working issues of sustainability may produce the discourses of community participation and pressure on resource use. The study method mainly targets to link the story line of forest land use to the specific period of administration so that the interests of the administration to forest land use can be configured. The story line was constructed from the historical information of forest administration available in the published materials and preserved in the archives. Peoples' participation and pressure to forest land use were constructed from the information obtained by interviewing old people and by observing forestry practices in the field. The information is enriched by the personal experience of the authors as insider participant of Bangladesh forestry.

For historical information, archival search was made in Indian Institute Library of the Oxford University, special collections of Aberdeen University Library, collections of Bangladesh Forest Department (BFD), Bangladesh Forest Research Institute (BFRI), Bangladesh Forest College (BFC) and the Institute of Forestry and Environmental Sciences of Chittagong University (IFESCU). Also the *Indian Forester*, *Indian Forest Records* and *Indian Forest Bulletin* of late nineteenth century and early twentieth century have been surveyed. For investigating the people's practice and attitude, practical and social experience of the authors as insider observation of the society have been captured. Wherever possible the information was compared with the experience of other forestry experts of IFESCU, BFD and BFRI, Bangladesh Agricultural Research Council (BARC), Non Government Organisations (NGOs), especially Village and Farm Forestry Projects and their partner NGOs. Both quantitative and qualitative assessments have been used, wherever their applicability was possible.

3 Results and discussions

3.1 Feature of forestry interests

Historically peoples' interest in forestry was concerned with collecting and cultivating staples involving mainly hunter gatherers and shifting cultivators, perhaps which have been manifested in the reconnaissance of Brandis (Stebbing 1921). Economic interests on different forest produce were introduced mainly by European traders. When the countries were colonized, Colonial policies came into play mainly to display the solemn claim on economic interests and often associated with execution of forestry practices. This interest of colonial policy is termed hereafter as 'colonial interest'. Later on, when the countries became independent, the administration and policy instruments established by Colonials remain in place, which is termed here as 'administrative interests'. Unlike colonial interests, administrative interests have sought varied services depending on the politics and peoples movement, as a result, in one hand forest has become the victim of economic, commercial, political interests, and as the victim of liaison and lobbying groups on the other. Present sustainability interest of peoples' participation, though very popularly displayed in administrative documents, is not considered here as administrative, because the movement started from NGOs who did not have rights to administering policy. In practice this article is looking at how policy interests played a role to configure sustainability of forests.

Bryant (1996) described that colonial interests of the British regime did not recognise the traditional interest of the people. On the other hand, Bhuiyan (1994) highlighted that the 'commercial interest' of Bangladesh forest management in the past disregarded people's actual needs, and represented a failure on the part of forestry professionals, politicians and others to foresee consequences of depletion of tree resources. Although the sustainability positioning of recent history of past forestry practices as the discourse of 'commercial interest' is undeniable, positioning of British regimes' policy discourses 'colonial interest' can also be influential. Here, in regard to sustainability discourse, a distinction between commercial interest and colonial interest may be desirable.

'Commercial interest' emphasises forest exploitation in relation to business and industrial development. So, un-sustainability in this connection refers to the causes of bad management practices. 'Colonial interest' signifies that, in addition to the exploitation, there had been changes in the right of exploitation. The changes in rights and tenure, perhaps, were highly responsible for the changes of attitude of people. The view of

commercial interest considers the right of government or businessmen over the forest as non-paradoxical: that is government's right for resource exploitation is already established; discourse of colonial interest is embedded with socially embedded elements of right and tenurial issues of forest land use as well.

In the Indian subcontinent, the British were the pioneers in introducing formal forest policy. The state of present forestry organisation of Bangladesh was evolved from the legacy of the forest administration of the colonial regime. Thus, Bhuiyan's (1994) proposition—that 'commercial interest as the cause of unsustainability' may be interpreted in terms of the misuse of privileges transferred by the British policy. The following section presents the story line analysis of British policy in Bangladesh to produce the privileges transferred by the colonial policy.

