

INDIGENOUS TECHNIQUES OF TREES MANAGEMENT OF DANMATYAWA AND KABOBI VILLAGES OF MARADI-KATSINA REGION OF NIGER-NIGERIA

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ABSTRACT

The aim of the study is to examine the impacts of indigenous techniques on vegetation resources management of the Maradi-Katsina border Region. The study was a survey research in which systematic sampling technique was used to select respondents from the user groups of Danmatyawa and Kabobi villages of Maradi - Katsina region respectively. The user groups which are purposively identified amounts to four (4) both Dan Matyawa and Kabobi villages. These are farmers, herbalists, pastoralists and wood carvers as well as farmers, herbalists, blacksmiths, wood carvers respectively. A sample of 59 respondents was drawn using systematic technique from the total population of 183 people in the two study villages. Group interview was administered on respondents drawn from above using checklist. The study found out that there are four (4) techniques of trees management of the area which are preferentially practiced by the people of the area. It also found out that there is strong nexus between indigenous techniques and trees diversity enrichment in the region because of what is seen in terms of high trees stands in the area. It is therefore recommended the study on the values of indigenous knowledge/practices should be a hallmark of researches so as to update the knowledge base with various hidden skills.

Keywords: Biodiversity, Resources, Approaches, User groups, Wildings

INTRODUCTION

Trees management naturally or through planting has been part of the pre-colonial dry land forestry laws of Niger and Nigeria which included the tending of existing trees and shrubs as well as planting and protecting selected individuals on farms and common lands (Mortimore, 2006). This tending involves the use of indigenous knowledge as well as ex-situ practices. Many studies showed that for long rural men and women in most villages of Africa rely heavily on trees and thus have been involved in the conservation and cultivation of trees on agricultural lands and forested areas (Mortimore and Adams, 1999; Danjuma, 2010). The importance of trees to smallholder farmers is well-known, and includes the provision of diverse products (fodder, fuel, construction materials, food, income) (FAO, 1986), as well as a host of environmental services (Arnold, 1992).

Because they survive a living from them, farmers and other rural dwellers have keen interest in trees conservation. For instance, Danjuma (2010) revealed that in the Maradi-Katsina area farmers' conservation efforts are the foundation of any management regime of the area. Specific practices such as Farmers' Managed Natural Regeneration (FMNR) and planting (through the development of village nurseries) are practices in the Sahel (Smith, 2010), and these were age long techniques that span decades in Maradi area (Awaiss, 2000; Joet et al., 1998) and Katsina (Otegbeye and Olukosi, 1993). Other practices such as lopping, pollarding

and coppicing are found to be associated with the people of the Maradi – Katsina region as intuitively transferred skills of trees management of the area. These are techniques in which trees parts are removed for fuel wood and fodder. Seed banks were also practiced by farmers and herbalists of the Maradi – Katsina region as reported by Danjuma (2010).

Many such as Sinclair and Walker (1999) proved that as they intermingle with the resources, rural peoples' dynamic knowledge of conservation (intuition) is passed on to generations, thus highly resilient and richly transferred. Warburton & Martin (1999) stated that the important contribution indigenous knowledge can make to scientific knowledge has been increasingly recognized as useful in providing a deeper insight into the interdisciplinary and site-specific characteristics of land use and natural resource management and the understanding of the interaction between agro ecological systems and humans.

Despite values attached to these practices, challenge and/or alienation of the indigenous techniques is on the increase in lieu of the externally imported ones. Leach and Mearns (1996) revealed that challenging received wisdom (intuitive knowledge) is furthering upon its value in natural resources management. Many argued that the more rural people are isolated from the management of their common properties, the more they part away from the regime because they feel alienated. Chambers (1983) called alienation of indigenous techniques a tragedy of the commons. Thus, indigenous knowledge should therefore not be alienated from the trees management regime because such techniques evolved and reflect a society's intimate understanding of its ecological and social environment (Warren, 1991), through constant use and domestication of resources.

