

Formal Forest Management System in the Sudan and the Sustainability Issue

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Abstract: Prior to the colonial era, forest resource management in Sudan was largely carried out informally through local community leaders. Later the state intervened and withdrew the management control from villagers. This study was an endeavor to investigate the efficacy of the formal forest management system in enhancing sustainable management of forest resources in the Sudan. A sample of 80 villagers was chosen, based on the stratified random sampling technique, from six villages in Elgedaref (Eastren Sudan) and Elain (North Korfan) areas. The primary data were obtained through a questionnaire based structured interviews and check-list based semi-structured interviews. The data were analyzed using the SPSS software. The results revealed that forest reserves in the study areas constituted a fundamental source of a variety of socio-economic and environmental goods and services most needed by villagers. However, most of the benefits were obtained through illegal access. Hence, the formal government forest management system proved to be ineffective in the absence of coordination with other stakeholders including local people. The study recommended that forest authorities should actively involve villagers and give due consideration to their perceptions, aspirations, basic needs, and knowledge when developing forest management strategies and plans.

Key words: Formal management system, people's participation, reserved forest

INTRODUCTION

Prior to the British colonial era, forest resource management in Sudan was largely carried out informally through local community leaders. In the 1970s, the Unregistered Land Act was issued; and it gave the government the ownership over any wasteland, forests or unregistered land. The law did not provide for regulation of existing long established usufruct rights. The government intervened and withdrew the management control from the villagers and followed new approaches to manage the resource for the benefit of the whole nation (Elsiddig, 2004). The assumption was that forest resources management, based on multi-purposes national and regional interests could best be assured by a government organization (Wiersum, 1995a). And for that purpose, the government created a specialized professional forestry institution (in 1901). This institution tried to, and at least on paper did, take over resource management control from the local population, through reservation procedures and by issuing legislations (Sulieman, 1996).

Although the related needs of the local population should also be met to a reasonable extent, these needs were mostly considered subordinated to the national

interests. Consequently, the forest authorities often considered rural people as a threat to forest protection (Sulieman, 1996).

In spite of the protection measures and the patrolling system within forest reserves, dependent communities continued to extract their ever increasing needs from them. According to Elsiddig (2004), a revision of the working plans of the reverain forests revealed a clear decline in productivity per unit area due to illicit felling by the local inhabitants. An inventory carried out in 1996/97 indicated that the average number of stems per feddan (1 feddan = 4200 m², 1.038 acre and 0.42 ha) declined to 27 which are just above 50% of the targeted number with 30 years rotation. As well, there was a decline in the volume of fuelwood produced due to the lopping of the trees for browsing animals by the local population. Moreover, the villagers' animals always graze young saplings and there is a continuous reduction in the area of the forest reserves due to encroachment (Elsiddig, 2004).

Since 1923, when reservation of natural forests started, the policy has concentrated on the management of reserved forests under government control to organize felling. It was understood that the management of natural forest reserves would facilitate conservation of forest

resources outside the reserves and maintain sustainable supply of people's needs (Elsiddig, 2004). However, reviewing forest policy and forest legislation indicated that all the management activities executed within the natural forest reserves were based on denying local communities' access to forests (Elsiddig, 2004). No wood production system has been developed other than dead wood collection and sales based on licenses issued when needed and not based on planning and proper management system. The management was accordingly reflected in the protection, patrolling, guarding and policing; a practice that rendered the legislation and the management programmes more oriented towards control and punishment rather than geared towards development and sustainable management (Elsiddig, 2003).

The current study was an endeavor to tackle the following research question: To what extent is the formal forest management system failing to achieve the main goal of sustainable management of forest resources in the Sudan?

The general objective of this study was to contribute to the ongoing efforts aiming at sustainable management of forest resources in Sudan. The specific objective was to investigate the impact of the formal forest management system (reservation era) on sustainable management of forests in order to draw policy recommendations for stakeholders to enhance sustainable management of the resources.

METHODOLOGY

This study covers the eastern and western parts of Sudan; specifically ELGedaref State where ELRawashda forest reserve is located and North Kordofan State where Elain forest reserve is located.