3.2 Colonial interests of forest policy

After 1776, when the British access to US sources of forest produce was denied and the value of tropical timber in the export business increased, Britain turned to its new colonies in India, Africa and Australia for the supply of timber to its highly expanding navy and army. Forests in India at that time were under use by traditional people for producing staples, for hunting animals for protein, and for grazing cattle. These free-user rights of traditional people were subsequently prohibited in majority of areas to serve the goals of colonial interests. Thus, the contest of economic interest of colonials and user-right interest of forest people initiated the discourses of forest land use. Forest policy in India was initiated by the colonial regime and was implemented by taxing shifting cultivators for cultivation inside the forest. Initially the rate was 50 Paisa rising to 1 Rupee (Rs; units of currency; 1 Rs=100 paisa.) per acre, which provided a large sum of revenue at that time (Chandran 1998). Perhaps this tax was a setback to the traditional shifting cultivation, which was an age-old indigenous approach evolved with the natural environment, and actively maintained in a diverse and productive state enshrined with a pool of human experiences spanning many millennia and many cultures (Gadgil and Berkes 1991).

Charging the shifting cultivation cultivated a temptation and attitude among the shifting cultivators to use the forest to the brim of its potentiality. The upsurge of economic benefit of the colonial interest in India, and perhaps elsewhere as well, developed a phenomenon characterised by enhanced utilisation of natural resources and transformed the forest produce into marketable commodities. As a result, a change in the traditional societies evolved, with a far more opportunistic and individualistic approach to act for self-economic interest, accompanied with a search for the unlimited access to and consumption of others' resources (Padel 1998). The locals and shifting cultivators, after taxing for shifting cultivation, were bound to assume that forest was no longer their own resource. In course of time, a conflict over resource rights gave birth to an exploitative attitude toward the forest in India. GOBeng (1897) reported that traditional people, instead of meeting their subsistence demand, started selling forestry goods and produce from shifting cultivation and 'Pikers' (small businessmen) used to visit them for buying goods. Gadgil and Iyer (1989) and Chandran (1998) also reported the similar attitude of traditional people.

3.3 Teak policy

The growing demand for Teak (*Tectona grandis*) and other valuable timbers received an early policy attention of British administration. Although Teak policy was dominated in forest land use of Myanmar, the initiation of Teak policy started from mainland India. The

first step towards reservation of the forest was taken in 1800 by appointing a commission for assessing the availability of Teak. In 1805 a committee was formed to ensure the royalty rights over Teak timbers (FRI 1961), following which a CF (Conservator of Forests) was appointed in 1806 as Superintendent of Forest Operation (Schlich 1922). Later, in 1855, the Forestry Charter of India was promulgated by Lord Dalhousie, the Governor General of India (Stebbing 1921). This Charter ensured the solemn state right on Teak timbers (also see Rahman 1993). Prohibition was imposed on cutting, handling and even transporting teak trees without permission. Although conservation was shown as the implied reason for depriving local people from using the forest, the real reason was actually for exploitation of valuable resources *i.e.* the conservation approach was geared to colonial interest rather than to local requirements.

Table 2 shows the evidence of Teak interest of past policies in mainland India. The table shows an increasing trend of Teak export through seaports of India. If inland supply of export is included the figure would be much higher. Out of this Teak interest, the Joint Commission of Bengal-Bombay Government took initial step towards forest protection and issued an order prohibiting the felling of Teak below 21 in. in girth (Stebbing 1921). Forestry operation was eventually made open to the European private merchants in lieu of royalty payable to the Governor General of the company. Teak interest was thus a modified version of economic interest of colonial policy in India. The *laissez-faire* period of British forest policy perhaps began from that time of Teak interest.

To serve the Teak interest, the first Conservator of Forests (CF), Mr. Watson, was appointed from the police force. Thus perhaps, Teak interest of early policy was responsible for planting the seed of policing characteristics in the forest administration of India. However, in practice, policing of forest land use started in some European countries such as Germany as part of scientific approach of forest management before it did in India (Lowood 1990). These characteristics, after independence, were blamed as one of the reasons for forest unsustainability in India (Bhuyian 1984).

Mr. Watson and his successors supplied the government with cheap Teak directly from the forest. As a result, there was seething discontent amongst both proprietor and timber merchants. The feeling rose to such a momentum that in 1823 the government was compelled to abolish the post of CF (Stebbing 1921). As a consequence, supply of Teak decreased and the price increased. The Teak interest thus contradicted with the interest of business people and provided them an inherent discourse how to play within the policy regime for business interest.