Giving an account of the specific and general impact of the practices in maintaining species diversities, one can simply judge that alienation of rural managers have played a negative role in woody species (tree) degradation in area. For comparative reasons, Joet al. (1998) reported that as a result of improved clearing methods, densities of up to 100 shoots/ha of species including *Guiera senegalensis*, *Combretum glutinosum* and *Piliostigma reticulatum* are maintained in the fields of several hundreds of villages around Maradi, Niger. In Nigeria *Azadirachta indica* and *Eucalyptus species* are planted in Parklands of Katsina State (Otegbeye and Olukosi, 1993). No single externally driven project will succeed in maintaining diversity of multiple species than the indigenous techniques because most of them rely on single species regeneration. Indigenous techniques are most preferred (Tiffen, Mortimore, and Gichuki, 1994) because it is worrisome to see that about four fifths of Nigeria was once savanna been converted to agriculture or grazing lands (David, 2008a) while external practices of management and programmes still engulf a lot.

STUDY AREA

The Maradi - Katsina border region is located between latitude 12°59'N and 13.5°N and longitude 7.1°E and 7°36'E. With a population of about 19 million, the surface area of the Maradi–Katsina–Kano zone is up to 83,000 sq km. This is one of 23 most densely populated areas in West Africa because of its density of over 200 inhabitants per sq. km (Abdoul and Trémolières, 2007).

The Maradi deppartment on the northern end of the region is one of the eight Regions of Niger Republic. It is located in south-centre Niger, east of the Region of Tahoua, west of Zinder, and north of Nigeria's city of Katsina. Most of the 35,100 km² (Wikipedia, 2012) of Maradi land is classified as 'Sahel', though the northern parts head toward desert. It is a region of high temperatures, unreliable rainfall as well as low relative humidity (Mortimore, 2001b). The region is characterized by extensive flat dry lands on which transhumant

livestock herders move several hundreds of kilometres north and south annually following rains and grazing for their herds.

Katsina is on the southern part of the region located some 160 miles east of the city of Sokoto, and 84 miles northwest of Kano, close to the border of Maradi region in Niger (Wikipedia, 2012). It is one of the North West states of Nigeria that shares its Northern border with the Maradi deppartment in Niger Republic. Katsina covered a landmass of about 142 km² (Wikipedia, 2012), is a city (formerly a city-state), a Local Government Area in northern Nigeria and the capital of Katsina State.

Dan- Matyawa is in the West of Maradi town and located between Latitude 12^o 53.695¹ N and Longitude 007^o 35.107¹ E. Kabobi village is approx. 40.22 Kms North-East of Katsina town in Nigeria and located between Latitude 12^o 53.695¹ N and Longitude 007^o 35.107¹ E.



Plate 1. Trees of Dan Matyawa in Niger Rep. (date 05/07/2012)

METHODS

The study is based on user groups of two villages of the Maradi - Katsina border region who are regarded as knowledgeable in vegetation resources use and management. The user groups formed the sampling frame from which the respondents were drawn. Thus a total of four (4) user groups were identified in Dan Matyawa in Maradi department of Niger and Kabobi of Katsina in Nigeria respectively. These are farmers, herbalists, pastoralists and wood carvers as well as farmers, herbalists, blacksmiths and wood carvers, respectively. This user groups put up the total population to 183 individuals.

Systematic sampling technique was used to draw sample from the population. For the sampling, each individual of the population was assigned number for identification. Therefore, all 3rd order consecutive individuals of a user group were selected as a respondents based on the assigned numbers. Group interview was administered using checklist in late afternoon when respondents retire from occupational activities.

The user groups, their composition and respondents are based on reconnaissance study and thus are summarized in tables 1 and 2 below.