Six villages were chosen for data collection in the two study areas. The selection of villages was based on their accessibility to the forest, villagers' dependency on the forest and their involvement in the pilot projects. Three out of five villages were chosen randomly in each of Elgedaref and Elain areas.

Villagers were categorised according to their economic activities and relation to the forest. A stratified random sample of 10% of each group was chosen. The size of each sub sample was proportionate to the size of each sub group. The total sample size was 80 respondents.

The data were collected from primary and secondary sources. The secondary sources were institutions' reports, records and papers; whereas the primary data were obtained through a questionnaire-based structured interview with the selected informants. Furthermore, checklist-based semi-structured interviews were carried out with Forest National Corporation staff and forestry researchers to collect information about policies, legislations, management systems and constraints. All

Table 1: Respondents' views as to the use of direct forest products

Type of direct product	Percent of use purpose	
	Own use (%)	Commercial use (%)
Fuelwood	96	48
Building materials	89	30
Fruits and seeds	83	37

Table 2: Respondents' awareness about indirect benefits of forest resources

Indirect benefit	Aware about (%)	Benefited from (%)
Grazing area for animals	48	64
Protection of watersheds	58	34
Jobs opportunities	58	45
Improvement of crop productivity	76	4
Recreation and tourism	56	81

Table 3: Accesses of local people to the forest reserves

Accessibility to the reserve	% of the respondents	Comments
Illegal access	41.3	All forest products
Control access	31.3	Building poles and firewood
Free access	11.3	Deadwood and forest food
On commercial basis	10	Fuelwood and building poles
Both control and free access	6.3	Fuelwood and building poles

interviews were accompanied by personal observations, which allowed the researchers to judge the reliability of the answers given. Finally, participatory rural appraisal sessions were held to clarify all the points and remove inconsistencies.

The Data were processed and analyzed using the Statistical Package for Social Science (SPSS) software.

RESULTS AND DISCUSSION

Forest resource as main source for local needs: Forest resources provide a range of benefits to the communities living adjacent to them. Local people were, to a great extent, dependent on the forest reserves in the study area. They indicated that the reserved forests are the major sources that maintain their livelihood through providing them with their basic needs for fuelwood, building materials, fruits and seeds (Table 1). The respondents were well aware of the indirect benefits rendered by the forests (Table 2).

Unfortunately, this high level of awareness about forest goods and services was not appreciated when comes to the issue of access to the goods and services availed by forests; The respondents varied in the way of accessing the forest resources. In fact, 41.3% of the respondents obtained their needs of forest products illegally, while 31.3% obtained their needs through controlled access and 11.3% obtained their needs on free access (Table 3). Illegal access of the local people may be due to isolation and the feeling that forests belong to the state. Since the owner (the state) is not willing to involve

Table 4: Respondents' opinions with respect to the of form of forest management system

Respondent category	No.	Form of management is a typical traditional government system			
		Agree		Disagree	
		F	%	F	%
From the non Participating villages	60	48	80	12	20
From the participating villages	20	16	75	4	20
Total	80	64	80	16	20

χ^2 : 0.000; p: 1.00

Table 5: Respondents' opinion with respect to that FNC is mainly concerned with revenue collection and people punishment

Respondent Category	No.	FNC is concerned only with revenue collection and punishing people			
		Agree		Disagree	
		F	%	F	%
From the non participating villages	60	34	56.7	26	43.3
From the participating villages	20	15	75.5	5	25
Total	80	49	61.25	31	38.75

χ^2 : 2.124; p: 0.14

Table 6: Respondents' views as to system's ability to avail people's basic needs

Respondent Category	No	Failed		Not Failed	
		F	%	F	%
From the non participating villages	60	48	80	12	20
From the participating villages	20	18	90	2	10
Total	80	66	82.5	14	17.5

χ^2 :1.03; p: 0.3

the local people, most of the respondents believed they can use the forest through illegal felling to satisfy their needs as long as they escape the guards. Some may cut more than they require for households needs.