3.4 Integration of tax policies

Teak interest also induced the government to integrate the measures of other policies to control the forest resource. In the beginning of 1830s, lack of Teak supply produced a discontent in the Indian Naval Command, in respond to which, the Governor General of

Table 2 Average yearly teak export through the seaport of India

Period	Teak export cu T/year	Rupee
1870–1871/1874–1975	43,005	3,172,499
1875–1876/1879–1880	47,738	3,461,905
1880–1881/1884–1885	55,043	5,351,350
1885–1886/1889–1890	47,683	4,958,410

Source: Watt (1893) [cuT (cubic tonne) is equivalent to 50 cubic feet of timber]

India sent Dr. Wallich to Burma to produce a report on Burmese Teak (Stebbing 1921). Upon receiving a satisfactory report, a different policy step was taken, throwing open the forests to speculators who paid an ad-valorem duty on the timber extracted. The consequence of this open policy was that the supply of Teak increased to such an extent that anxiety arose about the maintenance of sustained supply. As a result, at the beginning of the 1840s, Dr. Helfer conducted another survey and recommended the cancellation of all previous leases and the making of a new agreement with enough safeguards of forests (FRI 1961). A restriction was placed by the Tariff Act of 1843 towards felling young trees (Schlich 1922). Eventually a small forest administration was formed under the then Commissioner of Burma.

Conservatorship was again reinstated in Madras in 1847 and Dr. Gibson was given the charge (Stebbing 1921). On the other hand, Tariff Act (vi) of 1848 was passed, abolishing all export duties on the port-to-port trade within India and removing the restrictions placed by the Tariff Act of 1843 over felling of young trees. This action facilitated the supply of Teak by the private supplier (Stebbing 1921). As a result, indiscriminate felling of young trees started again. Dr. Gibson, the CF at Bombay was constantly pursuing government and finally in 1851, the Government of Bombay and Madras prohibited cutting of Teak trees below 32 in. girth, and a levy was added to exports (Stebbing 1921).

Thus, the discourse of laissez faire forest rules and regulation was dominated by Teak supply for the state interest and influences of armed forces and the business people. The rules and regulations were mainly to regulating the size of felling and controlling taxes. Implementation of such rules called for intensive measurement and marking practices to explain scientific ideas for convincing administration and business people. Those measures eventually initiated the scientific forestry concept in India.

3.5 Cash crop policy

Forest policy was also pursued for other business interests of colonials. Tribal people, who used to produce cotton (*Gossypium herbaceum* and *G. arboreum*) for their own consumption, were compelled to produce on a massive scale (Hunter 1876), for export to mills in Britain and Calcutta. Stebbing (1921) presented the pictorial evidence of such cotton cultivation at that time. Starting from imperial take-over, there had been a gradual increase of cotton export year by year. WRF (1878) reported that cotton cultivation in the hills ruined the forest.

Moreover, there was conversion of forest land for tea (*Camellia sinensis*) cultivation (Wild 1897, 1901), a very profitable commercial crop for export to Europe (Hunter 1893; GOEP 1970). The trend of tea exports as presented in Fig. 2 shows the tendency of colonial policy to tea cultivation. Moreover, processing of each mounds (37 kg) of tea required 0.028 cum of firewood (GOBeng 1892), therefore, resulted in more pressure on the forest. It was also reported that vast quantities of soft timber were required for tea boxes for the Assam tea industry, most of which were collected from Maini and Ruingkheong of Chittagong and Chittagong Hill Tracts division because it was cheaper and easier to transport to Calcutta (Cowan 1923). Hunter (1881) reported that around in 1872, India exported about 13.5 million kilograms of tea of which Assam alone produced 10.6 million kilograms. and Bengal produced 1.8–2.2 million kilograms. Thus, the demand of soft wood for tea chests widened the teak policy to many other species of the forests. Indeed cotton, indigo and tea were almost entirely European monopolies at that time (Edwardes 1967). As a result, land use policy, for both forested and non-forested land, was geared very much towards the production of those crops.