Table 1. Composition of User Groups in the Two Villages Studied

S/N	User Groups	<i>Dan Matyawa (Niger Republic)</i>		<i>Kabobi (Nigeria)</i>	
		<i>Population/ User Groups</i>	<i>Number of Respondents</i>	<i>Population/ User Groups</i>	<i>Number of Respondents</i>
1.	Farmers	52	17	48	16
2.	Herbalists	17	6	20	7
3.	Wood carvers	6	2	7	2
4.	Pastoralists	14	5	11	4
	Total	89	30	94	29

Source: Author (2012)

RESULTS

Results in table 2 and 3 from the group interview conducted on the respondents. Because the villages are on same geographic location, the species identified as well as the methods are similar but the applications may vary because of difference in forest laws of Niger and Nigeria.

Table 2. Indigenous Methods of Tree Management of Dan Matyawa village

S/N	Methods	Species managed using each technique
1	Natural Regeneration	Fadherbia albida, Anogeissus leocarpus, Guiera senegalensis, and Piliostigma reticulatum and most on farm species.
2	Tree Planting	Azadirachta indica and Magnifera indica
3	Lopping and Pollarding	Azadirachta indica and Fardherbia albida
4	Access Restriction on privately owned species	Magnifera indica, Psidium guajava, Anarcadium acidantale

Source: Field work (2012)

Table 3. Indigenous methods of Trees Management of Kabobi village

S/N	Methods	Species managed using each technique
1	Natural Regeneration	<i>Piliostigma reticulatum, Tamarindus indica, Azadirachta indica, Ficus plataphylla, Ficus polita,</i>
2	Trees Planting	<i>Azadirachta indica, Eucalyptus camaldulensis, Jathropa curcas, Moringa oleifera</i>
3	Lopping	<i>Fardhebia albida, Azadirachta indica</i>
4	Access Restriction on privately owned species	<i>Magnifera indica, Psidium guajava, Anarcadium acidantale</i>

Source: Field work (2012)

DISCUSSION

Tables 2 and 3 showed that there are four methods used by people of the study villages for managing trees. These are;

Natural regeneration is a practice of people of the area where all species of trees are regenerated on farms, in compounds and in bushes. Through natural generation, indigenous

shrubs and trees are mostly raised by selecting the best shoot from the stalk. In the area the well-developed shoot is raised from the growing seedlings while others are removed in a practice called 'Sassaben Zamani'. Where natural generation is practiced in the Maradi, densities of up to 100 shoots/ha of species including *Guiera senegalensis*, *Combretum glutinosum* and *Piliostigma reticulatum* are maintained in the fields of several hundreds of villages around Maradi, Niger (Joet et al., 1998). Using this process, trees growing naturally on farms are selected and raised by farmers and herbalists in the area. In Kabobi, naturally growing species are raised through the same process of selection of best shoots by farmers.

Planting of trees which is a method practiced by all user groups. This method is useful in the areas where economic trees and the threatened species are accessed either from the bush or from Local forestry department for planting. The study also found out those farmers, herbalists as well as local forest agents engage in the planting of species in farms and compounds and along cattle tracks for demarcation. Seedling of *Azadirachta indica* and *Magnifera indica* were prepared by local forest authorities in Agaei terrior of Maradi and Kaita local forestry in Katsina for distribution as part of efforts to improve planting. Species such as *Azadirachta indica* and *Magnifera indica* as well as some threatened species such as *Ficus plataphylla*, *Ficus polita* and *Anacardium accidantale* are planted by farmers and herbalists of the area. Seedlings are accessed from forestry offices and KTAPU in Katsina. Researches such as that of Otegbeye and Olukosi (1993) reported same practices where *Azadirachta indica* and *Eucaplytus species* are planted in Parklands of Katsina State.

Lopping of developed branches of trees in every 2-3 years is common management technique of the area especially in the Maradi department where heavy fines are charge for felling trees. In virtually all villages, trees are lopped only with permission from the local forest authorities and certain sections of the species are removed. Even with the permit only species such as *Azadirachta indica* and *Fardherbia albida* trees that can regenerate vigorously are allowed for lopping. Lopping is for all user groups because pastoralists, farmers and blacksmiths used this method for species management in the area. Species are systematically cut from smaller branches yearly to allow re-growth and for uses in a practice called pruning. Species of *Azadirachta indica* (mainly in compound fields) are lopped annually for fuel wood and are not removed from the root. The pruning of *Parkia biglobosa* is common in Nigeria (Tomlinson et al., 1995).