The formal forest management system in practice:

Formal forest management planning in Sudan started in 1929 in some reverain forest reserves. In 1948, Mr. Booth prepared the first proper management plan. This work was followed by preparation of many forest working plans in different areas of Sudan, but limited to reserved forest (Blue Nile, White Nile and Mountains areas) due to the clear objectives (mainly national) of their establishment. In fact, there were no concrete forest management plans for natural forest except for a very small number (Elsiddig, 2004).

The Forest Act (1989) granted certain rights and privileges for local communities living in or around the reserved forests. Since 1932, forest policies, have spelled out the rights of local communities to satisfy their needs from the forest reserves. Furthermore, FAO (2006) mentioned that the revised forest policy in 2002 provides the general direction and policy guidance for the

development of the forestry sector. The guidance underlines the commitment of the government to put emphasis on poor people and their needs, good governance, and involvement of the local communities. In spite of clear forest policy, which is supported by the 1989 forest Act, Elsiddig (2004) pointed out that in reality the policy was inefficiently implemented. Management activities have been confined to guarding, policing and communities prevention. That was clearly reflected in the viewpoints held by the respondents.

Table 4 shows that 80 and 75% of the respondents in the non participating villages and the participating villages, respectively, mentioned that the formal management system is typically a traditional government system without effective coordination between FNC and local community. Both groups of respondents were not involved in the management of these reserves. Chi-square test revealed no significant (p =1.00) difference between respondents' answers

Additionally, Table 5 revealed that the local people are still complaining about the existing form of management as 75.0 and 56.7% of respondents in the non-participating villages and the participating villages, respectively, mentioned that FNC is only concerned with revenue collection, punishing people and preventing them from getting in. Chi-square test revealed no significant difference (p = 0.14) between respondents opinion.

The local people living next to the forest often have the most immediate vested interests in the forests. The results indicated that 80% of the respondents from the non-participating villages reported that the system failed to enable people to get their need from these forests and 90% of the respondents from the participating villages held the same viewpoint (Table 6). Chi-square test indicated no significance (p = 0.3) difference between the respondents' categories. This reflects the lack of effective involvement of local people in the formal management of these reserves and negligence of their interests, and hence even the villagers in the participating villages did not develop a positive attitude towards the management system.

The outcome of all policies (1932, 1986 and 2000) was far from satisfactory; the result was deterioration of the forest cover. This was due to the fact that the government laid the policies alone, was totally responsible for their implementation and did not show enough commitment to see them executed. They largely ignored supportive elements such as policy tools required to facilitate implementation of policy prescriptions and lack of a built in system of monitoring and evaluation of results that is imperative as a guide for policy revisions (Elmahi and Abdelmagid, 2002).

In fact, the government depended entirely on the law to affect "command and control" but even that failed

Table 7: Respondents' opinions with respect to the impact of the existing formal forest management system

		Impact of the existing formal forest management system									
		Disappearance of some tree species		Scarcity of forest products		Decline agricultural Productivity		Long distance to get products		All these impacts	
Respondents Category	No.	F	%	F	%	F	%	F	%	F	%
From non participating villages	60	14	23.3	0	0	3	5	3	5	40	66.7
From the participating villages	20	5	25	2	10	0	0	0	0	13	65
Total	80	19	23.8	2	2.5	3	3.8	3	3.8	53	66.3

because of inefficiency of guarding and the infectivity of punishment to lawbreakers. This resulting situation has been described by Blaikie (1989) cited by Sulieman (1996) as follows: customary rights of land use, originally codified under the British mandate, are overlaid and contradicted by further laws passed since independence. Most of these laws increase the power of the state (at least on paper) in allocating land, designating forest reserves and forbidding the cutting of trees, but due to the very volume of them, and their contradictory messages they actually reduce the state's power to achieve much in practice.