Fig. 2 Tea exports from Bengal during 1882–1891. [Source: GOBeng (1892). *Brhm* stands for Brahmaputra valley in Assam, India and most part of Shurma Valley is in Bangladesh now. 1Mound is about 37 kg.] (Bangladesh Forest Department 2008)



GOEP (1970) stated that by 1872 there were 13 tea gardens in present Bangladesh, covering an area of 10,076 ha. For maintaining the accommodation of labour, healthy facilities for European workers and safety from wildlife, large areas adjacent to the gardens were cleared (e.g. Wild 1901). In 1947, when present Bangladesh was separated as East Pakistan, the area under tea garden was 27,181 ha (Ahmad 1968), which represented a 170% growth. The expansions for these practices were so rapid that Dr Brandis (1879) predicted for forests of Bengal that:

before long, the forest area will be inadequate to fully supply the demand.

Like tea production, tobacco (*Nicotiana tabacum*) production was also patronised by the British rulers and claimed a large tract of land including forest land (Hunter 1876). The land under tobacco cultivation was 79,305 ha in 1911–1912 but rose to 96,564 ha during 1930–1931 (Ahmad 1968), a 21.8% increase. However, in the highly forested Chittagong Hill Tracts (CHT) district, tobacco cultivation increased from 386 ha in 1911–1912 to 1,467 ha in 1930–1931, which was a 280% increase. Salt production, another monopoly of the British rulers (Hamilton 1828), also took a very heavy claim on the forest for fuel wood. There were records of oppression and coercion to salt workers for collecting firewood (BDR 1978). Thus peoples' willingness of participation was forced to serve the colonial interest.

3.6 Commercial interest of forest land use

When the colonial rule was over, degradation of forest did not stopped. The legacy of the colonial policy was continuing. Bhuiyan (1984) used the term 'commercial interest' to indicate the interests of post-colonial regimes to forest land use. Among many irregularities of forest administration of that time, commercial interest was concentrated to industrialisation of the country and to the production of cash crop. The commercial interests also targeted to reduce wood import for internal consumption. The following subsections present the commercial interests in a nut shell.

3.7 Reduction of wood import

After independence of Pakistan, the independent government observed that the country was very poor in forest resources. The forest area of the whole Pakistan was only 4% of the total

land, of which the then East Pakistan (presently Bangladesh) had the major and most productive areas (GOP 1957). The East had 16% of its land as forest whereas the west had only 2% (GOP 1965). The resource stock in the forests was also poor. As a result government need to spend a large sum of valuable foreign cash to import the fuel wood for that part of the country. During early 1960s Pakistan needed to import wood and wood products worth about Rs 40 million per year (GOP 1965). To save the foreign cash government decided to harvest the forests of eastern part more intensive way, meanwhile forests could be created on the waste-lands of the western part. This intension had invited an intensive management of forests through improved working plan and improving the communication within the forest area. Forests were cleared to replace the natural regeneration by artificial plantings of useful crops. As a result forests were over-harvested and the diversity of species was reduced.

3.8 Supporting forest based industries

Economic and commercial utilization of forests of East Pakistan also was aimed to industrialize the country. Along with the agro-based industries, forest-based industries like ply-wood mills and pulp and paper mills received priority in the development planning of the then East Pakistan (GOP 1957). Indeed, existing pulp and paper complexes such as ‘Karnaphuly Paper Mills’ (KPM), ‘Khulna Newsprint Mill’ (KNM), Sylhet Pulp Mill (SPM) and the sawmill complexes at ‘Kalurghat’ and ‘Sangu Valley’ and other major industries like match factories, plywood mills, hardboard mills in Bangladesh were established during the Pakistan regime (Ahmad 1968). About 51,000 ha of forest areas from different parts of Chittagong Hill Tracts (CHT) were given under long term lease to KPM for extraction of bamboo (*Melocanna baccifera*) and raw materials for pulping (GOB 1992). The Forest Department was also happy to continue raising plantations of Teak when the colonial rule was over. From 1947–1960 about 13,163 ha forest was clear felled and planted with Teak, most of which did not see the success (Roy 1992).