Access restriction is a method where trees either planted or raised naturally are privately protected by owners. Species on the farms and in compounds are better management by their owners under private protection through restriction on cutting or even lopping.

TECHNIQUES PREFERENCE OF THE RESPONDENTS

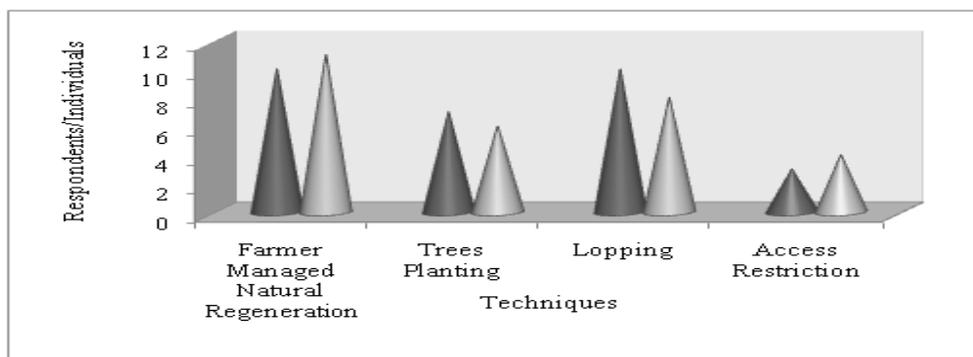


Figure 2. Tree Management Techniques Preferences of the Respondents in the Dan Matyawa (dark) and Kabobi (light) Villages

Figure 2 show that in both villages all user groups prefer farmer managed natural regeneration and lopping which to them are easy and surest ways of providing them with basic needs of fodder and fuel wood. Planting of trees is a method well known to all user groups but because indigenous trees are long paying, farmers and herbalists especially resort to regenerate trees as the method cost little or nothing to them. In many instances users may plant but the exotic and economic trees which are preferred despite all odds of accessing seedlings. Access restriction is practiced in all villages but not easy because one has to stay all time to guard enclaves in certain cases thereby loosing precious hours for other engagements. Therefore the method is considered by all user groups as very tasking.

CONCLUSION

Central to the management regime in the Maradi-Katsina border region is the use of local practices of management which are acquired intuitively and passed through generations. Although institutionalized approaches of management are not strangers in this area, the rational of the people is more on the practice of one or more of their techniques to preserve the resources they love most (Danjuma, 2010). The study found out that irrespective of the species diversities of the area; various methods were used by the local managers and resources users to manage vegetation resources of the villages. These indigenous methods of vegetation resources management as found out in the study area were age long practices used by local inhabitants for the management of their most valuable assets.

Improved management practices are responsible for high stands of trees in both Dan Matyawa village of Niger Republic and Kabobi village in Nigeria. Findings of the study thus revealed that trees management with proportionate participation of indigenes has been a rational approach better than top-down approach of the institutionalized approaches.

Integration of indigenous techniques in the planning and use of natural resources, decentralization of decision-making as well as regulations of rural and forestry codes are major strides in the region's management efforts which are proved evident by the increase of trees and shrubs stands on farms and fields in the study area. People of Kabobi Village were stands are less, mentioned that they had not participated in any aspect of resources management of the area as they were not consulted to do so. They further stressed that even when government offer help in form of trees seedlings to plant they come 'too little' and 'too late'. This is unfortunate because Nigeria still suffers from policy importation which makes it near impossible to revise grey areas in her forest codes of the past. It is not too late to protect and conserve some of the remaining large patches of forest species if stronger financial support and more integration of local managers are taken seriously.

It is recommended that the forest legislations/policies of the two countries should be re-enacted to incorporate local managers and resources user as this will improve stake holder ship in that regard. Moreover, if external management approaches are necessary, they should carry along local managers in the implementation of their objectives.

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