Towards the end of the 1960s, the native administrative system that was effective in resource management was abolished and the native administrators have lost much of their legal status. Consequently, traditional institutions have been seriously eroded by being denied powers of exclusion and access the resources. Furthermore, the state was unable to manage the resources because local institutions created by the state failed to enforce state law. Consequently, in many situations the state intervention resulted in removing the conditions for a genuine communal property rights regime leading to situations where forest resources acquired the characteristics of an 'open access' system. In fact, the government was unable to play its role in providing incentives for deterring misuse of forest resources (Beck *et al.*, 1989; cited by Sulieman, 1996).

The formal forest management system:

Revisiting the sustainability issue: The respondents contemplated that the current situation of the forest resources reflects the negative impact of the existing formal management system. That is manifested in the continuous deterioration of the forests, scarcity of forest products, disappearance of tree species, walking for long distances to get forest products and declining trend of agricultural productivity. These views were held by 66.7% of the respondents from non-participating villages and 65% of the respondents from participating villages (Table 7).

The main factors that led to the malfunctioning of the formal forest management system were continuity of illegal felling (reported by 66.7% of the respondents) and people's isolation and prevention from accessing forests to get basic need (55%) (Table 8).

Table 8: Respondents' views as to the reasons led to failure of the management system

Reasons	F	%
Continuity of illegal felling	40	66.7
People's isolation and prevention	33	55.0
Weak protection	22	36.7
Commercial felling	13	21.7
Absence of extension	7	11.7

The respondents were of the opinion that the forestry authorities contributed to the misbehaviour of the villagers by denying people's rights to access the forest and mistreat them. Moreover, the authorities gave them the impression that all trees belong to the government and any one cutting a tree would be punished. Gueye and Laban (1992) argued that villagers have, to a great extent, lost any feeling of responsibility for managing forest resources in their vicinity. They are often in a state of uncertainty as to their rights to the land and to the trees. Under such circumstances, it is not surprising that the local people no longer feel really responsible for the protection and management of the tree/forest resources.

The reported reasons indicated that forest resources have not been maintained under the forest service control and this could be attributed to the fact that the actual number of forest service agents has always been far short of that required for effective enforcement of the forest protection legislation. Kherof (2000) reported that, sometimes, one or two forest guards are supposed to protect forest reserves of 5000 hectares; at other times, a guard may be responsible for several different forest reserves.

In fact, the complexity of forest resources management with the multiple services they provide must be the subject of consensus, and for this a democratic process is required (Kherof, 2000). The working plans' revision concluded that there is a need to involve the local people to manage forest resources in a sustainable manner. This confirms the needs for clear definition of stakeholders' rights and responsibilities in resource management planning. Wiersum (1995b) stated that after 1970, there were changes in the concept of rural development. This change led to a gradual shift in the role of forest management, from an emphasis on national interests for economic growth to the need for proper distribution of products to fulfill basic human needs and

the active participation of rural people in their own development process (Warner, 1997; Nielsen and Castro, 2001; Glover, 2005).

There is a growing understanding among officials that the management of forests need to complement the strategies of natural resource development, based on national interests with new strategies focussing on basic needs, equity and popular participation. To achieve this consensus or at least a majority opinion, it is required that representatives of civil society organizations, NGOs, local councils and up to national assembly portray their ideas on forest and environmental policies to their constituency so that the cumulative democratic process would give birth to nationally accepted tools that help policy implementation. The challenge of the management is to find the adequate approaches to strike a balance that meets the national objectives as well as basic needs essential for the survival and development of local communities (Nielsen and Castro, 2001).

CONCLUSION AND RECOMMENDATIONS

- Forest reserves in the study areas constitute fundamental source of socio-economic and environmental goods and services most needed by villagers.
- The formal government forest management system is ineffective in the absence of coordination with other stakeholders including local people.
- The formal forest management system has a negative impact on forest resources manifested in their continuous deterioration.
- Forest management plans should better be developed through the participation and involvement of all relevant stakeholders including local people.
- Forest authorities should give due consideration to local people's perceptions, aspirations, basic need and knowledge when developing forest management strategies and plans.
- Securing clear land/tree tenure-ship is a pre-requisite for active participation of stakeholders (mainly local people) in any sustainable forest resources management endeavor.

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