Initially about 94% of sawmills and other industries were owned by the government. As a result, the government was responsible to allow and allocate enough raw materials for those industries. Thus, the forests of East Pakistan were heavily utilized during Pakistan regime. Less productive natural forests were cleared and planted by rapid growing industrial species like *Gmelina*, *Tectona* and *Albizia*. In some places exotic species like eucalyptus (*Eucalyptus spp.*) and pines (*Pinus spp.*) were also introduced. As a result diverse tropical forests were converted to monoculture forests. However, an Asian Development Bank (ADB) report (GOB 1993) mentioned that during the post-colonial period, growth and productivity of plantation forests were so poor that the basic principle of scientific forestry i.e. replacement of slow-growing natural forests by plantation, became unjustified. Thus the sustainability of production discontinued.

3.9 Continuation of cash crop interest

The legacy of cash crop practicing was also expanded after independence in certain sectors like tea and cotton. Government of Pakistan introduced rubber plantations in 1959 for which about 10,100 ha of USF(Unclassified State Forest) land (under ‘Jhum’ cultivation) was occupied from CHT alone (GOP 1965). Cultivation of tea and cotton was also expanded. Table 3 shows the trend of tea cultivation. From 1872 to 1993, overall average increase in tea cultivation was 8.6% per year. From 1872 to 1947 (year of independence of Pakistan) average increase was 2.26% per year. During Pakistan period from 1947 to 1963 it was

Table 3 Trend of tea cultivation of Bangladesh as a legacy to colonial trend

Year	Area (000 ha)	Increase %
1872	10	
1947	27	170
1963	32	9.2
1993	114	37.3

Source: GOEP (1970), Ahmad (1968), Bhuiyan (1993)

only 0.58% but after that (period of industrial thrust) from 1963 to 1993 the increase was 1.25% per year. Thus, both colonial and commercial interests were attentive to increase cash crop cultivation.

Although cash crop cultivation should support the conservation of the rest of the forest area, it did not happen. The ascendancy of cash crop policy for development displaced the forest dwellers again and again. New areas were encroached by the forest dwellers. The income from the cash crops also went to a few private owners facilitated by colonial post colonial administration. The forestry sector was hindered by lack of management skill and shortage of trained staff (Zahiruddin 1982). In addition, people were overwhelmed by unexpected changes in the socio-economy, hardship, natural disasters and above all politics (see Thompson and Sultana 1996). Most state effort was given to face financial reorientation while sustainability problems remained neglected.

4 Conclusions

From the above discussion of policy instruments and implementation practices it is clear that the influences of commercial interest on forest land use was not much different from the colonial interest in terms of resource claim. Though the regimes and the policies have shifted, the components of commercial interest like cash crop production were direct evolution of colonial interests. In both instances people from the plain land migrated to forest areas as supporting laborer or as petty businessmen. Only the difference was the internal development of the country. The colonial interest was more biased to improve the conditions of colonial power, thus most industrial development was out side the country of the source of resources (e.g. England), but in the case of commercial interest the development was within the country. However, such development did not bring the real progress because the distribution of income from the forest resources was not perfect and most resources were in the hand of few opportunists. Moreover, corruption and bias took away the progress from the common people. People were neglected in both the cases. The condition of ordinary people did not improve much through the policies of commercial interest than those of colonial interests. Therefore, peoples' participation to the forests was absent. As a result, both the approaches were exhaustive to forest resources of the country.

The case study also shows that although the regime has been changed, participation of people has not been changed much because their trust on administration has been shaken abruptly. Only the opportunists and the business people adapted to take the advantages of the interest of shifted policies and perhaps played in different ways to influence the policy objectives. Similar might be the case in global attempts of sustainability adaptation. The dubious role of world leading countries not only will hamper the spontaneous participation of poor countries, but also will make future attempts contentious, because unusual attempts

will grow to verify the interests of leading components of the world. In fact, the exhibits of these contentious roles are likely to work as a background force for delaying start of concerted effort, and for converting any un-negotiated breakups from global discussion table to conspiracy. It will eventually strengthen the regionalism. Therefore, attempts on global adaptation to sustainability remains more conditional to shifting of political wills of leading regimes than to manipulating the resource tools of sustainability.

References

- Ahmad N (1968) An economic geography of East Pakistan, 2nd edn. Oxford University Press, Karachi
- Ahmed FU (2000) 'Forest resources of Bangladesh: problems and prospects', Paper presented at the Foundation Training of National Agricultural Research System Scientists, Bangladesh Agricultural Research Council, Dhaka, (unpublished)
- Ali M (2002) Scientific forestry and forest land use in Bangladesh: A discourse analysis of attitude of people. *The International Forestry Review* 4(3):214–222
- Ali A, Kabir MA, Hoque ATMR (2006a) People, policy and perpetuity: sustainability indicators of Bangladesh forestry. *Electronic Green Journal* 24, <http://egj.lib.uidaho.edu/egj24/ali1/index.html> cited 12th Oct. 2007
- Ali A, Kabir MA, Hoque ATMR (2006b) People's attitude and forest land use: co-evolution of forest administration in Bangladesh. *Small Scale Forest Economics, Management and Policy* 5(2):271–286
- Anonymous (2006) *Banglapedia—the National Encyclopedia of Bangladesh*, Asiatic Society of Bangladesh, http://banglapedia.org/HT/F_0158.HTM
- Bangladesh Forest Department (2008) <http://www.bforest.gov.bd/land.php>: Official website of Bangladesh Forest Department under the Ministry of Environment and Forest, Government of Bangladesh (Last information taken on 3.45 AM 7th August, 2008)
- BDR (1978) In: Islam S (ed) *Bengal District Records (BDR)*, Chittagong. Dhaka University, Bangladesh, pp. 1760–1761
- Bhuiyan MAA (1984) 'Social and community forestry as an instrument of forest policy and development in Bangladesh'. M.Sc. Dissertation, Department of Forestry, University of Oxford
- Bhuiyan MAA (1993) Social forestry in Bangladesh: prospects and problems. In Mahat BS, Amin SMR (eds) *Participatory forestry perspectives*, Agroforestry Information Series 3, BARC-Winrock International, Dhaka, Bangladesh, pp. 25–39
- Bhuiyan MAA (1994) Social forestry as a strategy for economic development, In Ahmed MF (ed) *Social forestry and community development*, proceedings of a national workshop, October 5–10, 1991, Institute of Forestry, Bangladesh, pp. 23–26
- Brandis D (1879) Review of forest administration during 1876–77. *Indian Forester* 4(3):275–280
- Brandis D (1897) *Indian Forestry*. Oriental University Institute
- Brundtland GH (ed) (1987) *Our common future: The World Commission on Environment and Development*. Oxford University Press, Oxford
- Bryant RL (1996) Romancing colonial forestry: the discourse of forestry as progress in British Burma. *Geogr J* 162:169–178, doi:10.2307/3059874
- Chandran MDS (1998) Shifting cultivation, sacred groves and conflicts in colonial forest policy in the Western-Ghats. In: Grove RH, Damodaran V, Sangwan S (eds) *Nature and the orient: the environmental history of South and Southeast Asia*. Oxford University Press, Delhi, pp 674–707
- Cowan JM (1923) 'Working plan for the forests of Chittagong Division'. Bengal Government Press, Calcutta
- Davidson J (2000) Consultancy report on social forestry. Bangladesh Forest Research Institute, Chittagong
- Edwardes M (1967) *British India 1772–1947: a survey of the nature and affects of alien rule*. Sidgwick and Jackson limited, London
- FRI (1961) 100 years of Indian forestry., vol. 1. Forest Research Institute (FRI), Dhera Dun, India, pp 1861–1961
- Gadgil M, Berkes F (1991) *Traditional Resources Management Systems, Resource Management and Optimization*, India
- Gadgil M, Iyer P (1989) On the diversification of common Property resource use by Indian Society. In Berkes F (ed.) *Common Property Resources' Ecology and Community Based Sustainable Development*, London
- GOB (1992) *Forestry Master Plan: Forest Industries*, Asian Development Bank TA No. 1355-BAN and UNDP/FAO Bangladesh 88/025

- GOB (1993) *Forestry Master Plan: 3rd Forestry Forum Background Paper*, Asian Development Bank TA no. 1355-BAN.
- GOB (1995) *Development Perspectives of Forestry Sector Master Plan*, Ministry of Environment and Forest, Government of the People's Republic of Bangladesh.
- GOBeng (1892) *Indian woods for tea Boxes—a supplement of Government of Bengal*.
- GOBeng (1897) 'Forest administration in Bengal during 1895–96', report from Government of Bengal, Calcutta.
- GOEP (1970) *East Pakistan District Gazetteers*, Government Press, Government of East Pakistan (GOEP).
- GOP (1957) *The First Five Year Plan 1955–60*, National Planning Board, Govt. of Pakistan.
- GOP (1965) *The Third Five Year Plan 1965–70*, Planning Commission, Govt of Pakistan.
- Guha R (1989) *The unquiet woods: ecological change and peasant resistance in the Himalaya*. Oxford University Press, Delhi
- Hamilton W (1828) *East India Gazetteer*, vol. 2. Allen & Co., London
- Hunter WW (1876) *Statistical accounts of Bengal*, vol. 6. Trübner and Co., London
- Hunter WW (1881) *The Imperial Gazetteer of India*, vol. 11. Trübner and Co., London
- Hunter WW (1893) *The Indian empire, its people, history and products*, 3rd edn. W.H. Allen and Company, London
- Kathirithamby-Wells J (1998) Attitude to natural resources and environment among the upland forest and swidden communities of Southeast Asia during the nineteenth and early twentieth centuries. In: Grove RH, Damodaran V, Sangwan S (eds) *Nature and the orient: the environmental history of South and Southeast Asia*. Oxford University Press, Delhi, pp 918–935
- Khan NA (1998) A political economy of forest resource use: case studies of social forestry in Bangladesh. *Studies in Green Research*, Aldershot, UK
- Kumari K (1996) Sustainable forest management: myth or reality, exploring the prospects for Malaysia. *Ambio* 25(7):459–467
- Lowood HE (1990) The calculating forester: quantification, cameral science, and the emergence of scientific forestry management in Germany. In: Fränsmyr T, Heilbron JL, Rider RE (eds) *The quantifying spirit in the 18th century*. University of California Press, Berkely, pp 315–342
- Malthus TR (1798) *An essay on the principle of population, as it affects the future improvement of society with remarks on the speculations of Mr. Godwin, M. Condorcet, and other writers* 1st edition; Summary View (1830) *An essay on the principle of population*. Penguin Classics. ISBN 0-14-043206-X.
- Padel F (1998) Forest knowledge, tribal people, their environment and the structure of power. In: Grove RH, Damodaran V, Sangwan S (eds) *Nature and the orient: the environmental history of South and Southeast Asia*. Oxford University Press, Delhi, pp 891–917
- Rahman LM (1993) History of forest conservation in Indo-Bangladesh. *Arannya: A Forestry Periodical* 2 (2):21–24
- Roy MK (1992) Unnayanay Baner Bhumika 'O' Bangladesher Ban Sector. *Aranya* 1(1):20–23, in Bengali
- Saldanha IM (1998) Colonial forest regulations and collective resistance, nineteenth century Thana district. In: Grove RH, Damodaran V, Sangwan S (eds) *Nature and the orient: the environmental history of South and Southeast Asia*. Oxford University Press, Delhi, pp 708–733
- Schlich W (1922) *Schlich's Manual of Forestry: Forest Policy in British Empire*, Vol-1. London.
- Stebbing EP (1921) *The Forests of India*, vol. 1. John Lane Bodley Head Ltd., London
- Thompson PM, Sultana P (1996) Distribution and social impacts of flood control in Bangladesh. *Geogr J* 162 (1):1–13, doi:10.2307/3060212
- Watt G (1893) *Dictionary of the Economic Products of India* 6(4). W.H. Allen, London
- Wild AE (1897) 'Progress report of forest administration in the lower provinces of Bengal, for the year 1896–97'. The Bengal Secretariat Press, Calcutta
- Wild AE (1901) 'Progress report of forest administration in the lower provinces of Bengal for the year 1900–1901'. The Bengal Secretariat Press, Calcutta
- WRF (1878) Timber trade in Assam. *Indian Forester* 4(1):46–52
- Zahiruddin ASM (1982) Professional level forestry education in Bangladesh. In the *Proceedings of the Second Bangladesh Forestry National Conference on Forestry*, January 21–26, Dhaka Bangladesh pp. 321–25